HIGHWAY WORK PROPOSAL

Wisconsin Department of Transportation
DT1502 01/2020 s.66.0901(7) Wis. Stats

Proposal Number: 003

COUNTY	STATE PROJECT	FEDERAL	PROJECT DESCRIPTION	HIGHWAY
Milwaukee	1229-04-71	WISC 2023001	City Glendale, N Port Washington Rd; Bender Rd To W Daphne Rd	LOC STR
Milwaukee	1229-04-72	WISC 2023002	I-43 North South Freeway; Union Pacific Rr Bridge B-40-921	IH 043
Milwaukee	1229-04-73	WISC 2023003	I-43 North South Freeway; Bender Road To Brown Deer Road	IH 043
Milwaukee	1229-04-77	N/A	C Glendale, Green Bay Road; Intersection With Range Line Rd	STH 057

ADDENDUM REQUIRED

ATTACHED AT BACK

This proposal, submitted by the undersigned bidder to the Wisconsin Department of Transportation, is in accordance with the advertised request for proposals. The bidder is to furnish and deliver all materials, and to perform all work for the improvement of the designated project in the time specified, in accordance with the appended Proposal Requirements and Conditions.

Proposal Guaranty Required: $1,000,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Date: October 11, 2022 Time (Local Time): 11:00 am	Firm Name, Address, City, State, Zip Code SAMPLE NOT FOR BIDDING PURPOSES
Contract Completion Time June 30, 2025	
Assigned Disadvantaged Business Enterprise Goal 12%	This contract is subject to federal oversight.

This certifies that the undersigned bidder, duly sworn, is an authorized representative of the firm named above; that the bidder has examined and carefully prepared the bid from the plans, Highway Work Proposal, and all addenda, and has checked the same in detail before submitting this proposal or bid; and that the bidder or agents, officer, or employees have not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal bid.

Do not sign, notarize, or submit this Highway Work Proposal when submitting an electronic bid on the Internet.

Subscribed and sworn to before me this date _____

(Signature, Notary Public, State of Wisconsin)	(Bidder Signature)
(Print or Type Name, Notary Public, State Wisconsin)	(Print or Type Bidder Name)
(Date Commission Expires)	(Bidder Title)

Notary Seal

Type of Work: For Department Use Only

Grading, Base, Concrete Pavement, Asphalt Pavement, Storm Sewer, Curb and Gutter, Sidewalk, Concrete Barrier, Guardrail, Bridge Construction, Box Culvert Construction, Retaining Walls, Noise Walls, Fencing, Traffic Signals, Street Lighting, Pavement Markings, Signs, Sign Structures

Notice of Award Dated	Date Guaranty Returned

PLEASE ATTACH
PROPOSAL GUARANTY HERE

Effective with November 2007 Letting

PROPOSAL REQUIREMENTS AND CONDITIONS

The bidder, signing and submitting this proposal, agrees and declares as a condition thereof, to be bound by the following conditions and requirements.

If the bidder has a corporate relationship with the proposal design engineering company, the bidder declares that it did not obtain any facts, data, or other information related to this proposal from the design engineering company that was not available to all bidders.

The bidder declares that they have carefully examined the site of, and the proposal, plans, specifications and contract forms for the work contemplated, and it is assumed that the bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished, and as to the requirements of the specifications, special provisions and contract. It is mutually agreed that submission of a proposal shall be considered conclusive evidence that the bidder has made such examination.

The bidder submits herewith a proposal guaranty in proper form and amount payable to the party as designated in the advertisement inviting proposals, to be retained by and become the property of the owner of the work in the event the undersigned shall fail to execute the contract and contract bond and return the same to the office of the engineer within fourteen (14) days after having been notified in writing to do so; otherwise to be returned.

The bidder declares that they understand that the estimate of quantities in the attached schedule is approximate only and that the attached quantities may be greater or less in accordance with the specifications.

The bidder agrees to perform the said work, for and in consideration of the payment of the amount becoming due on account of work performed, according to the unit prices bid in the following schedule, and to accept such amounts in full payment of said work.

The bidder declares that all of the said work will be performed at their own proper cost and expense, that they will furnish all necessary materials, labor, tools, machinery, apparatus, and other means of construction in the manner provided in the applicable specifications and the approved plans for the work together with all standard and special designs that may be designed on such plans, and the special provisions in the contract of which this proposal will become a part, if and when accepted. The bidder further agrees that the applicable specifications and all plans and working drawings are made a part hereof, as fully and completely as if attached hereto.

The bidder, if awarded the contract, agrees to begin the work not later than ten (10) days after the date of written notification from the engineer to do so, unless otherwise stipulated in the special provisions.

The bidder declares that if they are awarded the contract, they will execute the contract agreement and begin and complete the work within the time named herein, and they will file a good and sufficient surety bond for the amount of the contract for performance and also for the full amount of the contract for payment.

The bidder, if awarded the contract, shall pay all claims as required by Section 779.14, Statutes of Wisconsin, and shall be subject to and discharge all liabilities for injuries pursuant to Chapter 102 of the Statutes of Wisconsin, and all acts amendatory thereto. They shall further be responsible for any damages to property or injury to persons occurring through their own negligence or that of their employees or agents, incident to the performance of work under this contract, pursuant to the Standard Specifications for Road and Bridge Construction applicable to this contract.

In connection with the performance of work under this contract, the contractor agrees to comply with all applicable state and federal statutes relating to non-discrimination in employment. No otherwise qualified person shall be excluded from employment or otherwise be subject to discrimination in employment in any manner on the basis of age, race, religion, color, gender, national origin or ancestry, disability, arrest or conviction record (in keeping with s.111.32), sexual orientation, marital status, membership in the military reserve, honesty testing, genetic testing, and outside use of lawful products. This provision shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation, and selection for training, including apprenticeship. The contractor further agrees to ensure equal opportunity in employment to all applicants and employees and to take affirmative action to attain a representative workforce.

The contractor agrees to post notices and posters setting forth the provisions of the nondiscrimination clause, in a conspicuous and easily accessible place, available for employees and applicants for employment.

If a state public official (section 19.42, Stats.) or an organization in which a state public official holds at least a 10% interest is a party to this agreement, this contract is voidable by the state unless appropriate disclosure is made to the State of Wisconsin Ethics Board.

Effective with August 2015 Letting

BID PREPARATION

Preparing the Proposal Schedule of Items

A General

(1) Obtain bidding proposals as specified in section 102 of the standard specifications prior to 11:45 AM of the last business day preceding the letting. Submit bidding proposals using one of the following methods:

1. Electronic bid on the internet.
2. Electronic bid on a printout with accompanying diskette or CD ROM.
3. Paper bid under a waiver of the electronic submittal requirements.

(2) Bids submitted on a printout with accompanying diskette or CD ROM or paper bids submitted under a waiver of the electronic submittal requirements govern over bids submitted on the internet.

(3) The department will provide bidding information through the department's web site at:
https://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

The contractor is responsible for reviewing this web site for general notices as well as information regarding proposals in each letting. The department will also post special notices of all addenda to each proposal through this web site no later than 4:00 PM local time on the Thursday before the letting. Check the department's web site after 5:00 PM local time on the Thursday before the letting to ensure all addenda have been accounted for before preparing the bid. When bidding using methods 1 and 2 above, check the Bid Express™ on-line bidding exchange at http://www.bidx.com/ after 5:00 PM local time on the Thursday before the letting to ensure that the latest schedule of items Expedite file (*.ebs or *.00x) is used to submit the final bid.

(4) Interested parties can subscribe to the Bid Express™ on-line bidding exchange by following the instructions provided at the www.bidx.com web site or by contacting:

Info Tech Inc.
5700 SW 34th Street, Suite 1235
Gainesville, FL 32608-5371
email: mailto:customer.support@bidx.com

(5) The department will address equipment and process failures, if the bidder can demonstrate that those failures were beyond their control.

(6) Contractors are responsible for checking on the issuance of addenda and for obtaining the addenda. Notice of issuance of addenda is posted on the department's web site at:
https://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

or by calling the department at (608) 266-1631. Addenda can ONLY be obtained from the departments web site listed above or by picking up the addenda at the Bureau of Highway Construction, 4th floor, 4822 Madison Yards Way, Madison, WI, during regular business hours.

(7) Addenda posted after 5:00 PM on the Thursday before the letting will be emailed to the eligible bidders for that proposal. All eligible bidders shall acknowledge receipt of the addenda whether they are bidding on the proposal or not. Not acknowledging receipt may jeopardize the awarding of the project.

B Submitting Electronic Bids

B.1 On the Internet

(1) Do the following before submitting the bid:

1. Have a properly executed annual bid bond on file with the department.

2. Have a digital ID on file with and enabled by Info Tech Inc. Using this digital ID will constitute the bidder's signature for proper execution of the bidding proposal.

(2) In lieu of preparing, delivering, and submitting the proposal as specified in 102.6 and 102.9 of the standard specifications, submit the proposal on the internet as follows:

1. Download the latest schedule of items reflecting all addenda from the Bid Express™ web site.
2. Use Expedite™ software to enter a unit price for every item in the schedule of items.
3. Submit the bid according to the requirements of Expedite™ software and the Bid Express™ web site. Do not submit a bid on a printout with accompanying diskette or CD ROM or a paper bid. If the bidder does submit a bid on a printout with accompanying diskette or a paper bid in addition to the internet submittal, the department will disregard the internet bid.
4. Submit the bid before the hour and date the Notice to Contractors designates.
5. Do not sign, notarize, and return the bidding proposal described in 102.2 of the standard specifications.

(3) The department will not consider the bid accepted until the hour and date the Notice to Contractors designates.

B.2 On a Printout with Accompanying Diskette or CD ROM

(1) Download the latest schedule of items from the Wisconsin pages of the Bid Express™ web site reflecting the latest addenda posted on the department's web site at:
https://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

Use Expedite ™ software to prepare and print the schedule of items. Provide a valid amount for all price fields. Follow instructions and review the help screens provided on the Bid Express™ web site to assure that the schedule of items is prepared properly.

(2) Staple an 8 1/2 by 11 inch printout of the Expedite™ generated schedule of items to the other proposal documents submitted to the department as a part of the bidder's sealed bid. As a separate submittal, not in the sealed bid envelop but due at the same time and place as the sealed bid, also provide the Expedite™ generated schedule of items on a 3 1/2 inch computer diskette or CD ROM. Label each diskette or CD ROM with the bidder's name, the 4 character department-assigned bidder identification code from the top of the bidding proposal, and a list of the proposal numbers included on that diskette or CD ROM as indicated in the following example:

Bidder Name

BN00

Proposals: 1, 12, 14, & 22

(3) If bidding on more than one proposal in the letting, the bidder may include all proposals for that letting on one diskette or CD ROM. Include only submitted proposals with no incomplete or other files on the diskette or CD ROM.

(4) The bidder-submitted printout of the Expedite™ generated schedule of items is the governing contract document and must conform to the requirements of section 102 of the standard specifications. If a printout needs to be altered, cross out the printed information with ink or typewriter and enter the new information and initial it in ink. If there is a discrepancy between the printout and the diskette or CD ROM, the department will analyze the bid using the printout information.

(5) In addition to the reasons specified in section 102 of the standard specifications, proposals are irregular and the department may reject them for one or more of the following:

1. The check code printed on the bottom of the printout of the Expedite™ generated schedule of items is not the same on each page.
2. The check code printed on the printout of the Expedite™ generated schedule of items is not the same as the check code for that proposal provided on the diskette or CD ROM.

3. The diskette or CD ROM is not submitted at the time and place the department designates.

C Waiver of Electronic Submittal

(1) The bidder may request a waiver of the electronic submittal requirements. Submit a written request for a waiver in lieu of bids submitted on the internet or on a printout with accompanying diskette or CD ROM. Use the waiver that was included with the paper bid document sent to the bidder or type up a waiver on the bidder's letterhead. The department will waive the electronic submittal requirements for a bidding entity (individual, partnership, joint venture, corporation, or limited liability company) for up to 4 individual proposals in a calendar year. The department may allow additional waivers for equipment malfunctions.

(2) Submit a schedule of items on paper conforming to section 102 of the standard specifications. The department charges the bidder a $75 administrative fee per proposal, payable at the time and place the department designates for receiving bids, to cover the costs of data entry. The department will accept a check or money order payable to: "Wisconsin, Dept. of Transportation."

(3) In addition to the reasons specified in section 102 of the standard specifications, proposals are irregular and the department may reject them for one or more of the following:

1. The bidder fails to provide the written request for waiver of the electronic submittal requirements.
2. The bidder fails to pay the $75 administrative fee before the time the department designates for the opening of bids unless the bidder requests on the waiver that they be billed for the $75.
3. The bidder exceeds 4 waivers of electronic submittal requirements within a calendar year.

(4) In addition to the reasons specified in section 102 of the standard specifications, the department may refuse to issue bidding proposals for future contracts to a bidding entity that owes the department administrative fees for a waiver of electronic submittal requirements.

PROPOSAL BID BOND

Wisconsin Department of Transportation

DT1303 1/2006

Proposal Number	Project Number	Letting Date
Name of Principal		
Name of Surety	State in Which Surety is Organized	

We, the above-named Principal and the above-named Surety, are held and firmly bound unto the State of Wisconsin in the sum equal to the Proposal Guaranty for the total bid submitted for the payment to be made; we jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns. The condition of this obligation is that the Principal has submitted a bid proposal to the State of Wisconsin acting through the Department of Transportation for the improvement designated by the Proposal Number and Letting Date indicated above.

If the Principal is awarded the contract and, within the time and manner required by law after the prescribed forms are presented for signature, enters into a written contract in accordance with the bid, and files the bond with the Department of Transportation to guarantee faithful performance and payment for labor and materials, as required by law, or if the Department of Transportation shall reject all bids for the work described, then this obligation shall be null and void; otherwise, it shall be and remain in full force and effect. In the event of failure of the Principal to enter into the contract or give the specified bond, the Principal shall pay to the Department of Transportation **within 10 business days of demand** a total equal to the Proposal Guaranty as liquidated damages; the liability of the Surety continues for the full amount of the obligation as stated until the obligation is paid in full.

The Surety, for value received, agrees that the obligations of it and its bond shall not be impaired or affected by any extension of time within which the Department of Transportation may accept the bid; and the Surety does waive notice of any such extension.

IN WITNESS, the Principal and Surety have agreed and have signed by their proper officers and have caused their corporate seals to be affixed this date: **(DATE MUST BE ENTERED)**

PRINCIPAL

(Company Name) **(Affix Corporate Seal)**

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Name of Surety) **(Affix Seal)**

(Signature of Attorney-in-Fact)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

On the above date, this instrument was acknowledged before me by the named person(s).

(Signature, Notary Public, State of Wisconsin)

(Print or Type Name, Notary Public, State of Wisconsin)

(Date Commission Expires)

Notary Seal

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

On the above date, this instrument was acknowledged before me by the named person(s).

(Signature, Notary Public, State of Wisconsin)

(Print or Type Name, Notary Public, State of Wisconsin)

(Date Commission Expires)

Notary Seal

IMPORTANT: A certified copy of Power of Attorney of the signatory agent must be attached to the bid bond.

CERTIFICATE OF ANNUAL BID BOND

Wisconsin Department of Transportation

DT1305 8/2003

Time Period Valid (From/To)
Name of Surety
Name of Contractor
Certificate Holder Wisconsin Department of Transportation

This is to certify that an annual bid bond issued by the above-named Surety is currently on file with the Wisconsin Department of Transportation.

This certificate is issued as a matter of information and conveys no rights upon the certificate holder and does not amend, extend or alter the coverage of the annual bid bond.

Cancellation: Should the above policy be cancelled before the expiration date, the issuing surety will give thirty (30) days written notice to the certificate holder indicated above.

(Signature of Authorized Contractor Representative) (Date)

March 2010

LIST OF SUBCONTRACTORS

Section 66.0901(7), Wisconsin Statutes, provides that as a part of the proposal, the bidder also shall submit a list of the subcontractors the bidder proposes to contract with and the class of work to be performed by each. In order to qualify for inclusion in the bidder's list a subcontractor shall first submit a bid in writing, to the general contractor at least 48 hours prior to the time of the bid closing. The list may not be added to or altered without the written consent of the municipality. A proposal of a bidder is not invalid if any subcontractor and the class of work to be performed by the subcontractor has been omitted from a proposal; the omission shall be considered inadvertent or the bidder will perform the work personally.

No subcontract, whether listed herein or later proposed, may be entered into without the written consent of the Engineer as provided in Subsection 108.1 of the Standard Specifications.

Name of Subcontractor	Class of Work	Estimated Value

DECEMBER 2000

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS - PRIMARY COVERED TRANSACTIONS

Instructions for Certification

1. By signing and submitting this proposal, the prospective contractor is providing the certification set out below.

2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective contractor shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective contractor to furnish a certification or an explanation shall disqualify such person from participation in this transaction.

3. The certification in this clause is a material representation of fact upon which reliance was placed when the department determined to enter into this transaction. If it is later determined that the contractor knowingly rendered an erroneous certification in addition to other remedies available to the Federal Government the department may terminate this transaction for cause or default.

4. The prospective contractor shall provide immediate written notice to the department to whom this proposal is submitted if at any time the prospective contractor learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department to which this proposal is being submitted for assistance in obtaining a copy of those regulations.

6. The prospective contractor agrees by submitting this proposal that, should this contract be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department entering into this transaction.

7. The prospective contractor further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," which is included as an addendum to PR-1273 - "Required Contract Provisions Federal Aid Construction Contracts," without

modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

8. The contractor may rely upon a certification of a prospective subcontractor/materials supplier that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A contractor may decide the method and frequency by which it determines the eligibility of its principals. Each contractor may, but is not required to, check the Disapproval List (telephone # 608/266/1631).

9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

10. Except for transactions authorized under paragraph 6 of these instructions, if a contractor in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department may terminate this transaction for cause or default.

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

(1) The prospective contractor certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offense enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective contractor is unable to certify to any of the statements in this certification, such prospective contractor shall attach an explanation to this proposal.

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1229-04-71, City Glendale, N Port Washington Road, Bender Rd to W Daphne Rd, Local Street; Project 1229-04-72, I-43 North South Freeway, Union Pacific RR Bridge B-40-921, IH-43; Project 1229-04-73, I-43 North South Freeway, Bender Road to Brown Deer Road, IH-43; and Project 1229-04-77, C Glendale, Green Bay Road, Intersection with Range Line Rd, STH 57; all in Milwaukee County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2022 Edition, as published by the department, and these special provisions.

If all or a portion of the plans and special provisions are developed in the SI metric system and the schedule of prices is developed in the US standard measure system, the department will pay for the work as bid in the US standard system.

100-005 (20220107)

Perform all Union Pacific Railroad Company (UPRR) work in accordance with the following references, (adopted by the Union Pacific Engineering Department, latest edition, and in addition to the Special Provisions, Plans and Standard Specifications):

1. UPRR Standard Plans
2. UPRR General Conditions and Specifications
3. UPRR Guidelines
4. UPRR "SPECIAL CONDITIONS" IH-43 Reconstruction, Glendale, WI March 28, 2022, (including references to UPRR on-line and hard-copy documents)
5. AREMA Manual for Railway Engineering

If there is a discrepancy or conflict between the referenced specifications and the special provisions or standard specifications regarding UPRR work, the stricter requirement for the contractor between the two specifications governs.

2. General Information, Definitions, and Terms.

Supplement standard spec 101.2 with the following:

UPRR Union Pacific Railroad Company

Modify standard spec 101.3 with the following:

Roadbed The graded portion of a highway or track section, within top slopes and side slopes, prepared as a foundation for the pavement structure and shoulders, or track section.

Roadway The portion of a highway, or railway, within the limits of construction. A divided highway has 2 or more roadways.

Subgrade The top surface of a roadbed upon which the pavement structure and shoulders, or track section, are constructed.

Supplement standard spec 101.3 with the following:

Ballast The layer or layers of specified or selected material of designed thickness placed on subballast to support ties, rail and other track material.

Subballast The layer or layers of specified or selected material of designed thickness placed on a subgrade to support ballast, ties, rail and other track material.

Railway	A private way for the purpose of train operations, including the entire area within the private right-of-way.
Track Section	The combination of subballast, ballast, ties, rails and other track material placed on a subgrade to support the railroad load and distribute it to the roadbed.
UPRR Engineer	The UPRR or the UPRR's authorized representative limited by the particular duties assigned to the representative.

3. Scope of Work.

The work under this contract shall consist of removals, grading, base aggregate, concrete pavement, asphaltic pavement, concrete curb and gutter, concrete barrier, erosion control, storm sewer, permanent signing, traffic control, pavement marking, restoration, structures, lighting, signals, FTMS, and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

Structures:

Bridges

B-40-577	B-40-578	B-40-732	B-40-733	B-40-734	B-40-735
B-40-917	B-40-921	B-40-1026	B-40-1027	B-40-1028	

Noise Barriers

N-40-99	N-40-100	N-40-102	N-40-103

Retaining Walls

R-40-412	R-40-413	R-40-414	R-40-415	R-40-636	R-40-637
R-40-639	R-40-640	R-40-641	R-40-642	R-40-645	R-40-646
R-40-647	R-40-648	R-40-649			

Sign Structures

S-40-461	S-40-3033	S-40-3034	S-40-3035	S-40-3036	S-40-3037
S-40-3038	S-40-3039	S-40-3040	S-40-3041	S-40-3043	S-40-3044
S-40-3045	S-40-3046	S-40-3047	S-40-3048	S-40-3049	S-40-3050
S-40-3051	S-40-3052	S-40-3053	S-40-3054	S-40-3055	S-40-3056
S-40-3057					

104-005 (20090901)

4. Non-mandatory Pre-Bid Meeting.

Add the following to standard spec 102.3.1 as paragraph three:

(3) Prospective bidders are invited to attend a non-mandatory pre-bid meeting on September 20, 2022 at 10:00 AM. The meeting link is shown below and will also be published on the HCCI website.

Microsoft Teams meeting

Join on your computer or mobile app

Click here to join the meeting

Or call in (audio only)

+1 608-571-2209,,532300045#

5. Prosecution and Progress.

Begin work within 10 calendar days after the engineer issues a written notice to do so.

Provide the start date to the engineer in writing within a month after executing the contract but at least 14 calendar days before the preconstruction conference. Upon approval, the engineer will issue the notice to proceed within 10 calendar days before the approved start date.

To revise the start date, submit a written request to the engineer at least two weeks before the intended start date. The engineer will approve or deny that request based on the conditions cited in the request and its effect on the department's scheduled resources.

Start work no earlier than March 13, 2023.

The completion date is based on an expedited work schedule and may require extraordinary forces and equipment; work on Saturdays and Sundays; and work at night.

Expect early Spring and late Fall weather work for grading/excavation of frozen ground, high ground water, dewatering during those months, and mitigation efforts for high water table elevations shall not be considered adverse weather delays to construction. Cost for dewatering is considered incidental to construction. Anticipate cold weather in early spring and late fall to perform concrete masonry, concrete paving and ancillary concrete work (curb, median barrier, etc.) during early Spring and Late Fall Seasons. Plan to heat aggregates and water for mixes, and that the heating of the aggregate and water is considered incidental to those concrete items. Anticipate frozen grade/subgrade. Rework, heat, blanket, cover, compact, remove/replace such that the grade/subgrade is not frozen prior to constructing and backfilling storm sewer and culvert pipes. Technique to mitigate frozen grade/subgrade shall be approved by the engineer. Cost to mitigate frozen grade/subgrade is considered incidental to the applicable items of work.

Indicate on the proposed schedule of operations that a large force and adequate equipment will be needed to assure that the work will be completed within the established contract time.

Be advised that there will be multiple mobilizations and/or remobilizations to complete construction operations. No additional payment will be made, by the department, for additional mobilizations.

Obtain all permits that may be required for off peak and nighttime work, including hauling of materials. Cost of all permits is incidental to the project.

Provide seven day advanced notice to the department prior to removing freeway structures.

Place topsoil in all graded areas as designated by the engineer immediately after grading has been completed. Fertilize, seed and mulch or fertilize and sod all areas within five calendar days after placement of topsoil.

Clear debris and buildup at temporary precast concrete barrier scuppers and openings as directed by the engineer to ensure proper drainage is maintained. Cost of clearing debris and buildup from scuppers are incidental to the concrete barrier temporary precast bid items.

A. CPM Progress Schedule

Refer to the Baseline CPM Progress Schedule items elsewhere in these special provisions.

B. Schedule of Operations

Traffic shifts shown in a given stage may occur at different times during that stage depending on the controlling elements for a given traffic movement. Do not move to the next stage until all work in the current stage is completed or as approved by the engineer. The department anticipates that the schedule for each stage shall be as follows:

Stage 1A Construction:

Freeway and Ramp Construction

- Construct temporary widening pavement on the IH 43 SB outside shoulder.
- Construct temporary ramp connections at Good Hope Road Ramps C and D and Brown Deer Road Ramps C and D.
    - Offset construction so that similar ramps at Good Hope Road and Brown Deer Road are not closed at the same time. (eg. Good Hope Ramp C must remain open while Brown Deer Ramp C is closed for temporary ramp connection construction).

- Construct temporary widening on the IH 43 SB inside shoulder from approximately Station 1210+00 to 1222+00.
- Begin B-40-733 (Brown Deer Road EB bridge) and B-70-734 (Good Hope Road EB bridge) bridge widening.
- Begin construction of R-40-412 (South of Brown Deer Road) and R-40-414 (South of Good Hope Road).
- Construct Good Hope Ramp C drainage swale.

Railroad Construction

- Construct UPRR Access Roads.
- Begin UPRR Embankment Construction.
- Begin construction of B-40-921 (UPRR bridge).
- Begin construction of R-40-649.

Local Road Construction

- Begin construction of temporary pavement in the median on Brown Deer Road.
- Construct temporary pavement in the median on Port Washington Road.
    - North and South of Bender Road intersection and North of Coventry Court intersection.
- Construct temporary pavement on the Port Washington Road NB outside lane from Bender Road to existing UPRR structure.
- Begin construction on Port Washington Road NB from Brentwood Lane to Daphne Road.
- Construct STH 57/Green Bay Road and Range Line Road intersection.

Stage 1B Construction:

Freeway and Ramp Construction

- Construct temporary widening pavement on the IH 43 SB inside shoulder.
- Continue B-40-733 (Brown Deer Road EB bridge) and B-40-734 (Good Hope Road EB bridge) bridge widening.
- Construct B-40-732 (Brown Deer Road WB bridge) median pier.
- Continue construction of R-40-412 (South of Brown Deer Road) and R-40-414 (South of Good Hope Road).

Railroad Construction

- Continue construction of UPRR Embankment.
- Continue construction of B-40-921 (UPRR bridge).
- Continue construction of R-40-649.

Local Road Construction

- Complete construction of temporary pavement in the median on Brown Deer Road.
- Complete construction on Port Washington Road NB from Brentwood Lane to Daphne Road.
- Construct Port Washington Road NB from Daphne Road to Coventry Court.
- Construct Port Washington Road SB from Bender Road to Karl Campus Drive.
- Construct temporary pavement in the median on Good Hope Road and Port Washington Road (at Good Hope Road).

- Construct temporary connection from existing Port Washington Road to proposed Port Washington Road NB lanes.
- Construct temporary connection from proposed Port Washington Road SB lanes to existing Port Washington Road.

Stage 2A Construction:

Freeway and Ramp Construction

- Begin construction on IH 43 NB lanes from approximately Station 1096+00 to north project limits.
- Begin construction on IH 43 median from Station 1154+00 to north project limits.
- Begin construction on Good Hope Road Ramps A and B.
- Begin construction on Brown Deer Road Ramps A and B.
- Construct storm sewer and earthwork required to install storm sewer from Structure 369-S2A to 373-S1A on Brown Deer Road Ramp C.
- Continue B-40-732 (Brown Deer Road WB bridge).
- Complete B-40-734 (Good Hope Road EB bridge) bridge widening.
- Begin construction on B-40-1026 (IH 43 NB bridge over Indian Creek).
- Begin construction on N-40-99, N-40-100, and N-40-103.
- Continue construction of R-40-412 (South of Brown Deer Road).
- Begin construction on R-40-413, R-40-415, R-40-641, R-40-645, R-40-646, and R-40-647.
- Construct S-40-3036.

Railroad Construction

- Continue construction of UPRR Embankment.
- Continue construction of B-40-921.
- Continue construction of R-40-649.

Local Road Construction

- Construct Good Hope Road EB lanes from west project limits to Port Washington Road.
- Construct Good Hope Road EB and WB lanes east of Port Washington Road to east project limits.
- Construct NE and NW quadrants of Port Washington Road and Good Hope Road intersection.
- Construct temporary pavement in SW quadrant of Port Washington Road and Good Hope Road intersection.
- Begin construction on Brown Deer Road EB lanes
- Construct Port Washington Road NB lanes from Bender Road to Karl Campus Drive.
- Construct Port Washington Road SB lanes from Brentwood Lane to Coventry Court.
- Construct Port Washington Road and Bender Road intersection in halves.
- Overlay Bender Road between Jean Nicolet Road and Port Washington Road.
- Paint existing Structure B-40-577.
- Construct R-40-639.

Stage 2B Construction:

Freeway and Ramp Construction

- Continue construction on IH 43 NB lanes from approximately Station 1096+00 to north project limits.
- Continue construction on IH 43 median from Station 1154+00 to north project limits.
- Continue construction on Good Hope Road Ramps A and B.
- Continue construction on Brown Deer Road Ramps A and B.
- Continue B-40-732 (Brown Deer Road WB bridge).
- Continue construction on B-40-1026 (IH 43 NB bridge over Indian Creek).
- Continue construction on N-40-99, N-40-100, and N-40-103.
- Continue construction on R-40-412 (South of Brown Deer Road), R-40-413, R-40-415, R-40-641, R-40-645, R-40-646, and R-40-647.

Railroad Construction

- Complete construction of UPRR Embankment.
- Complete construction of B-40-921.
- Complete construction of R-40-649.
- Remove UPRR access roads.
- Demolish B-40-24 (existing UPRR bridge).

Local Road Construction

- Begin construction on Good Hope Road WB from west project limits to NB Entrance Ramp.
- Construct Good Hope Road WB from NB Entrance Ramp to Port Washington Road.
- Construct NW quadrant of Port Washington Road and Good Hope Road intersection.
- Continue construction on Brown Deer Road EB lanes
- Construct Jean Nicolet Road from Bender Road to Brentwood Lane.
- Construct temporary connection from proposed Jean Nicolet Road to existing Jean Nicolet Road, north of Brentwood Lane.
- Construct Fairfield Court.

Stage 2C Construction:

Freeway and Ramp Construction

- Construct temporary connection from existing IH 43 NB lanes to proposed IH 43 NB lanes.
- Construct temporary pavement gaps in IH 43 SB outside widening once the existing UPRR bridge has been demolished.
- Construct temporary crossover from existing IH 43 SB to proposed IH 43 NB from approximately Station 1189+00 to Station 1204+00.
- Complete construction on IH 43 NB lanes from approximately Station 1096+00 to 1185+00.
- Continue construction on IH 43 NB from approximately Station 1185+00 to north project limits.
- Continue construction on IH 43 median from Station 1154+00 to north project limits.
- Complete construction on Good Hope Road Ramps A and B.
- Continue construction on Brown Deer Road Ramps A and B.
- Continue B-40-732 (Brown Deer Road WB bridge).
- Complete construction on B-40-1026 (IH 43 NB bridge over Indian Creek)

- Continue construction on N-40-99, N-40-100, and N-40-103.
- Continue construction on R-40-412 (South of Brown Deer Road) and R-40-413.
- Complete construction on R-40-415, R-40-641, R-40-645, R-40-646, and R-40-647.
- Construct S-40-3037, S-40-3038, S-40-3036, and S-40-3039.

Local Road Construction

- Complete construction on Brown Deer Road EB lanes.
- Complete construction on Good Hope Road WB from west project limits to NB Entrance Ramp.
- Construct SW quadrant of Port Washington Road and Good Hope Road intersection.
- Construct temporary connection on Port Washington Road NB under B-40-921.
- Construct Port Washington Road SB lanes from Karl Campus to Brentwood Lane once B-40-921 is complete and B-40-24 is demolished.
- Construct Port Washington Road median island (north of Coventry Court).

Stage 2D Construction:

Freeway and Ramp Construction

- Complete construction on IH 43 NB from Station 1185+00 to north project limits.
- Complete construction on IH 43 median from Station 1154+00 to north project limits.
- Complete construction on Brown Deer Road Ramps A and B.
- Construct temporary crossover from existing IH 43 SB to proposed IH 43 NB from approximately Station 1097+00 to Station 1111+50.
- Construct temporary crossover from existing IH 43 SB to proposed IH 43 NB from approximately Station 1174+00 to Station 1184+00.
- Complete B-40-732 (Brown Deer Road WB bridge).
    - With exception of the inside barrier (constructed in Stage 4).
- Complete construction on N-40-99, N-40-100, and N-40-103.
- Continue construction on R-40-413.
- Construct S-40-461, S-40-3041, S-40-3043, and S-40-3044.

Local Road Construction

- Construct median islands on Good Hope Road and Port Washington Road at Good Hope Road.
- Construct median work on B-40-735 (Good Hope Road WB)
- Construct Port Washington Road NB lanes from Karl Campus to Brentwood Lane.

2023 Winter Shutdown:

- Winter shutdown will commence with the completion of Stage 2D in the Fall of 2023. Do not resume work until March 11, 2024 unless approved by the engineer. Provide a start date in writing at least 14 days prior to the planned recommencement of work in 2024. Upon approval the engineer will issue the notice to proceed within 10 days of the approved start date.

Stage 3A Construction:

Freeway and Ramp Construction

- Remove median barrier and construct temporary pavement in IH 43 median from approximately Station 1151+00 to Bender Road bridges.
- Construct temporary asphalt in IH 43 NB shoulder from approximately Station 1157+00 to Bender Road bridges.

- Construct temporary asphalt in IH 43 SB shoulder from approximately Station 1058+00 to Bender Road bridges.
- Construct IH 43 NB lanes from Bender Road bridges to approximately Station 1096+00.
- Begin construction on IH 43 SB from Station 1185+00 to north project limits.
- Begin construction on Brown Deer Road Ramps C and D.
- Construct bridge overlay on B-40-577 (IH 43 NB over Bender Road).
- Begin construction on B-40-733 (Brown Deer Road EB bridge).
- Begin construction of R-40-412 (North of Brown Deer Road).
- Construct R-40-637.
- Construct S-40-3033.

Local Road Construction

- Begin construction on Brown Deer Road WB lanes.
- Construct Port Washington Road SB curb from Bender Road to approx. 108PN+00 once R-40-637 is complete.
- Begin construction on Pheasant Lane over Indian Creek.
- Begin construction on Pheasant Lane (near Heather Lane).
- Begin construction of R-40-648.

Stage 3B Construction:

Freeway and Ramp Construction

- Construct IH 43 median from Bender Road bridges to Station 1154+00.
- Continue construction on IH 43 SB from Station 1185+00 to north project limits.
- Continue construction on Brown Deer Road Ramps C and D.
- Complete construction on B-40-733 (Brown Deer Road EB bridge).
- Complete construction on R-40-412 (North of Brown Deer Road).
- Construct S-40-3034 and S-40-3039.

Local Road Construction

- Construct Port Washington Road medians at Bender Road intersection.
- Complete construction on Brown Deer Road WB lanes.
- Continue construction on Pheasant Lane over Indian Creek.
- Continue construction on Pheasant Lane (near Heather Lane).
- Continue construction of R-40-648.
- Echelon pave surface layer of asphalt on Port Washington Road after R-40-637 construction is complete.

Stage 4A Construction:

Freeway and Ramp Construction

- Begin construction on IH 43 SB from Bender Road bridges to Station 1185+00.
- Begin construction on Good Hope Road Ramps C and D.
- Continue construction on IH 43 SB from Station 1185+00 to north project limits.
- Continue construction of Brown Deer Road Ramps C and D.
- Construct bridge overlay on B-40-578 (IH 43 SB over Bender Road)
- Construct B-40-732 (Brown Deer Road WB over IH 43) parapet.

- Begin construction of B-40-1027 (IH 43 SB over Indian Creek).
- Begin construction of R-40-414 (North of Good Hope Road), R-40-636, R-40-640, and R-40-642.

Local Road Construction

- Overlay Good Hope Road bridges (B-40-734 and B-40-735) with TPO.
- Construct Brown Deer Road median.
- Construct Jean Nicolet Road from High School driveway to Green Tree Road.
- Continue construction on Pheasant Lane over Indian Creek.
- Continue construction on Pheasant Lane (near Heather Lane).
- Begin construction of B-40-1028 (Pheasant Lane over Indian Creek).
- Continue construction of R-40-648.

Stage 4B Construction:

Freeway and Ramp Construction

- Complete construction of IH 43 SB from Bender Road bridges to north project limits.
- Complete construction of Good Hope Road Ramps C and D.
- Complete construction of Brown Deer Road Ramps C and D.
- Complete construction of B-40-1027 (IH 43 SB over Indian Creek).
- Construct N-40-102.
- Complete construction of R-40-414, R-40-636, R-40-640, and R-40-642.
- Construct S-40-3035, S-40-3040, S-40-3045, S-40-3047, S-40-3050, S-40-3051, S-40-3052, S-40-3053, S-40-3054, S-40-3055, S-40-3056, and S-40-3057.

Local Road Construction

- Construct temporary pavement from Daphne Road to High School driveway.
- Construct Jean Nicolet Road from Brentwood Lane to Daphne Road.
- Construct Jean Nicolet Road from Daphne Road to High School driveway in halves.
- Construct Jean Nicolet Road NB curb from Bender Road to approx. 18JN+50 after R-40-636 construction is complete.
- Complete construction on Pheasant Lane over Indian Creek.
- Complete construction on Pheasant Lane (near Heather Lane).
- Complete construction of B-40-1028 (Pheasant Lane over Indian Creek).
- Complete construction of R-40-648.
- Echelon pave surface layer of asphalt on Jean Nicolet Road after R-40-636 construction is complete.

Stage 5 Construction

Freeway and Ramp Construction

- Overlay IH 43 bridges over Indian Creek (B-40-1026 and B-40-1027) with TPO.
- Construct IH 43 median barrier from approximately Station 1151+00 to Bender Road bridges.
- Construct IH 43 median barrier from north project limits to Station 1295+00.
- Restore IH 43 NB shoulder from approximately Station 1157+00 to Bender Road bridges.
- Restore IH 43 SB shoulder from approximately Station 1158+00 to Bender Road bridges.

Local Road Construction

- Overlay Brown Deer Road bridges (B-40-732 and B-40-733) with TPO.
- Overlay Green Tree Road bridge (B-40-917) with TPO.

2024 Winter Shutdown:

- Winter shutdown will commence with the completion of Stage 4B in the Fall of 2024. Do not resume work until March 3, 2025 unless approved by the engineer. Provide a start date in writing at least 14 days prior to the planned recommencement of work in 2025. Upon approval the engineer will issue the notice to proceed within 10 days of the approved state date.

C. Nightly Freeway Shoulder Restoration

When working on the IH 43 NB and SB shoulders without the protection of concrete barrier temporary precast, no open excavation or storing of materials and equipment within the clear zones (20' from edge of traveled way) and no vertical drop-offs greater than two-inches adjacent to the travel lanes will be permitted during Peak Hours and Off Peak Hours with no lane closures. At the end of every Off Peak and nighttime closure, fill all excavated areas, restore the shoulders with base aggregate dense as shown on the plans, and remove all materials and equipment from the clear zones (20' from edge of traveled way). Provide shoulder cross slopes with an 8% maximum rollover with the adjacent travel lanes for Peak Hour and Off Peak Hour freeway traffic operations providing two lanes in each direction. Before opening to two lanes of traffic, place traffic control drums at the inside edge of shoulder as shown on the plans. Nightly freeway shoulder restoration will be paid for under the Base Aggregate Dense 1 ¼-Inch bid item.

In Stage 1, when placing HMA pavement lower layers per the layers and gradations shown on the plans, no vertical drop-offs greater than 2 inches will be permitted where the shoulder abuts the adjacent travel lanes for Peak Hour and Off Peak Hour freeway traffic operations providing two lanes in each direction. Before opening to two lanes of traffic, place traffic control drums at the inside edge of shoulder as shown on the plans.

D. Contractor Coordination

Provide an individual to serve as the contractor's sole point of contact for field utility coordination, traffic closure coordination, and communication for the duration of the project.

Obtain prior acceptance from the engineer and the Construction Program Work Zone Engineer for Full Freeway Closures. Notify local emergency and police agencies seven calendar days prior to freeway closure.

Notify the engineer, businesses and residents that live along Good Hope Road, Brown Deer Road, Jean Nicolet Road, Port Washington Road, Fairfield Court, Brentwood Lane, Clovernook Lane, Acacia Road, Apple Tree Road, Daphne Road, Coventry Court, and Pheasant Lane five business days in advance of restricting access to their houses or business.

Notify the engineer five business days in advance of restricting access to Nicolet High School or the Brown Deer Road Park and Ride.

Attend weekly scheduling meetings to discuss the near-term schedule activities, address any long-term schedule issues, and discuss any relevant technical issues. Develop a rolling three-week schedule identifying the previous week worked and a two week "look ahead". Provide sufficient detail to include actual and planned activities and all the subcontractors for offsite and construction activities, addressing all activities including ramp and lane closure schedules to be performed and identifying issues requiring engineering action or input.

E. Portable Changeable Message Signs

Obtain acceptance from the engineer regarding the wording of all messages on portable changeable message signs prior to placing the message.

F. Freeway and Service Ramp Work Restrictions

Definitions

The following definitions apply to this contract for freeway and service ramp work restrictions:

Freeway No Closures (Peak Hours)

SB Lanes

5:30 AM – 8:30 PM	Monday, Tuesday, Wednesday, Thursday
5:30 AM – 10:00 PM	Friday
9:00 AM – 10:00 PM	Saturday
9:00 AM – 8:30 PM	Sunday

NB Lanes

5:30 AM – 9:30 PM	Monday, Tuesday, Wednesday, Thursday
5:30 AM – 11:00 PM	Friday
9:00 AM – 11:00 PM	Saturday
9:00 AM – 9:30 PM	Sunday

Freeway Lane Closure Hours (Off Peak Hours)

SB Lanes

8:30 PM – 5:30 AM	Monday PM to Friday AM, Sunday PM to Monday AM
10:00 PM – 9:00 AM	Friday PM to Saturday AM, Saturday PM to Sunday AM

NB Lanes

9:30 PM – 5:30 AM	Monday PM to Friday AM, Sunday PM to Monday AM
11:00 PM – 9:00 AM	Friday PM to Saturday AM, Saturday PM to Sunday AM

Service Ramp Closure Hours

SB Ramps

8:00 PM – 6:00 AM	Monday PM to Friday AM, Sunday PM to Monday AM
9:30 PM – 9:30 AM	Friday PM to Saturday AM, Saturday PM to Sunday AM

NB Ramps

9:00 PM – 6:00 AM	Monday PM to Friday AM, Sunday PM to Monday AM
10:30 PM – 8:30 AM	Friday PM to Saturday AM, Saturday PM to Sunday AM

Full Freeway Closure Hours

NB and SB Lanes

11:00 PM – 4:30 AM	Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM
11:00 PM – 6:00 AM	Friday PM to Saturday AM, Saturday PM to Sunday AM

Enhanced coordination is anticipated with adjacent projects for lane closures and full freeway closures. See Article 10, Other Contracts for adjacent projects.

Do not close freeway lanes or shoulders (including service ramps) and ensure that the freeways are entirely clear for traffic during Weekday Peak Hours and Weekend Peak Hours, except as shown in the traffic control plans. Provide a minimum of one lane in each direction of the freeway that is entirely clear for traffic during Weekday Off-Peak Hours and Weekend Off-Peak Hours except as allowed during full closure. Provide a minimum of one lane in each direction of the freeway that is entirely clear for traffic during Nighttime Hours except as allowed during full closure. Close service ramps only during Service Ramp Closure Hours, unless otherwise specified in the plan, or unless otherwise approved by the engineer for safety or operational reasons associated with other adjacent lane or freeway closures.

Follow plan details for closures. Lane restrictions of the freeway beyond that shown on the traffic control plans are subject to lane rental assessments and must be approved by the engineer. If plan details are not provided in the traffic control plan, furnish plans for review by the engineer. Once approved, allow at least three business days prior to the closure of roadway, lane, and ramp as identified in Contractor Coordination.

Do not, at any time, conduct construction operations in the median area and adjacent outside shoulder area of the freeway at the same time without obtaining prior permission of the engineer, beyond that shown on the traffic control plans.

Provide gaps in the work zone as needed to maintain ingress and egress of construction operations.

Do not, at any time, store equipment or materials in the median area without obtaining prior permission of the engineer, beyond that shown on the traffic control plans.

G. Rolling Closure

Short term freeway mainline and service ramp rolling closures may be allowed for a maximum of 15 minutes for the removal and erection of sign structures, equipment moves across the road, or other required work as determined by the engineer. The department will allow short term rolling closures only between 2:00 AM and 4:00 AM, and they may only be performed by freeway law enforcement.

Obtain approval from the engineer before coordinating these closures with freeway law enforcement. Coordinate 14 calendar days before closure. Present the scheduled time for the short term rolling closure at the weekly traffic meeting a minimum of one week before the closure.

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H. Closure Restrictions

General

Full closure and detouring of freeway roads will be restricted to Full Freeway and Service Ramp Closure/Hours unless otherwise specified. The freeway may be closed to facilitate the removal/demolition of structures, erection of girders, deck pours, drainage crossings and to perform work related to major traffic shifts and other work approved by the engineer. Provide signed detour routes, as shown in the plans, fully open and free of construction during all full roadway and service ramp closures.

To minimize the total number of full freeway closures for girder erection, bridge demolition, drainage system construction, and stage construction changes the contractor is allowed full freeway closures between 11:00 PM and 4:30 AM Sunday through Thursday nights and between 11:00 PM and 6:00 AM for Friday and Saturday nights. A full freeway closure is defined as one direction of the freeway. Closing both directions of the freeway constitutes using two full freeway closures. Bridge superstructure demolition activities will require a full freeway closure in both directions. These closures are to be utilized only for bridge demolition, girder erection, drainage system construction, and stage construction changes for the following locations:

- Good Hope Road bridge construction.
- Brown Deer Road bridge construction.
- Union Pacific Railroad bridge demolition and construction.
- Glendale Sanitary Sewer construction.
- Critical Pipe Crossings construction at Stations 1088+50, 1134+75, 1137+50, 1176+75, 1177+75, 1178+80, 1214+60, 1219+00, and 1246+00.

Submit requests for closures 14 calendar days prior to the planned closure events. Submit requests for closures beyond extended hours up to 20 hours 30 calendar days prior to the closure event. For closures greater than 20 hours, submit requests 45 calendar days prior to the planned closure event. Obtain prior approval from the engineer and the Construction Program Work Zone Engineer, (414) 640-1148, for said closures.

Submit requests for extended nighttime closure hours 14 calendar days prior to the planned closure events. Obtain prior approval from the engineer and the Construction Program Work Zone Engineer, (414) 640-1148, for said closures. Notify local emergency and police agencies 7 calendar days prior to closures.

I. Work Zone Ingress/Egress

All locations of work zone egress or ingress for construction vehicles are subject to approval from the engineer. Submit to the engineer locations for freeway access into and out of the work zone for each stage and plans, for approval, that include signage and parallel deceleration and acceleration lanes for each freeway access into and out of the work zones. Submit the locations and plans 14 calendar days prior to each stage for approval by the engineer. This will be an official submittal as defined in section 103.10.2.4 of the Contract Award and Execution located elsewhere in these special provisions.

At the weekly traffic meetings, provide updated information to the Work Zone Access Plan, as approved by the engineer, to direct emergency responders accessing a median barrier restricted work zone. Access for emergency responders shall be maintained at all times and not restricted by vehicles, equipment or the storage of equipment, vehicles or materials.

Access into the work zones is not allowed directly from the freeway during peak hours except where appropriate acceleration and deceleration lanes and traffic control are provided, as approved by the engineer. Access into the work zones from the freeway will be allowed at other times, subject to approval by the engineer, if operations can be safely accomplished and do not result in non-construction traffic entering the work zones. Exiting work zones directly onto the freeway is only allowed when operations do not obstruct or slow traffic on the freeway. All construction vehicles shall yield to all through traffic at all locations.

SEF Rev. 13_0425_revised

J. Local Street Closure Restrictions

Definitions

The following definitions apply to this contract for local street work restrictions:

Peak Hours

6:00 AM – 9:00 PM	Monday, Tuesday, Wednesday, Thursday, Friday
11:00 AM – 8:00 PM	Saturday
1:00 PM – 5:00 PM	Sunday

Off Peak Hours (Night Time Closure Hours)

9:00 PM – 6:00 AM	Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)
9:00 PM – 11:00 AM	Friday PM to Saturday AM
8:00 PM – 1:00 PM	Saturday PM to Sunday AM
5:00 PM – 6:00 AM	Sunday PM to Monday AM

Full Local Road Closure Hours

11:00 PM – 4:30 AM	Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM
11:00 PM – 6:30 AM	Friday PM to Saturday AM, Saturday PM to Sunday AM

Do not close local street traffic lanes or intersections and ensure that the local street traffic lanes are entirely clear for traffic during Peak Hours, except as shown in the traffic control plans. One local street traffic lane and/or the shoulder may be closed but maintain at least one local street traffic lane open to traffic, during Off-Peak Hours, unless otherwise noted below. Close intersections only during Off-Peak Hours, unless otherwise specified in the plan, or unless otherwise approved by the engineer for safety or operational reasons associated with other adjacent local street closures.

To minimize the total number of full local road closures for drainage system construction, the contractor is allowed extended local road closures between 11:00 PM and 4:30 AM Sunday through Thursday nights and between 11:00 PM and 6:30 AM for Friday and Saturday nights. A full local road closure is defined as one direction of the local road. Closing both directions of the local road constitutes using two full local road closures. A total of 16 extended full local road closures are allowed. Bridge superstructure demolition activities will require a full local road closure in both directions. Local Road closures are incidental to standard bid item 643.5000 – Traffic Control. These closures are to be utilized only for bridge demolition, girder erection, and drainage system construction for the following locations:

- Union Pacific Railroad bridge demolition and construction over Port Washington Road.
- Critical Pipe Crossings construction on Port Washington Road at Stations 103PN+00, 105PN+75, and 108PN+50.
- Critical Pipe Crossings construction on Good Hope Road at Station 32GHE+00.
- Critical Pipe Crossings construction on Brown Deer Road at Station 614BDE+00 and 621BDE+50.
- Critical Pipe Crossings construction on Brown Deer Road Ramps at Station 1258+50 (mainline stationing), 1245BDC+30, 1257BDD+30, and 1262BDD+00.

Follow plan details for closures. Lane restrictions beyond that shown on the traffic control plans must be approved by the engineer. If plan details are not provided in the traffic control plan, furnish plans for review by the engineer for approval. Once approved, allow at least five business days prior to the closure of local roadway and/or intersection as identified in Contractor Coordination.

Do not, at any time, conduct construction operations in the median area and adjacent outside shoulder area of the local street at the same time without obtaining prior permission of the engineer, beyond that shown on the traffic control plans.

Do not begin or continue any work that closes local street traffic lanes or intersection outside the allowed time periods specified in this contract. If the contractor fails to open local roadway lanes of traffic and/or intersections to traffic by the specified times, assessments shown in the article Lane Rental Assessment will be placed upon the contractor based on the hourly rental rate that the non-compliant closure occurs. The total assessment to the contractor will be the summation of the separate assessments for each local street traffic lane and local street intersection closure violation.

Permitting the contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the department of any of its rights under the contract.

Keep sidewalks open unless otherwise shown on the plans or as approved by the engineer. Provide adequate temporary sidewalk and bridging over obstructions in the sidewalk area, as directed by the engineer.

Existing trees, street light poles, and other utility poles are to remain in place during construction unless otherwise noted in the plan. Conduct an on-site visit prior to bidding to determine any special measures required for proper clearance between the trees, poles and construction equipment. No additional compensation will be made.

Good Hope Road

Good Hope Road may be closed from Port Washington Road to N. Iroquois Road, as shown in Stage 2A for a one-time period not to exceed 100 consecutive calendar days to allow for the reconstruction of the east leg of the Good Hope Road and Port Washington Road intersection.

Bender Road

Bender Road may be closed from Jean Nicolet Road to N Port Washington Road, as shown in Stages 2A for a one-time period not to exceed 60 consecutive calendar days to allow for the reconstruction of the Bender Road and Port Washington Road intersection.

Jean Nicolet Road

Jean Nicolet Road may be closed from Bender Road to Brentwood Lane as shown in Stages 1A through 2B to allow for the construction of B-40-921 and the UPRR embankment.

Jean Nicolet Road may be closed from the south Nicolet High School driveway to Green Tree Road in Stage 4A for a one-time period not to exceed 75 consecutive calendar days to allow for the construction of Jean Nicolet Road. This closure will only be allowed after Nicolet High School has been dismissed for the 2023-2024 school year (currently scheduled for June 7, 2024).

Jean Nicolet Road may be closed from Bender Road to the south Nicolet High School driveway in Stage 4B for a one-time period not to exceed 75 consecutive calendar days to allow for the construction of Jean Nicolet Road. This closure will only be allowed after Jean Nicolet Road from the south Nicolet High School driveway to Green Tree Road has been reopened to traffic.

Fairfield Court

Fairfield Court may be closed from Elm Tree Road to Jean Nicolet Road as shown in Stages 1A through 2B to allow for the construction of B-40-921 and the UPRR embankment.

Port Washington Road

Port Washington Road may be closed from Karl Campus Drive to Brentwood Lane in Stage 2C for a one-time weekend closure to allow for the construction of the temporary connection under the UPRR Structure B-40-921. This closure will only be allowed after the existing UPRR bridge (B-40-24) has been demolished. Notify WisDOT 14 calendar days prior to the closure.

Range Line Road

Range Line Road may be closed north of Green Bay Road as shown in Stage 1A Traffic Control plans for a one time period not to exceed 21 consecutive calendar days to allow for construction of Range Line Road north of Green Bay Road. Notify Therese Gripentrog at Milwaukee County Parks, (414) 257-6242 or therese.gripentrog@milwaukeecountywi.gov and Silverado North Shore Memory Care Community 14 calendar days prior to the closure.

Range Line Road may be closed south of Green Bay Road as shown in Stage 1A Traffic Control plans for a one time period not to exceed 21 consecutive calendar days to allow for construction of Range Line Road south of Green Bay Road. Notify Therese Gripentrog at Milwaukee County Parks, (414) 257-6242 or therese.gripentrog@milwaukeecountywi.gov and Silverado North Shore Memory Care Community 14 calendar days prior to the closure.

Fairfield Inn & Suites Parking Lot (7035 N Port Washington Road, Glendale, WI)

The parking lot for Fairfield Inn & Suites located between the existing I-43 NB exit ramp to Good Hope Road and the hotel building may be closed for five consecutive months during Stage 2 to allow for the construction of retaining wall R-40-641. Notify the engineer and hotel management 14 calendar days prior to the closure.

K. All Work Restrictions

Excavation material and cleared and grubbed material should be stockpiled on upland areas an adequate distance away from wetlands, storm sewer inlets, floodplains, and the waterways as determined by engineer.

Provide the Wisconsin State Patrol and Milwaukee County Highway Maintenance with a 24-hour emergency contact number for when maintenance is required.

Replace standard spec 108.10.2.2(2) with the following:

Include requests for severe weather delays in the Monthly CPM Progress Schedule Updates. Indicate the number of adverse weather days that occurred during that month. Provide CPM progress schedule documentation as required under Section 108.4.7 of the Baseline CPM Progress Schedule/Monthly CPM Progress Schedule Updates special provision to show that the controlling item of work was delayed. Show that the delay was beyond the control of the contractor. The engineer will assess the contractor's submittal and indicate how many adverse weather days are confirmed.

Replace standard spec 108.10.2.2(3) with the following:

For each calendar month, the engineer will grant a severe weather day for each confirmed adverse weather day that exceeds the number of anticipated adverse weather days 108.10.2.2(1) shows. When the contractor requests severe weather days, the engineer will give the contractor a monthly written statement showing the number of days credited for severe weather. The engineer will only extend time for interim and contract completion dates for severe weather days that have been validated through an accepted CPM Progress Schedule Update.

L. Interim Completions

L.1 Interim Completion of Work: Green Bay Road and Range Line Road intersection, May 30, 2023.

Complete all work required to reopen the Green Bay Road and Range Line Road intersection by May 30, 2023.

If the contractor fails to complete the work necessary to fully reopen the Green Bay Road and Range Line Road intersection to traffic by May 30, 2023, the department will assess the contractor $1,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM on May 31, 2023. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

L.2 Interim Completion of Work: Good Hope Road and Port Washington Road intersection east leg (100 Calendar Days)

Complete all work required to reopen the Good Hope Road and Port Washington Road intersection east leg in Stage 2A within 100 consecutive days.

If the contractor fails to complete the work necessary to fully reopen Good Hope Road and Port Washington Road intersection east leg to traffic within 100 calendar days, the department will assess the contractor $1,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 100 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

L.3 Interim Completion of Work: Bender Road from Jean Nicolet Road and N Port Washington Road (60 Calendar Days)

Complete all Stage 2A work required to reopen Bender Road from Jean Nicolet Road and N Port Washington Road within 60 consecutive calendar days.

If the contractor fails to complete the work necessary to fully reopen Bender Road from Jean Nicolet Road and N Port Washington Road to traffic within 60 calendar days, the department will assess the contractor $2,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 60 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

L.4 Interim Completion of Work: Jean Nicolet Road from Bender Road to Brentwood Lane, September 24, 2023

Complete all work required to reopen Jean Nicolet Road from Bender Road to Brentwood Lane by September 24, 2023.

If the contractor fails to complete the work necessary to fully reopen Jean Nicolet Road from Bender Road to Brentwood Lane to traffic by September 24, 2023, the department will assess the contractor $2,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM September 25, 2023. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

L.5 Interim Completion of Work: Fairfield Court from Elm Tree Road to Jean Nicolet Road, September 24, 2023

Complete all work required to reopen Fairfield Court from Elm Tree Road to Jean Nicolet Road by September 24, 2023.

If the contractor fails to complete the work necessary to fully reopen Fairfield Court from Elm Tree Road to Jean Nicolet Road to traffic by September 24, 2023, the department will assess the contractor $1,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM September 25, 2023. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

L.6 Interim Completion of Work: Union Pacific Railroad Corridor, September 24, 2023

Complete construction operations during Stages 1A – 2B, on the embankment, granular backfill, new tracks, demolition of existing structure (B-40-24) and appurtenant items for the proposed Union Pacific Railroad corridor by September 24, 2023. Install track to the limits shown on the plans. Union Pacific Railroad will install connections between the existing railroad tracks and the new tracks installed by the contractor.

If the contractor fails to complete construction operations during Stages 1A – 2B, on the embankment, granular backfill, new tracks, demolition of existing structure (B-40-24) and appurtenant items for the proposed Union Pacific Railroad corridor by September 24, 2023, the department will assess the contractor $5,000 in interim liquidated damages for each calendar day that the track is not complete after 12:01 AM September 25, 2023. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

L.7 Interim Completion of Work: Port Washington Road from Karl Campus Drive to Brentwood Lane (2 Calendar Days)

Complete all work required to reopen Port Washington Road from Karl Campus Drive to Brentwood Lane in Stage 2C within one full weekend closure. This closure will only be allowed after the existing UPRR bridge (B-40-24) has been demolished.

If the contractor fails to complete the work necessary to fully reopen Port Washington Road from Karl Campus Drive to Brentwood Lane to traffic within 2 calendar days, the department will assess the contractor $2,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 2 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

L.8 Interim Completion of Work: IH 43 NB, November 14, 2023

Complete all work required to open IH 43 NB for winter shutdown by November 14, 2023. Work completed includes finished concrete pavement, permanent concrete barrier, temporary pavement markings, temporary concrete barrier, traffic control devices, and all other incidental items required to open IH 43 NB lanes and IH 43 NB ramps to traffic.

If the contractor fails to complete all work necessary to open IH 43 NB lanes by November 14, 2023, the department will assess the contractor $3,000 in interim liquidated damages per day for each calendar day after 12:01:00 AM on November 15, 2023 that IH 43 NB is not open to traffic. An entire calendar day will be charged for any period of time within a calendar day that the IH 43 NB is not open to traffic beyond 12:01 AM.

L.9 Interim Completion of Work: Jean Nicolet Road from Nicolet High School South Driveway to Green Tree Road (75 calendar days)

Complete all work required to reopen Jean Nicolet Road from Nicolet High School South Driveway to Green Tree Road within 75 calendar days. This closure will only be allowed after Nicolet High School has been dismissed for the 2023-2024 school year.

If the contractor fails to complete the work necessary to fully reopen Jean Nicolet Road from Nicolet High School South Driveway to Green Tree Road to traffic within 75 calendar days, the department will assess the contractor $2,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 75 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

L.10 Interim Completion of Work: Jean Nicolet Road from Bender Road to the Nicolet High School South Driveway, November 14, 2024

Complete all work required to reopen Jean Nicolet Road from Bender Road to the Nicolet High School South Driveway by November 14, 2024. This closure will only be allowed after Nicolet Road from the Nicolet High School South Driveway to Green Tree Road is open to traffic.

If the contractor fails to complete the work necessary to fully reopen Jean Nicolet Road from Bender Road to the Nicolet High School South Driveway by November 14, 2024, the department will assess the contractor $2,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM November 15, 2024. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

L.11 Interim Completion of Work: Completion of All Roads, November 14, 2024.

Complete all work necessary to reopen IH 43 NB, IH 43 SB, Good Hope Road and Ramps, Brown Deer Road and Ramps, Jean Nicolet Road, Port Washington Road, Pheasant Lane, and all adjacent side roads by November 14, 2024. Work completed includes finished concrete pavement, permanent concrete barrier (with the exception of the median barrier listed above in “Stage 5 Construction”), pavement markings, permanent signing, and all other incidental items required to open IH 43 NB, IH 43 SB, Good Hope Road and Ramps, Brown Deer Road and Ramps, Jean Nicolet Road, Port Washington Road, Pheasant Lane, and all adjacent side roads

If the contractor fails to complete the work necessary to fully reopen all roads by November 14, 2024, the department will assess the contractor $15,000 in interim liquidated damages per day for each calendar day after 12:01:00 AM on November 15, 2024 that all roads are not open to traffic. An entire calendar day will be charged for any period of time within a calendar day that the IH 43 NB, IH 43 SB, Good Hope Road and Ramps, Brown Deer Road and Ramps, Jean Nicolet Road, Port Washington Road, Pheasant Lane, and all adjacent side roads are not open to traffic beyond 12:01 AM.

If contract time expires prior to completing all work specified in the contract, additional liquidated damages will be affixed according to standard spec 108.11.

M. Enhanced Final Liquidated Damages

Replace standard spec 108.11 paragraph (3) as follows:

The department will assess $10,000 in daily liquidated damages. These liquidated damages reflect the cost of engineering, supervision, and a portion of road user costs.

N. Winter Maintenance

Milwaukee County will perform snow removal operations for freeway, ramp lanes, shoulders and county highways that are open to traffic. The Cities of Glendale and Milwaukee, and Villages of Bayside, Fox Point, and River Hills will perform snow removal operations for local streets that are open to traffic. Provide for snow removal in those areas closed to traffic as required to facilitate safe construction operations and stage changes and as required to eliminate snow melt run-off from crossing active roadways. Provide Milwaukee County Highway Maintenance and Milwaukee County Sheriff's Department with a 24-hour emergency contact number for when maintenance is required.

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O. Northern Long-eared Bat (*Myotis septentrionalis*)

Northern Long-eared Bats (NLEB) have the potential to inhabit the project limits because they roost in trees. Roosts may not have been observed on this project, but conditions to support the species exist. The species and all active roosts are protected by the Federal Endangered Species Act. If an individual bat or active roost is encountered during construction operations, stop work and notify the engineer and the WisDOT Regional Environmental Coordinator (REC).

According to the final 4(d) rule issued for the NLEB, the department has determined that the proposed activity may affect, but will not result in prohibited take of the NLEB. The activity involves tree removal but will not occur within 0.25 miles of a known hibernacula, nor will the activity remove a known maternity roost tree or any other tree within 150 feet of a known maternity roost tree.

If additional trees need to be removed, no Clearing shall occur without prior approval from the engineer, following coordination with the WisDOT REC. Additional tree removal beyond the area originally specified will require consultation with the United States Fish and Wildlife Service (USFWS) and may require a bat presence/absence survey. Notify the engineer if additional Clearing cannot be avoided to begin coordination with the WisDOT REC. The WisDOT REC will initiate consultation with the USFWS and determine if a survey is necessary.

Submit a schedule and description of Clearing operations with the ECIP 14 days prior to any Clearing operations. The department will determine, based on schedule and scope of work, what additional erosion control measures shall be implemented prior to the start of Clearing operations, and list those additional measures in the ECIP.

Direct temporary lighting away from suitable NLEB habitat during the active season (April 1 – October 31). When installing new or replacing existing permanent lights, use downward facing, full cut-off lens lights.

P. Rusty Patched Bumble Bee (*Bombus affinis*)

The rusty patched bumble bee (Bombus affinis) was listed as endangered by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act, effective March 21, 2017. Construction activities such as grading outside the mowed shoulder area have the potential to impact ground nests and wildflowers that may serve as a food source for the bee. Flowering seeding mixture (Seeding Mixture 90A) is used to mitigate habitat loss, see "Construction Details – Rusty Patched Bumble Bee Habitat Restoration" pages in the plan set for locations. If an active rusty-patched bumblebee nest is encountered in construction areas, contact the WisDOT Regional Environmental Coordinator, who will coordinate with USFWS.

Q. Migratory Birds

Swallow or other migratory bird nests have been observed on or under the existing structure(s). All active nests (when eggs or young are present) of migratory birds are protected under the federal Migratory Bird Treaty Act. The nesting season for swallows and other birds is from April 15 to August 31.

Either prevent active nests from becoming established or prevent birds from nesting by installing and/or maintaining one suitable deterrent device on the following structure(s) prior to nesting activity under the bid item Installing and Maintaining Bird Deterrent System:

- 1078+50 (B-40-577)
- 1078+50 (B-40-578)
- 618BDE+00 (B-40-732)
- 618BDW+00 (B-40-733)

- 27GHE+00 (B-40-734)
- 27GHW+00 (B-40-735)
- 100UPRR+00 (B-40-24)

As a last resort, apply for a depredation permit from the US Fish and Wildlife Service for work that may disturb or destroy active nests. The need for a permit may be avoided by removing the existing bridge structure prior to nest occupation by birds or clearing nests from all structures before the nests become active in early spring.

S. Fish Spawning

There shall be no instream disturbance of waterways, as a result of construction activity under or for this contract, from March 1 to June 15 both dates inclusive, in order to avoid adverse impacts upon the spawning of fish, except as described below.

There shall be no instream disturbance of Indian Creek at Station 1216+00 as a result of construction activity under or for this contract, from June 1 to August 15 both dates inclusive, in order to avoid adverse impacts to threatened and endangered species. However, if adequate protective measures are implemented (coffer dams, turbidity barrier, etc.) prior to March 1st, work may be conducted during this time period.

Any change to this limitation will require submitting a written request by the contractor to the engineer, subsequent review and concurrence by the Department of Natural Resources in the request, and final approval by the engineer. The approval will include all conditions to the request as mutually agreed upon by WisDOT and DNR.”.

T. Railroad Construction Coordination

Notify the railroad 90 days in advance of completing the construction of the offset alignment track. This will allow the railroad to mobilize their crew to complete their work. The railroad will take the track out of service and throw the track to the offset alignment track built by the contractor. It is anticipated the railroad’s work will take two days to complete.

Type 1 cement is specified for construction of the Union Pacific Railroad bridge over I-43. Advance coordination with a cement / concrete supplier may be required to obtain a supply that's sufficient to complete this construction. UPRR has indicated on past WisDOT projects that Type 1L cement is not an acceptable alternative for structural concrete.

6. Lane Rental Fee Assessment.

A General

The contract designates some lane closures to perform the work. The contractor will not incur a Lane Rental Fee Assessment for closing lanes during the allowable lane closure times. The contractor will incur a Lane Rental Fee Assessment for each lane closure outside of the allowable lane closure times. If a lane is obstructed at any time due to contractor operations, it is considered a closure. The purpose of lane rental is to enforce compliance of lane restrictions and discourage unnecessary closures.

The allowable lane closure times are shown in the Prosecution and Progress article.

Submit the dates of the proposed lane, ramp, and roadway restrictions to the engineer as part of the progress schedule.

Coordinate lane, ramp, and roadway closures with any concurrent operations on adjacent roadways within 3 miles of the project. If other projects are in the vicinity of this project, coordinate lane closures to run concurrent with lane closures on adjacent projects when possible. When lane closures on adjacent projects extend into the limits of this project, Lane Rental Fee Assessments will only occur if the closure facilitates work under this contract.

B Lane Rental Fee Assessment

The Lane Rental Fee Assessment incurred for each lane closure, each ramp closure, and each full closure of a roadway, per direction of travel, is as follows:

IH 43 Off Peak Lane Closure Extending into Weekday Peak Hours

- 2 lanes to 1 lane: $6,000 per lane, per direction of travel, per hour broken into 15 minute increments.

IH 43 Off Peak Lane Closure Extending into Weekend Peak Hours

- 2 lanes to 1 lane: $3,000 per lane, per direction of travel, per hour broken into 15 minute increments.

Local Road Off Peak Lane Closure Extending into Peak Hours

- $1,000 per lane, per direction of travel, per hour broken into 15 minute increments.

IH 43 Service Ramp

- $1,000 per lane, per direction of travel, per hour broken into 15 minute increments.

IH 43 Full Freeway Closure

- 4:30 AM to 5:30 AM: $1,500 per lane, per direction of travel, per hour broken into 15 minute increments.
- After 5:30 AM: $6,000 per lane, per direction of travel, per hour broken into 15 minute increments.

Local Road Full Closure

- $2,000 per lane, per direction of travel, per hour broken into 15 minute increments.

The Lane Rental Fee Assessment represents a portion of the cost of the interference and inconvenience to the road users for each closure. All lane, roadway, or ramp closure event increments 15 minutes and less will be assessed as a 15-minute increment.

The engineer, or designated representative, will be the sole authority in determining time period length for the Lane Rental Fee Assessment.

Lane Rental Fee Assessments will not be assessed for closures due to crashes, accidents or emergencies not initiated by the contractor.

The department will assess Lane Rental Fee Assessment by the dollar under the administrative item Failing to Open Road to Traffic. The total dollar amount of Lane Rental Fee Assessment will be computed by multiplying the Lane Rental Assessment Rate by the number of 15-minute increments of each lane closure event as described above.

Lane Rental Fee Assessment will be in effect from the time of the Notice to Proceed until the department issues final acceptance. If interim completion time or contract time expires before the completion of specified work in the contract, additional liquidated damages will be assessed as specified in standard spec 108.11 or as specified within this contract.

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7. Traffic.

General

Keep IH 43, and all service ramps open to through traffic at all times for the duration of this project except as noted below and in the Prosecution and Progress article in these special provisions.

The construction sequence, including the associated traffic control, shall be substantially accomplished as detailed in the Traffic Control Plans, and as described herein.

Unless detailed in the plans, do not begin or continue any work that closes traffic lanes outside the allowed time periods specified in this article.

Do not store equipment, vehicles, or materials on adjacent streets beyond the project limits without specific approval of the engineer.

Maintain emergency vehicle access at all times.

Prior to any traffic control being placed, provide the engineer, Wisconsin State Patrol and Milwaukee County Highway Maintenance with the name and telephone number of a local person responsible for the emergency maintenance of traffic control.

Coordinate all traffic handling with the engineer. Place roadway signing as detailed on the plans and in conformance with the Manual on Uniform Traffic Control Devices (MUTCD), latest edition.

Employ such flag persons, signs, barricades, and drums as may be necessary to safeguard or protect hazards in the work zone, such as exposed manholes or drop-offs for vehicles and direct traffic at locations where construction operations may interfere or restrict the smooth flow of traffic. Make arrangements and be responsible for the prompt replacement of damaged or dislocated traffic control or guidance signs, day or night.

Traffic requirements under this contract shall be coordinated with other adjacent and concurrent Department of Transportation or local municipality projects. The contractor shall be responsible for implementing and coordinating with other contractors all traffic control as shown on the plans. Modifications to the traffic control plan may be required by the engineer to be safe and consistent with adjacent work by others. See Article 10, Other Contracts for adjacent projects.

Residential and Business Property Access

Maintain access to properties along Good Hope Road, Brown Deer Road, Jean Nicolet Road, Port Washington Road, Fairfield Court, and Pheasant Lane, and all adjacent side streets, and any other local road affected by construction for local residents, businesses, and emergency vehicles. Maintain and keep open the access to all driveways and parking lots where alternative access is not available at all times by closing one driveway at a time, building half the driveway at a time and/or plating concrete work. Plating of concrete work, as directed by the engineer, is included in the item that is being plated. In parking lots that are being reconstructed, stage operations so that parking and access is maintained on existing or proposed base aggregate or pavement.

Indian Hill School utilizes two driveways, with a one-way traffic flow pattern. The western driveway off of Brown Deer Road is an entrance only and shall always function as such during construction. The eastern driveway off of Brown Deer Road is an exit only and shall always function as such during construction. Reconstruct the exit driveways one half at a time, to ensure vehicular exiting is available at all times. This is also applicable during summer months when school is not in session.

Schedule of Operations

Traffic shifts shown in a given stage may occur at different times during that stage depending on the controlling elements for a given traffic movement as approved by the engineer. The department anticipates that the schedule of major freeway traffic shifts and roadway openings and closings for each stage shall be as follows, unless approved by the engineer:

Stage 1A Traffic:

Freeway and Ramps

- IH 43 NB to maintain two lanes of traffic on existing lanes.
- Reduce IH 43 SB traffic to one lane during Freeway Closure Hours only. Ingress and Egress into the staging zones along IH 43, shall be completed during Freeway Closure Hours.
- Good Hope Road interchange ramps are open to traffic.
    - Short term closures (2 days maximum) on SB Ramps are anticipated for connection to temporary pavement. Closures cannot overlap with Brown Deer Road ramp closures.
- Brown Deer Road interchange ramps (SB to EB, and WB to SB) are closed to traffic.
- Brown Deer Road interchange ramps (NB to EB, NB to WB, EB to NB, WB to NB, SB to WB, and EB to SB) are open to traffic.
    - Short term closures (2 days maximum) on SB to EB and WB to SB Ramps are anticipated for connection to temporary pavement. Closures cannot overlap with Good Hope Road ramp closures.

Local Roads

- Good Hope Road is open to traffic on existing lanes.
- Brown Deer Road is open to traffic on existing lanes.
- Jean Nicolet Road from Bender Road to Brentwood Lane is closed to traffic. See detour plans.

- Jean Nicolet Road from Brentwood Lane to Green Tree Road is open to traffic.
- Fairfield Court is closed to traffic.
- Port Washington Road (at Good Hope Road) is open to traffic on existing lanes.
- Port Washington Road is open to traffic on existing lanes.
- Green Bay Road is open to traffic on existing lanes.
    - Good Hope Road and Brown Deer Road ramps at IH 43 cannot be closed until the Green Bay Road/Range Line Road signal is operational.
- Range Line Road is closed to traffic north of Green Bay Road, followed by closed to traffic south of Green Bay Road. There closures cannot occur simultaneously.
- The temporary traffic signal at the intersection of IH 43 SB Ramps & STH 100/Brown Deer Road shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
- The temporary traffic signal at the intersection of STH 32 (Brown Deer Road) & CTH W (Port Washington Road) shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
- Install temporary traffic signal at the intersection of IH 43 SB Ramps & Good Hope Road and IH 43 NB Ramps & Good Hope Road. Refer to Temporary Traffic Signal Plans for further instruction.
- Install temporary traffic signal at the intersection of Good Hope Road & Port Washington Road. Refer to Temporary Traffic Signal Plans for further instruction.

Stage 1B Traffic:

Freeway and Ramps

- Shift IH 43 NB traffic to outside shoulder. Maintain two lanes of traffic.
- Shift IH 43 SB traffic to temporary pavement built in Stage 1A. Maintain two lanes of traffic.
- Good Hope Road interchange NB ramps are open to traffic on existing lanes.
- Good Hope Road interchange SB ramps are open to traffic on temporary ramps constructed in Stage 1A.
- Brown Deer Road interchange ramps (SB to EB, WB to SB, NB to WB, and EB to NB) are closed to traffic.
- Brown Deer Road interchange ramps (NB to EB, WB to NB, SB to WB, and EB to SB) are open to traffic.
- Full freeway closures are anticipated for widening of Brown Deer Road bridge (B-40-733).

Local Roads

- Shift Good Hope Road EB and WB to outside lanes. Reduce to one lane in each direction.
- Brown Deer Road is open to traffic on existing lanes.
- Jean Nicolet Road from Bender Road to Brentwood Lane is closed to traffic. See detour plans.
- Jean Nicolet Road from Brentwood Lane to Green Tree Road is open to traffic.
- Fairfield Court is closed to traffic.
- Shift Port Washington Road (at Good Hope Road) NB and SB to outside lanes. Reduce to one lane in each direction.
- Shift Port Washington Road from Bender Road to existing UPRR bridge to temporary pavement built in Stage 1A. Maintain one lane of traffic in each direction.
- Port Washington Road is open to traffic on existing lanes from existing UPRR bridge to Coventry Court.

- Install the temporary traffic signal at the intersection of IH 43 NB Ramps & STH 100/Brown Deer Road. Refer to Temporary Traffic Signal Plans for further instruction.
- The temporary traffic signal at the intersection of IH 43 SB Ramps & Good Hope Road and IH 43 NB Ramps & Good Hope Road shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
- The temporary traffic signal at the intersection of Good Hope Road & Port Washington Road shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
- At the conclusion of Stage 1B, remove the temporary traffic signal at the intersection of IH 43 NB Ramps & Good Hope Road. Refer to Temporary Traffic Signal Plans for further instruction.
- The temporary traffic signal at the intersection of Port Washington Road & W Bender Road/W Devon Street shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
- At the conclusion of Stage 1B, remove the temporary signal at the intersection of IH 43 SB Ramps and STH 100/Brown Deer Road. Refer to Temporary Traffic Signal Plans for further instruction.

Stage 2A Traffic:

Freeway and Ramps

- IH 43 NB to maintain two lanes of traffic on existing lanes from Bender Road to UPRR bridge (B-40-921).
- Shift IH 43 NB to existing SB lanes north of UPRR bridge (B-40-921) using crossover built in Stage 1B. Maintain two lanes of traffic on existing SB lanes and median temporary pavement.
- Shift IH 43 NB to existing NB lanes north of project limits using pavement constructed by others in Project 1229-04-74.
- IH 43 SB to maintain two lanes of traffic on temporary pavement built in Stage 1A.
- Good Hope Road interchange NB ramps are closed to traffic. See detour plans.
- Good Hope Road interchange SB ramps are open to traffic on temporary ramps constructed in Stage 1A.
- Brown Deer Road interchange ramps (SB to EB, WB to SB, NB to WB, and EB to NB) are closed to traffic.
- Brown Deer Road interchange ramps (NB to EB, WB to NB, SB to WB, and EB to SB) are open to traffic.
- Full freeway closures are anticipated for widening of Good Hope Road bridge (B-40-734).

Local Roads

- Shift Good Hope Road EB traffic to existing WB lanes and median temporary pavement built in Stage 1B. Maintain two lanes of traffic in each direction.
- Good Hope Road east of Port Washington Road closed to traffic.
- Shift Brown Deer Road EB traffic to existing WB lanes and median temporary pavement built in Stage 1B. Maintain two lanes of traffic in each direction.
- Jean Nicolet Road from Bender Road to Brentwood Lane is closed to traffic. See detour plans.
- Jean Nicolet Road from Brentwood Lane to Green Tree Road is open to traffic.
- Fairfield Court is closed to traffic.
- Shift Port Washington Road (at Good Hope Road) NB lanes to existing SB lanes and temporary pavement built in Stage 1B. Maintain one lane of traffic in each direction.
- Shift Port Washington Road NB lanes to existing SB lanes and temporary pavement south of Bender Road built in Stage 1B to existing UPRR bridge. Maintain one lane of traffic in each direction.

- Shift Port Washington Road NB and SB lane to proposed NB pavement constructed in Stage 1B.
- The temporary traffic signal at the intersection of IH 43 NB Ramps & STH 100/Brown Deer Road shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.

Stage 2B Traffic:

Freeway and Ramps

- IH 43 NB to maintain two lanes of traffic on existing lanes from Bender Road to UPRR bridge (B-40-921).
- Shift IH 43 NB to existing SB lanes north of UPRR bridge (B-40-921) using crossover built in Stage 1B. Maintain two lanes of traffic on existing SB lanes and median temporary pavement.
- Shift IH 43 NB to existing NB lanes north of project limits using pavement constructed by others in Project 1229-04-74.
- IH 43 SB to maintain two lanes of traffic on temporary pavement built in Stage 1A.
- Good Hope Road interchange NB ramps are closed to traffic. See detour plans.
- Good Hope Road interchange SB ramps are open to traffic on temporary ramps constructed in Stage 1A.
- Brown Deer Road interchange ramps (SB to EB, WB to SB, NB to WB, and EB to NB) are closed to traffic.
- Brown Deer Road interchange ramps (NB to EB, WB to NB, SB to WB, and EB to SB) are open to traffic.
- Full freeway closures are anticipated for construction of UPRR bridge (B-40-921).
- Full freeway closures are anticipated for demolition of existing UPRR bridge (B-40-24).

Local Roads

- Shift Good Hope Road WB traffic to EB lanes constructed in Stage 2A. Maintain two lanes of traffic in each direction.
- Good Hope Road east of Port Washington Road is open to traffic on EB lanes constructed in Stage 2A. Maintain one lane of traffic in each direction.
- Shift Brown Deer Road EB traffic to existing WB lanes and median temporary pavement built in Stage 1B. Maintain two lanes of traffic in each direction.
- Jean Nicolet Road from Bender Road to Brentwood Lane is closed to traffic. See detour plans.
- Jean Nicolet Road from Brentwood Lane to Green Tree Road is open to traffic.
- Fairfield Court is closed to traffic.
- Shift Port Washington Road (at Good Hope Road) SB lanes to NB lanes constructed in Stage 2A and temporary pavement built in Stage 1B. Maintain one lane of traffic in each direction.
- Shift Port Washington Road NB lane to SB lanes constructed in Stage 2A from Bender Road to existing UPRR bridge. Maintain one lane of traffic in each direction.
- Shift Port Washington Road NB and SB lane to proposed pavement constructed in Stage 1B and 2A. Maintain two lanes of traffic in each direction north of Brentwood Lane.

Stage 2C Traffic:

Freeway and Ramps

- IH 43 NB to maintain two lanes of traffic on existing lanes from Bender Road to UPRR bridge (B-40-921).
- Shift IH 43 NB to existing SB lanes north of UPRR bridge (B-40-921) using crossover built in Stage 1B. Maintain two lanes of traffic on existing SB lanes and median temporary pavement.

- Shift IH 43 NB to existing NB lanes north of project limits using pavement constructed by others in Project 1229-04-74.
- IH 43 SB to maintain two lanes of traffic on temporary pavement built in Stage 1A.
- Good Hope Road interchange NB ramps are closed to traffic. See detour plans.
- Good Hope Road interchange SB ramps are open to traffic on temporary ramps constructed in Stage 1A.
- Brown Deer Road interchange ramps (SB to EB, WB to SB, NB to WB, and EB to NB) are closed to traffic.
- Brown Deer Road interchange ramps (NB to EB, WB to NB, SB to WB, and EB to SB) are open to traffic.

Local Roads

- Shift Good Hope Road WB traffic to EB lanes constructed in Stage 2A from west project limits to NB ramp terminals. Maintain two lanes of traffic in each direction.
- Shift Good Hope Road WB and EB traffic to WB lanes constructed in Stage 2B from NB ramp terminals to Port Washington Road. Maintain two lanes of traffic in each direction.
- Good Hope Road east of Port Washington Road is open to traffic on WB lanes constructed in Stage 2A. Maintain one lane of traffic in each direction.
- Shift Brown Deer Road EB traffic to existing WB lanes and median temporary pavement built in Stage 1B. Maintain two lanes of traffic in each direction.
- Jean Nicolet Road is open to traffic on lanes constructed in Stage 1A – 2B from Bender Road to Brentwood Lane and on existing lanes from Brentwood Lane to Green Tree Road.
- Weekend closure of Port Washington Road is anticipated to construct temporary pavement under UPRR bridge.
- Shift Port Washington Road (at Good Hope Road) SB lanes to NB lanes constructed in Stage 2A and temporary pavement built in Stage 1B. Maintain one lane of traffic in each direction.
- Shift Port Washington Road SB lanes to NB lanes constructed in Stage 2B from Bender Road to Brentwood Lane. Maintain one lane of traffic in each direction.
- Shift Port Washington Road SB lanes to SB lanes constructed in Stage 2A from Brentwood Lane to Coventry Court. Maintain two lanes of traffic in each direction.
- Install temporary traffic signal at the intersection of IH 43 NB Ramps & Good Hope Rd. Refer to Temporary Traffic Signal Plans for further instruction.

Stage 2D Traffic:

Freeway and Ramps

- IH 43 NB to maintain two lanes of traffic on existing lanes from Bender Road to UPRR bridge (B-40-921).
- Shift IH 43 NB from existing lanes to NB pavement constructed in Stage 2A-2C. Maintain two lanes of traffic on proposed pavement.
- IH 43 SB to maintain two lanes of traffic on temporary pavement constructed in Stage 1A.
- Good Hope Road interchange NB ramps are open to traffic on new ramps constructed in Stage 2A-2C.
- Good Hope Road interchange SB ramps are open to traffic on temporary ramps constructed in Stage 1A.
- Brown Deer Road interchange ramps (NB to EB, WB to NB, SB to EB, WB to SB, NB to WB, and EB to NB) are closed to traffic.
- Brown Deer Road interchange ramps (SB to WB, and EB to SB) are open to traffic.

Local Roads

- Shift Good Hope EB and WB to outside lanes from west project limits to Port Washington Road. Maintain two lanes in each direction.
- Good Hope Road east of Port Washington Road is open to traffic on respective sides. Maintain one lane in each direction.
- Shift Brown Deer Road EB traffic to existing WB lanes and median temporary pavement built in Stage 1B. Maintain two lanes of traffic in each direction.
- Shift Port Washington Road (at Good Hope Road) NB and SB to outside lanes. Maintain one lane of traffic in each direction.
- Shift Port Washington Road NB lanes to SB lanes constructed in Stage 1B and 2C from Bender Road to Brentwood Lane. Maintain one lane of traffic in each direction.
- Shift Port Washington Road NB lanes to NB lanes constructed in Stage 1B from Brentwood Lane to Coventry Court. Maintain two lanes of traffic in each direction.
- The temporary traffic signal at the intersection of IH 43 NB Ramps & Good Hope Rd shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
- At the conclusion of Stage 2D, the permanent traffic signal at the intersection of IH 43 SB Ramps & Good Hope Rd and IH 43 NB Ramps & Good Hope Rd shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
- At the conclusion of Stage 2D, the permanent traffic signal at the intersection of Good Hope Rd & Port Washington Rd shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
- At the conclusion of Stage 2D, remove the temporary traffic signal at the intersection of IH 43 NB Ramps & STH 100/Brown Deer Road. Refer to Temporary Traffic Signal Plans for further instruction.

2023 Winter Shutdown:

Freeway and Ramps

Local Roads

Stage 3A Traffic:

Freeway and Ramps

- Shift IH 43 NB to existing SB lanes south of Bender Road to Clovernook Lane. Maintain two lanes of traffic.
- Shift IH 43 NB to NB lanes constructed in Stage 2 using crossover from approximately Station 1097+00 to 1113+00 constructed in Stage 2D. Maintain two lanes of traffic.
- IH 43 SB to maintain two lanes of traffic on temporary pavement constructed in Stage 1A.
- Shift IH 43 SB to NB lanes constructed in Stage 2 using crossover from approximately Station 1170+00 to 1184+00 constructed in Stage 2D. Maintain two lanes of traffic.
- Good Hope interchange NB ramps are open to traffic on ramps constructed in Stage 2A-2C.
- Good Hope Road interchange SB ramps are open to traffic on temporary ramps constructed in Stage 1A.
- Brown Deer interchange NB exit ramp and NB entrance ramp are closed to traffic.
- Brown Deer interchange SB ramps are open to traffic on existing ramps.

Local Roads

- Good Hope Road is open to traffic.
- Shift Brown Deer Road WB lanes to EB pavement constructed in Stage 2A-2D. Maintain two lanes in each direction.
- Port Washington Road (at Good Hope Road) is open to traffic.

- Jean Nicolet Road is open to traffic.
- Shift Port Washington Road SB traffic to NB pavement constructed in Stage 2A from Bender Road to B-40-921. Maintain one lane of traffic in each direction.
- Shift Port Washington Road SB traffic to SB pavement constructed in Stage 2A from B-40-921 to Coventry Court. Maintain two lanes of traffic in each direction.
- Install temporary traffic signal at the intersection of IH 43 SB Ramps & STH 100/Brown Deer Rd. Refer to Temporary Traffic Signal Plans for further instruction.

Stage 3B Traffic:

Freeway and Ramps

- Shift IH 43 NB to outside shoulder. Maintain two lanes of traffic.
- IH 43 SB to maintain two lanes of traffic on temporary pavement constructed in Stage 1A. Maintain two lanes of traffic.
- Good Hope interchange NB ramps are open to traffic on ramps constructed in Stage 2A-2C.
- Good Hope Road interchange SB ramps are open to traffic on temporary ramps constructed in Stage 1A.
- Brown Deer interchange NB ramps are closed to traffic.
- Brown Deer interchange SB ramps are closed to traffic.

Local Roads

- At the conclusion of Stage 3B, the permanent traffic signal at the intersection of Port Washington Road & W Bender Road/W Devon Street shall be operational. Refer to Temporary Traffic Signal Plans.

Stage 4A Traffic:

Freeway and Ramps

- IH 43 NB to maintain two lanes of traffic on outside shoulder.
- Shift IH 43 SB to NB lanes south of Bender Road. Maintain two lanes of traffic.
- Good Hope interchange NB ramps are open to traffic.
- Good Hope interchange SB ramps are closed to traffic.
- Brown Deer interchange NB exit ramp and NB entrance ramp are closed to traffic.
- Brown Deer interchange SB ramps are open to traffic on existing ramps.

Local Roads

- Good Hope Road is open to traffic.
- Brown Deer Road is open to traffic. Maintain two lanes of traffic in each direction. WB traffic will utilize the north side of Brown Deer Road. EB traffic will utilize the south side of Brown Deer Road. Temporary traffic signals will be in place and will function in a similar manner to a traditional diamond interchange configuration.
- Port Washington Road (at Good Hope Road) is open to traffic.
- Jean Nicolet Road from Bender Road to Nicolet High School is open to traffic.
- Jean Nicolet Road from Nicolet High School to Green Tree Road is closed to traffic.
- Port Washington Road is open to traffic.
- Install the temporary traffic signal at the intersection of IH 43 NB Ramps & STH 100/Brown Deer Road. Refer to Temporary Traffic Signal Plans for further instruction.

- The temporary traffic signal at the intersection of IH 43 SB Ramps & STH 100/Brown Deer Rd shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
- At the conclusion of Stage 4A, the permanent traffic signal at the intersection of STH 32 (Brown Deer Rd) & CTH W (Port Washington Rd) shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.

Stage 4B Traffic:

- IH 43 NB to maintain two lanes of traffic on outside shoulder.
- Shift IH 43 SB to NB lanes south of Bender Road. Maintain two lanes of traffic.
- Good Hope interchange NB ramps are open to traffic.
- Good Hope interchange SB ramps are closed to traffic.
- Brown Deer interchange NB exit ramp and NB entrance ramp are closed to traffic.
- Brown Deer interchange SB ramps are open to traffic on existing ramps.

Local Roads

- Good Hope Road is open to traffic.
- Brown Deer Road is open to traffic. Maintain two lanes of traffic in each direction. Temporary traffic signals will be in place and will function as a Diverging Diamond configuration.
    - Do not open up to Diverging Diamond configuration until installation of overhead signing on Brown Deer Road is completed.
- Port Washington Road (at Good Hope Road) is open to traffic.
- Jean Nicolet Road is open to traffic from Bender Road to Brentwood Lane. Maintain one lane of traffic in each direction.
- Jean Nicolet Road is closed from Brentwood Lane to Nicolet High School south driveway.
- Jean Nicolet Road is open to traffic from Nicolet High School north driveway to Green Tree Road. Maintain one lane of traffic in each direction.
- Port Washington Road is open to traffic.
- The temporary traffic signal at the intersection of IH 43 NB Ramps & STH 100/Brown Deer Rd shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
- At the conclusion of Stage 4B, the permanent traffic signal at the intersection of IH 43 SB Ramps & STH 100/Brown Deer Rd and IH 43 NB Ramps & STH 100/Brown Deer Rd shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.

2024 Winter Shutdown:

- IH 43 NB is open to traffic in final configuration.
- IH 43 SB is open to traffic in final configuration.
- Good Hope interchange ramps are open to traffic.
- Brown Deer interchange ramps are open to traffic.

Local Roads

- Good Hope Road is open to traffic.
- Brown Deer Road is open to traffic.
- Port Washington Road (at Good Hope Road) is open to traffic.
- Jean Nicolet Road is open to traffic.
- Port Washington Road is open to traffic.

Stage 5 Traffic:

- IH 43 NB to maintain two lanes of traffic on outside shoulder from Silver Spring Road to north of Bender Road.
- IH 43 NB is open to traffic in final configuration from Bender Road to south of the Indian Creek bridge (B-40-1026) and north of B-40-1026 to north project limits.
- IH 43 NB to maintain two lanes of traffic, shifted to shoulders, near B-40-1026 TPO application.
- IH 43 SB to maintain two lanes of traffic on outside shoulder from Silver Spring Road to north of Bender Road.
- IH 43 SB is open to traffic in final configuration from Bender Road to south of the Indian Creek bridge (B-40-1027) and north of B-40-1027 to north project limits.
- IH 43 SB to maintain two lanes of traffic, shifted to shoulders, near B-40-1027 TPO application.
- Good Hope interchange ramps are open to traffic.
- Brown Deer interchange ramps are open to traffic.

Local Roads

- Good Hope Road is open to traffic.
- Brown Deer Road is open to traffic except during TPO application.
- Brown Deer Road is closed to traffic during TPO application.
- Port Washington Road (at Good Hope Road) is open to traffic.
- Jean Nicolet Road is open to traffic.
- Port Washington Road is open to traffic.
- Green Tree Road is closed to traffic.

Wisconsin Lane Closure System Advance Notification

Provide the following advance notification to the engineer for incorporation into the Wisconsin Lane Closure System (LCS).

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

Closure type with height, weight, or width restrictions (available width, all lanes in one direction < 16 feet)	**MINIMUM NOTIFICATION**
Lane and shoulder closures	7 calendar days
Full roadway closures	7 calendar days
Ramp closures	7 calendar days
Detours	7 calendar days
Closure type without height, weight, or width restrictions (available width, all lanes in one direction ≥ 16 feet)	**MINIMUM NOTIFICATION**
Lane and shoulder closures	3 business days
Ramp closures	3 business days
Modifying all closure types	3 business days

Discuss LCS completion dates and provide changes in the schedule to the engineer at weekly project meetings in order to manage closures nearing their completion date.

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Notify the engineer and Construction Program Work Zone and Traffic Engineer if there are any changes in the schedule, early completions, or cancellations of scheduled work.

8. Holiday and Special Event Work Restrictions.

Do not perform work nor haul materials of any kind and entirely clear the traveled way and shoulders of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday periods:

- From noon Friday, May 26, 2023 to 6:00 AM Tuesday, May 30, 2023 for Memorial Day;
- From noon Friday, June 30, 2023 to 6:00 AM Monday, July 10, 2023 for Independence Day;
- From noon Friday, September 1, 2023 to 6:00 AM Tuesday, September 5, 2023 for Labor Day;
- From noon Wednesday, November 22, 2023 to 6:00 AM Monday, November 27, 2023 for Thanksgiving;
- From noon Friday, December 22, 2023 to 6:00 AM Wednesday, December 27, 2023 for Christmas;
- From noon Saturday, December 30, 2023 to 6:00 AM Wednesday, January 3, 2024 for New Year's Day;
- From noon Friday, May 24, 2024 to 6:00 AM Tuesday, May 28, 2024 for Memorial Day;
- From noon Friday, June 28, 2024 to 6:00 AM Monday, July 1, 2024 and from noon Wednesday, July 3, 2024 to 6:00 AM Monday, July 8, 2024 for Independence Day;
- From noon Friday, August 30, 2024 to 6:00 AM Tuesday, September 3, 2024 for Labor Day;
- From noon Wednesday, November 27, 2024 to 6:00 AM Monday, December 2, 2024 for Thanksgiving.
- From noon Friday, May 23, 2025 to 6:00 AM Tuesday, May 27, 2025 for Memorial Day.

Long term ramp and roadway closures shown on the plans may remain in place during holiday work restrictions. New long-term closures of ramps and roadways must be coordinated with the holiday work restrictions.

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Freeway Special Event Restrictions

During Summerfest scheduled for the years 2023 and 2024, keep open the following roadways until one hour after the event closes each night:

- One open lane on northbound and southbound IH 43.

During Green Bay Packer home games, no lane closures will be allowed from four hours prior to the event until four hours after the event in both directions.

Special event work restrictions do not apply to roadways or ramps already closed long term during construction as shown on the plans. New long-term closures of ramps and roadways must be coordinated with the special event work restrictions.

These restrictions also apply to hauling of materials and equipment.

9. Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter TRANS 220.

Additional information regarding recently relocated utility facilities may be available on permits issued to the utility companies. Permits for IH 43 and STH 100 can be viewed at the Region Office during normal working hours. Contact WisDOT SE Freeways Utility Coordinator Mike Birschbach at (414) 750-2532 for further information.

Underground and overhead utility facilities are located within the project limits. Utility adjustments are required for this construction project as noted below. Coordinate construction activities with a call to Diggers Hotline or a direct call to the utilities that have facilities in the area as required per state statute.

Some utility work, as described below, is dependent on work being performed by the contractor at a specific site. Provide the engineer and the affected utility a good-faith notice of when the utility is to start work at the site. Notice shall be given 14 to 16 calendar days in advance of when the site will be available to the utility. Follow up with a confirmation notice to the engineer and the utility not less than 3 working days before the site will be ready for the utility to begin its work.

Contact utility companies listed in the plans prior to preparing bids to obtain current information on existing utility locations and the status of any new utility relocation work.

There may be discontinued utility facilities within the project limits. If a conflict with a discontinued utility facility is encountered, contact the appropriate utility owner/representative to coordinate construction activities and proper removal and disposal of said facility as necessary.

Utility working days shown herein are as defined in Wisconsin Administrative Code Chapter Trans 220.

All utility timelines are based on an anticipated start of construction of the project on February 1, 2023.

Known utilities in the project area are as follows:

1229-04-71: Port Washington Road (Bender to Coventry)

AT&T Local Network has existing underground communications facilities in the following locations:

- An existing underground communication line in a We Energies underground electric duct package beginning beyond the project limits running easterly to a We Energies manhole located at Station 136PS+11, 2'LT where it turns and runs northerly and continuing to beyond the project limits. This line will remain in place without adjustment.

AT&T Wisconsin has existing overhead and underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits and running easterly along the northerly right-of-way of Bender Road and crossing Jean Nicolet Road southeasterly and continuing along the north curb line of Bender Road and crossing Port Washington Road to the northeast corner where it jogs and then continues easterly under the northerly sidewalk to beyond the project limits.
    - Prior to construction AT&T Wisconsin will relocate their facilities constructing a new underground conduit beginning beyond the westerly project limits and running easterly down the centerline of Bender Road crossing Jean Nicolet Road and Port Washington Road to beyond the project limits. The existing line will be discontinued in place.
- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits running easterly crossing IH 43 to a pole at Station 117PN+33, 22'LT and then turning northerly running along the east side of Port Washington Road to a pole at Station 128PN+93, 43'LT and then turning easterly and continuing to beyond the project limits.
    - Prior to construction AT&T Wisconsin will construct new overhead wires on We Energies' poles beginning beyond the westerly project limits running easterly crossing IH 43 to a pole at Station 117PN+08, 50'RT and then turning northerly running along the proposed east sidewalk of Port Washington Road to a pole at Station 128PN+75, 45'RT and then turning northeasterly to a new pole at Station 128PN+94, 85'RT. The existing overhead communication lines will be removed off of We Energies' poles.
- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits running northeasterly crossing IH 43 to a pole at Station 125PN+95, 30'LT.
    - Prior to construction AT&T Wisconsin will construct new overhead wires on We Energies' poles beginning beyond the westerly project limits running easterly crossing IH 43 to a pole at Station 124PN+84, 45'RT. The existing overhead communication lines will be removed off of We Energies' poles.

Fox Point, Village of – Water has existing underground water facilities in the following locations:

- An existing underground 24" water main beginning beyond the westerly project limits running easterly crossing Port Washington Road to a tee located at Station 108PN+20, 18'RT. This line will remain in place without adjustment.
- An existing underground 16" water main beginning at a tee at Station 107PN+91, 13'RT and running northeasterly to beyond the project limits. This line will remain in place without adjustment.

- An existing underground 20” water main beginning at a tee at Station 107PN+95, 21’RT and running northerly to a bend at Station 110PN+05, 25’RT where it turns and runs northeasterly to beyond the project limits.
    - Prior to construction Fox Point Water will construct a new water main connecting into the existing water main at Station 109PN+10, 21’RT and reconnecting at Station 110PN+18, 51’RT.

During construction and in conjunction with grading and paving operations, adjust and reconstruct water manholes as shown in the plans and bid items.

Glendale, City of – Lighting has existing streetlight poles and associated underground electric lighting facilities within the project limits. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of lighting facilities as shown in the plans and bid items.

Glendale, City of – Sewer has existing underground sanitary facilities within the project limits. Adjust and reconstruct manholes as shown in the plans and bid items.

Glendale, City of – Signals has existing traffic signal facilities at the intersection of Port Washington Road and Bender Road. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of traffic signal facilities as shown in the plans and bid items.

Proposed traffic signal facilities will be added at the intersection of Port Washington Road and Clovernook Lane as part of this project. Construct the new traffic signal facilities as shown in the plans and bid items.

Glendale, City of – Water has existing underground water facilities in the following locations:

- An existing underground water main beginning beyond the southerly project limits running northerly in the northbound lanes of Port Washington Road and crossing Bender Road and continuing northerly running along the easterly right-of-way and sidewalk of Port Washington Road crossing the UPRR, Brentwood Lane, Clovernook Lane, Apple Tree Road, and Daphne Road where it jogs slightly and continues running northerly in the northbound lanes of Port Washington Road to beyond the project limits.
    - Prior to construction Glendale Water will construct a new underground water main connecting into the existing main at Station 99PS+53, 19’LT and running northerly in the proposed southbound lanes of Port Washington Road crossing the UPRR to Station 111PS+79, 24’LT where it turns northeasterly to Station 112PN+17, 14’RT. From there it turns northerly running in the proposed northbound lanes of Port Washington Road to Station 136PN+71, 27’RT and jogging northwesterly and connecting into the existing main at Station 136PN+86, 13’RT. The existing water main between 99PN+40, 17’RT and Station 136PN+86, 13’RT will be discontinued in place.
- An existing underground water main beginning beyond the easterly project limits running westerly in the side roads of Brentwood Lane, Clovernook Lane, Apple Tree Road, Daphne Road, and Coventry Court and teeing into the existing water main in Port Washington Road.
    - Prior to construction Glendale Water will construct new underground water mains in the side roads of Brentwood Lane, Clovernook Lane, Apple Tree Road, Daphne Road and Coventry Court and teeing into the proposed water main in Port Washington Road. The existing water mains will be discontinued in place.
- During construction Glendale Water will need to relocate a hydrant on Port Washington Road moving it from Station 103PN+54, 19’RT to Station 103PN+54, 40’RT. Allow two working days for Glendale Water to perform the relocation of this hydrant.

During construction and in conjunction with grading and paving operations, adjust water valves as shown in the plans and bid items.

Midwest Fiber Networks has existing underground communications facilities in the following locations:

- An existing underground duct beginning at a handhole at Station 99PN+62, 57'LT where it runs southeasterly to Station 99PN+49, 52'LT and then turns easterly crossing Port Washington Road to 99PN+49, 43'RT where it turns northeasterly to a handhole at Station 99PN+55, 56'RT. This duct is empty and will remain in place without adjustment.

Milwaukee Metropolitan Sewerage District has existing underground sanitary sewer facilities within the project limits. Milwaukee Metropolitan Sewerage District will adjust a manhole on Bender Road during construction at Station 15+65, 14'LT. Allow two working days for Milwaukee Metropolitan Sewerage District to perform their adjustments.

North Shore Water Commission has an existing underground 8" sludge force main within the project limits beginning on their property at Station 10JN+62, 46'LT running easterly and crossing Jean Nicolet Road to Station 10JN+65, 23' RT where it turns southeasterly into Bender Road to Station 14+51, 16'LT. From there it turns easterly where it ties into the MMSD sanitary sewer at Station 15+65, 9'LT. This line will remain in place without adjustment.

Spectrum has existing overhead and underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits of Bender Road at a We Energies' pole at Station 12+92, 30'LT and running easterly crossing Jean Nicolet Road and continuing along the north sidewalk of Bender Road to Station 15+85, 33'LT where it turns northeasterly to an existing pedestal at Station 15+86, 37'LT. From there it turns easterly crossing Port Washington Road to the northeast corner where it jogs and then continues easterly under the northerly sidewalk to beyond the project limits.
    - Prior to construction Spectrum will relocate their facilities constructing a new underground conduit beginning at a We Energies' pole at 13+14, 29'LT and running easterly down the north sidewalk of Bender Road crossing Port Washington Road to an existing We Energies' pole located at Station 17+49, 26'LT. The existing line will be discontinued in place.
- An existing underground communication line beginning at Station 100PN+38, 25'RT and running northerly along the existing east sidewalk of Port Washington Road crossing the UPRR and connecting to an existing We Energies pole at Station 113PN+26, 3'RT.
    - Prior to construction Spectrum will relocate their facilities constructing a new underground communications line beginning at Station 100PN+33, 36'RT and running northerly along the proposed easterly right-of-way of Port Washington Road to Station 108PN+71, 36'RT where it turns northeasterly to a new handhole at Station 12+45, 23'RT of Karl Campus Drive. From there it turns northwesterly crossing Karl Campus Drive and the UPRR to a new We Energies pole located at Station 113PN+30, 110'RT. The existing line will be discontinued in place.
- An existing overhead communication line on We Energies' poles beginning at a pole at Station 113PN+26, 3'RT and running northerly along the east side of Port Washington Road to a pole at Station 130PS+02, 25'LT.
    - Prior to construction Spectrum will construct new overhead wires on We Energies' poles beginning at Station 113PN+30, 110'RT and running westerly to a pole at Station 113PN+30, 45'RT and then turning northerly running along the proposed east sidewalk of Port Washington Road to a pole at 128PN+90, 45'RT. The existing overhead communication lines will be removed off of We Energies' poles.
- An existing underground communication line beginning at a We Energies pole located at Station 130PS+02, 25'LT and running northerly along the existing sidewalk of Port Washington Road crossing Daphne Road and Coventry Court and continuing to beyond the project limits.
    - Prior to construction Spectrum will relocate their facilities constructing a new underground communications line beginning at a new We Energies pole located Station 128PN+90, 45'RT and running northerly along the proposed easterly right-of-way of Port Washington Road crossing Daphne Road and Coventry Court to beyond the project limits. The existing line will be discontinued in place.

Sprint Communications does not have existing facilities within the project limits. However, they do have land interests which will be cleared within the railroad corridor.

Verizon Business has existing underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits of Bender Road beginning at a We Energies' pole at Station 13+14, 29'LT and running easterly crossing Jean Nicolet Road and continuing along the north sidewalk of Bender Road to Station 15+73, 25'LT where it turns northeasterly to an existing handhole at Station 15+91, 41'LT. From there it turns easterly crossing Port Washington Road to the northeast corner where it jogs and then continues easterly under the northerly sidewalk to beyond the project limits.
    - Prior to construction Verizon will relocate portions of their facilities constructing a new handhole at Station 14+24, 28'LT and a new underground communication line running easterly and parallel to their existing line and splicing into their existing line at Station 15+92, 37'LT. The existing handhole at Station 15+91, 41'LT will be removed. The existing line between Station 14+24, 28'LT and Station 15+92, 37'LT will be discontinued in place. The remainder of the line will remain in place without adjustment.

We Energies – Electric has existing overhead and underground electric facilities in the following locations:

- An existing underground electric duct package beginning beyond the westerly project limits of Bender Road at an existing pole at Station 13+14, 29'LT and running easterly to manholes located at Station 13+32, 26'LT and at Station 13+81, 27'LT and crossing Jean Nicolet Road and continuing along the north sidewalk of Bender Road crossing Port Washington Road to a manhole at Station 17+37, 15'LT and then continues easterly to beyond the project limits. This line will remain in place without adjustment.
    - During construction and in conjunction with grading and paving operations We Energies will adjust the chimney of the existing manholes located at Station 13+81, 27'LT. Allow two working days for We Energies to perform their adjustments.
- An existing overhead electric line beginning at a pole at Station 113PN+26, 3'RT running northerly along the existing easterly right-of-way of Port Washington Road to a pole at Station 130PS+77, 26'LT.
    - Prior to construction We Energies will construct new overhead wires beginning at a pole at Station 113PN+29, 45'RT running northerly along the proposed east sidewalk of Port Washington Road to a pole at Station 128PN+75, 45'RT and then turning northeasterly to a new pole at Station 128PN+94, 85'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning beyond the westerly project limits running easterly crossing IH 43 to a pole at Station 113PN+26, 3'RT and continuing to beyond the project limits.
    - Prior to construction We Energies will construct new overhead wires beginning beyond the westerly project limits running easterly crossing IH 43 to a pole at Station 113PN+29, 45'RT and continuing to a new pole at Station 113PN+30, 106'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning beyond the westerly project limits running easterly crossing IH 43 to a pole at Station 117PN+33, 22'LT and continuing to beyond the project limits.
    - Prior to construction We Energies will construct new overhead wires beginning beyond the westerly project limits running easterly crossing IH 43 to a pole at Station 117PN+08, 50'RT where it jogs northeasterly to a new pole at Station 117PN+30, 106'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning at a pole at Station 124PS+02, 12'LT and running easterly to beyond the project limits.
    - Prior to construction the overhead electric lines will be removed off of the existing poles and the poles will be removed.

- An existing overhead electric line beginning beyond the westerly project limits running northeasterly crossing IH 43 to a pole at Station 125PN+95, 30'LT.
    - Prior to construction We Energies will construct new overhead wires beginning beyond the westerly project limits running easterly crossing IH 43 to a pole at Station 124PN+84, 45'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing underground electric line beginning at a pole at Station 130PS+77, 26'LT running northerly along the existing easterly sidewalk of Port Washington Road crossing Daphne Road and Coventry Court to beyond the project limits.
    - Prior to construction We Energies will construct a new underground electric line beginning at new pole at Station 128PN+75, 45'RT running northerly along the new easterly right-of-way of Port Washington Road crossing Daphne Road into a new We Energies' easement behind the right-of-way and crossing Coventry Court to Station 137PN+41, 72'RT where it ties into an existing underground electric line. The existing underground line will be discontinued in place.
- An existing underground electric line beginning beyond the easterly project limits running westerly along the northerly right-of-way of Daphne Road to Station 131PN+78, 7'LT where it turns and runs northerly behind the easterly sidewalk of Port Washington Road to Station 136PN+14, 66'RT where it turns westerly to an existing manhole at Station 136PS+11, 2'LT.
    - Prior to construction We Energies will construct a new underground electric line beginning at Station 137PN+67, 58'RT running northerly in a new We Energies' easement behind the right-of-way to Station 136PN+14, 66'RT where it ties into an existing underground electric line. The existing underground line between Station 137PN+67, 58'RT and Station 136PN+14, 66'RT will be discontinued in place.
- An existing underground electric line beginning beyond the easterly project limits running westerly along the northerly right-of-way of Daphne Road to Station 131PN+86, 6'RT where it turns and runs northerly behind the easterly sidewalk of Port Washington Road to beyond the project limits.
    - Prior to construction We Energies will construct a new underground electric line beginning at Station 131PN+75, 80'RT running northerly in a new We Energies' easement behind the right-of-way to Station 137PN+, 83'RT where it ties into an existing underground electric line. The existing underground line between Station 131PN+75, 80'RT and Station 137PN+, 83'RT will be discontinued in place.
- An existing underground electric line beginning at Station 135PN+04, 36'RT running westerly to Station 135PS+21, 53'LT where it turns southerly to a meter at Station 134PS+09, 64'LT. This existing line will be discontinued in place.
- An existing underground electric line beginning at an existing manhole at Station 136PS+11, 2'LT running westerly serving a transformer located at Station 135PS+75, 83'LT. This existing line will remain in place without adjustment.
- An existing underground electric duct package beginning beyond the project limits running easterly to a manhole located at Station 136PS+11, 2'LT where it turns and runs northerly and continuing to beyond the project limits. This line will remain in place without adjustment.
    - During construction and in conjunction with grading and paving operations We Energies will adjust the chimney of the existing manhole located at Station 136PS+11, 2'LT. Allow two working days for We Energies to perform their adjustments.

We Energies – Gas has existing underground gas facilities in the following locations:

- An existing high pressure gas main beginning beyond the southerly project limits running northerly in the northbound lanes of Port Washington Road and crossing Bender Road and continuing northerly running along the easterly curb and sidewalk of Port Washington Road and crossing the UPRR, Brentwood Lane, Clovernook Lane, Apple Tree Road, and Daphne Road where it jogs slightly and continues running northerly in the northbound median curb line of Port Washington Road and beyond the project limits.

- Prior to construction We Energies - Gas will construct a new underground high pressure gas main connecting into the existing main at Station 100PN+14, 3'LT and jogging westerly to Station 100PN+14, 18'LT and turning and running northerly in the proposed southbound lanes of Port Washington Road crossing the UPRR to Station 111PN+51, 7'LT where it turns northeasterly to Station 112PN+03, 22'RT. From there it turns northerly running in the proposed northbound lanes of Port Washington Road to Station 136PN+94, 51'RT and jogging westerly and connecting into the existing main at Station 136PN+94, 7'RT. The existing gas main will be discontinued in place.

- An existing underground distribution gas main beginning at Station 112PN+88, 0'LT running northerly and then turning easterly at Station 114PN+79, 7'LT and Station 115PN+32, 9'LT down Brentwood Lane to beyond the project limits.
    - Prior to construction We Energies - Gas will discontinue the existing gas main in place.
- An existing underground distribution gas main beginning beyond the westerly project limits running easterly crossing IH 43 to Station 119PS+63, 26'LT and then turning northerly running along the east sidewalk of Port Washington Road where it jogs slightly and continues running northerly in the northbound median curb line of Port Washington Road to Station 133PS+32, 14'LT. From there it turns westerly to Station 133PS+44, 46'LT and then turns northerly in the existing southbound median lane of Port Washington Road and continuing to beyond the project limits.
    - Prior to construction We Energies - Gas will construct a new underground gas main beginning beyond the westerly project limits running easterly crossing IH 43 to Station 10DE+82, 14'LT in Daphne Lane where it jogs southerly connecting into the existing main at Station 10DE+82, 24'RT.
    - Prior to construction We Energies - Gas will construct a new underground gas main beginning at a tee at Station 10DE+40, 14'LT in Daphne Road running northerly to Station 134PN+09, 50'RT where it turns westerly connecting into the existing main at Station 134PS+32, 22'LT.
    - The existing gas main from Station 119PS+63, 26'LT to Station 134PS+32, 22'LT in Port Washington Road and the sideroads of Clovernook Lane, Apple Tree Road, and Daphne Road will be discontinued in place.
    - During construction and in conjunction with grading and paving operations, We Energies - Gas will adjust existing valves to final pavement grade. Allow two working days for We Energies - Gas to perform their adjustments.

We Energies – Gas has existing discontinued underground gas facilities in the following locations:

- An existing discontinued underground gas main beginning at Station 112PS+91, 11'LT running northerly along the east sidewalk of Port Washington Road where it jogs slightly and continues running northerly in the northbound median curb line of Port Washington Road to Station 132PS+82, 29'LT.
- An existing discontinued underground gas main beginning beyond the westerly project limits running easterly crossing IH 43 to the south side of Brentwood Lane and continuing to beyond the project limits.
- An existing discontinued underground gas main beginning at Station 120PS+25, 34'LT running easterly down Clovernook Lane to beyond the project limits.
- An existing discontinued underground gas main beginning beyond the westerly project limits running easterly crossing IH 43 to Station 120PS+83, 34'LT.
- An existing discontinued underground gas main beginning beyond the westerly project limits running easterly crossing IH 43 to Station 126PS+25, 22'LT.
- An existing discontinued underground gas main beginning at Station 126PS+55, 21'LT running easterly down Apple Tree Road to beyond the project limits.
- An existing discontinued underground gas main beginning at Station 131PS+29, 28'LT running easterly down Daphne Road to beyond the project limits.

1229-04-72: UPRR Bridge

AT&T Local Network has existing underground communications facilities within We Energies – Electric duct running in Jean Nicolet Road passing under the UPRR bridge. See the section for **South End Mainline (Jean Nicolet Road)** below for the disposition of AT&T Local Network within We Energies – Electric facilities in this area.

AT&T Wisconsin has existing underground communications facilities running along the southerly right-of-way of Fairfield Court. See the section for **Fairfield Court** below for the disposition of AT&T Wisconsin facilities in this area.

CenturyLink Communications has existing underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits of the UPRR running easterly along the northerly right-of-way of the UPRR to Station 132+51, 24'LT where it turns northerly down Jean Nicolet Road and continues to beyond the UPRR Bridge project limits.
    - Prior to construction CenturyLink will relocate their facilities by splicing into their existing line at Station 130+50, 21'LT and running easterly to a new handhole at Station 131+88, 35'LT where it turns northerly down Jean Nicolet Road and continues to beyond the UPRR Bridge project limits. The remainder of the existing line west of Station 131+88, 35'LT will remain in place without adjustment. The portion of the existing line east of Station 131+88, 35'LT will be discontinued in place.

Glendale, City of – Water has existing underground water facilities running beneath Port Washington Road passing under the UPRR bridge. See the section for **Port Washington Road (Bender to Coventry)** above for the disposition of City of Glendale – Water facilities in this area.

Spectrum has existing underground communication facilities running beneath Port Washington Road passing under the UPRR bridge. See the section for **Port Washington Road (Bender to Coventry)** for the disposition of Spectrum facilities in this area.

Sprint Communications does not have existing facilities within the project limits. However, they do have land interests which will be cleared within the railroad corridor.

We Energies – Electric has existing overhead and underground electric facilities in the following locations:

- An existing underground electric line running along the southerly right-of-way of Fairfield Court. See the section for **Fairfield Court** below for the disposition of We Energies - Electric facilities in this area.
- An existing overhead electric line running along the southerly right-of-way of Fairfield Court. See the section for **Fairfield Court** below for the disposition of We Energies - Electric facilities in this area.
- An existing overhead electric line beginning in Port Washington Road running easterly to an existing pole located at Station 137+89, 46'LT where it turns northeasterly running along the northerly right-of-way of the UPRR where it continues to beyond the project limits.
    - Prior to construction We Energies will relocate the southerly guy anchor for the pole located at Station 137+89, 46'LT. The poles and overhead lines will remain in place without adjustment.

We Energies – Gas has existing underground gas facilities running beneath Port Washington Road passing under the UPRR bridge. See the section for **Port Washington Road (Bender to Coventry)** above for the disposition of We Energies - Gas facilities in this area. They also have existing underground gas facilities running beneath Jean Nicolet Road passing under the UPRR bridge. See the section for **South End Mainline (Jean Nicolet Road)** below for the disposition of We Energies – Gas facilities in this area.

1229-04-73: Fairfield Court

AT&T Wisconsin has existing underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits running easterly along the southerly right-of-way of Fairfield Court to Station 15FA+79, 49'RT where it turns northerly crossing Fairfield Court and jogging easterly and then turning northerly down Jean Nicolet Road.
    - Prior to construction AT&T Wisconsin will discontinue this line in place.

Glendale, City of – Sewer has existing underground sanitary facilities within the project limits. Adjust and reconstruct manholes as shown in the plans and bid items.

Glendale, City of – Water has existing underground water facilities in the following locations:

- An existing underground water main beginning beyond the westerly project limits running easterly in the westbound lane of Fairfield Court to Station 16FA+22, 7'LT where it turns northerly down Jean Nicolet Road.
    - Prior to construction Glendale Water will construct a new underground water main connecting into the existing main at Station 10FA+80, 6'LT and running easterly in the existing westbound lane of Fairfield Court to Station 16FA+24, 11'RT where it turns northerly down Jean Nicolet Road. The existing water main will be discontinued in place.

During construction and in conjunction with grading and paving operations, adjust water valves as shown in the plans and bid items.

We Energies – Electric has existing overhead and underground electric facilities in the following locations:

- An existing underground electric line beginning at a pole at 11FA+80, 49'RT running northerly across Fairfield Court and then turning easterly running along the north ditch line of Fairfield Court to Station 15FA+75, 1'LT where it turns northerly down an easement to an existing pole located at Station 23JN+39, 57'LT.
    - Prior to construction We Energies will construct a new underground electric line beginning at a new pole at Station 12FA+85, 19'RT running easterly behind the south proposed curb line of Fairfield Court to Station 15FA+87, 24'RT where turns northerly crossing Fairfield Court and runs along the westerly right-of-way of Jean Nicolet Road. The existing underground line will be discontinued in place.
- An existing underground electric line beginning at a pole at 13FA+42, 45'RT running northerly 4' and then turning easterly running along the southerly right-of-way of Fairfield Court to Station 15FA+81, 45'RT where it turns southerly down Jean Nicolet Road.
    - Prior to construction We Energies will construct a new underground electric line beginning at a new pole at Station 12FA+16, 19'RT running easterly behind the south proposed curb line of Fairfield Court to Station 16FA+13, 25'RT where it turns southerly running down Jean Nicolet Road. The existing underground line will be discontinued in place.
- An existing underground electric line beginning at a pole at 14FA+01, 48'RT running northerly 19' and then turning easterly running along the eastbound lane of Fairfield Court to an existing manhole at Station 16FA+36, 28'RT.
    - We Energies will construct a new underground electric line beginning at a new pole at Station 13FA+20, 19'RT running easterly behind the south proposed curb line of Fairfield Court to an existing manhole at Station 16FA+36, 28'RT. The existing underground line will be discontinued in place.

- An existing overhead electric line beginning beyond the westerly project limits running easterly along the southerly right-of-way of Fairfield Court to a pole located at Station 15FA+19, 47'RT.
    - Prior to construction We Energies will construct new poles and overhead wires beginning at an existing pole located at Station 10FA+24, 69'RT running easterly behind the south proposed curb line of Fairfield Court to a new pole located at Station 14FA+24, 19'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed east of Station 10FA+24, 69'RT.

We Energies – Gas has existing underground gas facilities in the following locations:

- An existing underground gas main beginning at Station 14FA+40, 11'LT running easterly along the north side of Fairfield Court connecting into an existing gas main in Jean Nicolet Road at Station 16FA+23, 7'LT.
    - Prior to construction We Energies – Gas will connect this main into the new gas main in Jean Nicolet Road at Station 16FA+14, 9'LT. The existing line west of this point will remain in place without adjustment.

1229-04-73: South End Mainline (Jean Nicolet Road: Bender to Green Tree)

AT&T Local Network has existing underground communications facilities in the following locations:

- An existing underground communication line within a We Energies duct package following the same path as We Energies - Electric as described in the We Energies – Electric section below.
    - Prior to construction AT&T Local Network will relocate their facilities into new We Energies - Electric facilities following the same path as We Energies - Electric as described in the We Energies – Electric section below. The existing line will be discontinued in place.

AT&T Wisconsin has existing overhead and underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits and running easterly along the northerly right-of-way of Bender Road and crossing Jean Nicolet Road southeasterly and continuing along the north curb line of Bender Road and crossing Port Washington Road to the northeast corner where it jogs and then continues easterly under the northerly sidewalk to beyond the project limits.
    - Prior to construction AT&T Wisconsin will relocate their facilities constructing a new underground conduit beginning beyond the westerly project limits and running easterly down the centerline of Bender Road crossing Jean Nicolet Road and Port Washington Road to beyond the project limits. The existing line will be discontinued in place.
- An existing underground communication line beginning beyond the westerly project limits of Fairfield Court running easterly to Station 21JN+27, 15'LT and turning and running northerly behind the westerly sidewalk of Jean Nicolet Road to an existing handhole at Station 23JN+30, 19'LT and continuing to an existing pedestal at Station 27JN+21, 32'LT and continuing to an existing We Energies pole at Station 34JN+62, 39'LT.
    - Prior to construction AT&T Wisconsin will discontinue in place the existing line from Station 21JN+27, 15'LT to the existing handhole at Station 23JN+30, 19'LT. The existing line from the handhole north to the We Energies pole at Station 34JN+62, 39'LT will remain in place without adjustment.
    - During construction and in conjunction with grading and paving operations, AT&T Wisconsin will adjust the handhole located at Station 23JN+30, 19'LT and pedestal located at Station 27JN+21, 32'LT. Allow two working days for AT&T Wisconsin to perform their adjustments.
- An existing underground communication line beginning at an existing handhole at Station 23JN+30, 19'LT and running westerly to a handhole located at Station 23JN+30, 51'LT beyond the project limits. The existing line will remain in place without adjustment.

- An existing underground communication line beginning beyond the westerly project limits at a We Energies pole at Station 23JN+39, 57'LT running easterly and northeasterly joining into the existing underground communication line running northerly along the existing westerly sidewalk in Jean Nicolet Road. The existing line will remain in place without adjustment.
- An existing underground communication line beginning at an existing pedestal at Station 27JN+21, 32'LT and running westerly to a pedestal located at Station 27JN+14, 69'LT beyond the project limits. The existing line will remain in place without adjustment.
- An existing underground communication line beginning beyond the westerly project limits running easterly along the south side of Acacia Road to an existing manhole located at Station 32JN+52, 52'LT and turning and running northerly and easterly joining into the existing underground communication line running northerly along the existing westerly sidewalk in Jean Nicolet Road. The existing line and manhole will remain in place without adjustment.

CenturyLink Communications has existing underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits of the UPRR running easterly along the northerly right-of-way of the UPRR to Station 20JN+83, 30'RT where it turns northerly down Jean Nicolet Road following the existing fence line between Jean Nicolet Road and IH 43 to Station 55JN+09, 25'RT. From there it turns northwesterly crossing to the west side of Jean Nicolet Road to Station 58JN+16, 26'LT and turns northerly following the westerly right-of-way of Jean Nicolet Road crossing Green Tree Road at Station 37GT+29 and continuing northerly towards the Good Hope Road interchange.
    - Prior to construction CenturyLink will relocate their facilities by splicing into their existing line at Station 130+50, 21'LT in the UPRR corridor and running easterly to a new handhole at Station 131+88, 35'LT where it turns northerly running along the westerly right-of-way of Jean Nicolet Road crossing Brentwood Lane, Acacia Road, Apple Tree Road, Daphne Road, and Green Tree Road to a new handhole at Station 37GT+31, 40'RT. From there it turns westerly running along the southerly right-of-way of Green Tree Road to a new handhole at Station 34GT+88, 33'RT where it turns northerly crossing Green Tree Road and continues northerly towards the Good Hope Road interchange. The existing line in Jean Nicolet Road will be discontinued in place.

Fox Point, Village of – Water has existing underground water facilities within the project limits running northerly along the westerly right-of-way of Jean Nicolet Road and turning easterly at Station 18JN+18, 23'LT and crossing Jean Nicolet Road at Station 18JN+18. This underground line will remain in place without adjustment. Adjust and reconstruct water valves as shown in the plans and bid items.

Glendale, City of – Sewer has existing underground sanitary facilities within the project limits. Adjust and reconstruct manholes as shown in the plans and bid items.

Glendale, City of – Water has existing underground water facilities in the following locations:

- An existing underground water main beginning beyond the westerly project limits of Fairfield Court running easterly to Station 21JN+32, 13'LT and turning and running northerly behind the westerly curb line of Jean Nicolet Road and crossing Brentwood Lane, Acacia Road, and Apple Tree Road to Station 41JN+21, 45'LT where it turns northwesterly to Station 41JN+46, 71'LT and then westerly down the south side of Daphne Road to beyond the project limits.
    - Prior to construction Glendale Water will construct a new underground water main beginning beyond the westerly project limits of Fairfield Court running easterly to Station 21JN+17, 2'LT and turning and running northerly in the existing southbound lane of Jean Nicolet Road and crossing Brentwood Lane, Acacia Road, and Apple Tree Road to Station 41JN+34, 30'LT where it turns northwesterly to Station 41JN+46, 43'LT and then westerly connecting into the existing main in Daphne Road at Station 41JN+46, 71'LT. The existing water main will be discontinued in place.

- An existing underground water main beginning beyond the westerly project limits running easterly in the side roads of Brentwood Lane, Acacia Road, Apple Tree Road, and Daphne Road and teeing into the existing water main in Jean Nicolet Road.
    - Prior to construction Glendale Water will construct new underground water mains in the side roads of Brentwood Lane, Acacia Road, Apple Tree Road, and Daphne Road and teeing into the proposed water main in Jean Nicolet Road. The existing water mains will be discontinued in place.

During construction and in conjunction with grading and paving operations, adjust water valves as shown in the plans and bid items.

Midwest Fiber Networks has existing underground communications facilities in the following locations:

- An existing underground communication line within WisDOT communications facilities beginning beyond the southerly project limits running northerly along the west side of IH 43 to a handhole at Station 1077+79, 110'LT and continuing northerly to a handhole at Station 1111+90, 82'LT where it turns easterly crossing IH 43 to a handhole at Station 1111+92, 55'RT. From there it turns northerly running along the east side of IH 43 crossing under Green Tree Road toward the Good Hope Road interchange.
    - Prior to construction Midwest Fiber Networks will construct a new underground communication line beginning at an existing handhole at Station 1077+79, 110'LT running northerly crossing Bender Road and continuing along the east side of Jean Nicolet Road to a new handhole at Station 12JN+08, 21'RT where it turns westerly crossing Jean Nicolet Road to Station 12JN+08, 35'LT. From there it turns northerly running along the westerly sidewalk of Jean Nicolet Road crossing under the UPRR and then turning northwesterly across Fairfield Court intersection and turning northerly along the west side of Jean Nicolet Road to a new handhole located at 22JN+92, 30'LT where it joins into the new CenturyLink facilities described above. The existing line will be discontinued in place.
- An existing underground communication line beginning at an existing handhole at Station 14+05, 59'RT and running easterly along the south side of Bender Road to an existing handhole at Station 15+88, 39'RT where it turns southeasterly and then easterly crossing Port Washington Road to an existing handhole at Station 17+02, 43'RT. This line will remain in place without adjustment.

North Shore Water Commission has an existing underground 8" sludge force main within the project limits beginning on their property at Station 10JN+62, 46'LT running easterly and crossing Jean Nicolet Road to Station 10JN+65, 23' RT where it turns southeasterly into Bender Road to Station 14+51, 16'LT. From there it turns easterly where it ties into the MMSD sanitary sewer at Station 15+65, 9'LT. This line will remain in place without adjustment.

North Shore Water Commission also has an existing underground 30" raw water line within the project limits beginning beyond the southerly project limits running northerly along the west side of Jean Nicolet Road crossing Bender Road at Station 13+47 and continuing onto the North Shore Water Commission property. This line will remain in place without adjustment.

Spectrum has existing overhead and underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits at a We Energies' pole at Station 12+92, 30'LT and running easterly crossing Jean Nicolet Road and continuing along the north sidewalk of Bender Road to Station 15+85, 33'LT where it turns northeasterly to an existing pedestal at Station 15+86, 37'LT. From there it turns easterly crossing Port Washington Road to the northeast corner where it jogs and then continues easterly under the northerly sidewalk to beyond the project limits.
    - Prior to construction Spectrum will relocate their facilities constructing a new underground conduit beginning at a We Energies' pole at 13+14, 29'LT and running easterly down the north sidewalk of Bender Road crossing Port Washington Road to an existing We Energies' pole located at Station 17+49, 26'LT. The existing line will be discontinued in place.

- An existing underground communication line beginning at a We Energies' pole at Station 28JN+56, 52'LT and running northerly along the westerly right-of-way of Jean Nicolet Road crossing Acacia Road and continuing to an existing We Energies pole at Station 34JN+62, 39'LT. The existing line will remain in place without adjustment.

Verizon Business has existing underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits at a We Energies' pole at Station 13+14, 29'LT and running easterly crossing Jean Nicolet Road and continuing along the north sidewalk of Bender Road to Station 15+73, 25'LT where it turns northeasterly to an existing handhole at Station 15+91, 41'LT. From there it turns easterly crossing Port Washington Road to the northeast corner where it jogs and then continues easterly under the northerly sidewalk to beyond the project limits.
    - Prior to construction Verizon will relocate portions of their facilities constructing a new handhole at Station 14+24, 28'LT and new underground communication line running easterly and parallel to their existing line and splicing into their existing line at Station 15+92, 37'LT. The existing handhole at Station 15+91, 41'LT will be removed. The existing line between Station 14+24, 28'LT and Station 15+92, 37'LT will be discontinued in place. The remainder of the line will remain in place without adjustment.

We Energies – Electric has existing overhead and underground electric facilities in the following locations:

- See the section for **South End Mainline (IH 43: Bender to Green Tree)** below for the disposition of We Energies – Electric's overhead facilities in this area.
- An existing underground electric duct package beginning beyond the westerly project limits of Bender Road at an existing pole at Station 13+14, 29'LT and running easterly to manholes located at Station 13+32, 26'LT and at Station 13+81, 27'LT and crossing Jean Nicolet Road and continuing along the north sidewalk of Bender Road crossing Port Washington Road to a manhole at Station 17+37, 15'LT and then continues easterly to beyond the project limits. This line will remain in place without adjustment.
    - During construction and in conjunction with grading and paving operations We Energies will adjust the chimney of the existing manholes located at Station 13+81, 27'LT. Allow two working days for We Energies to perform their adjustments.
- An existing underground electric duct package beginning at a manhole at Station 10JN+27, 3'RT running northerly down the northbound lanes of Jean Nicolet Road to manholes located at Station 21JN+04, 12'RT, Station 26JN+97, 4'LT, Station 32JN+68, 7'LT, Station 39JN+27, 10'LT, and Station 45JN+63, 11'LT and continuing northerly to Station 45JN+65, 12'LT where it turns easterly crossing IH 43 to a manhole in Port Washington Road.
    - Prior to construction We Energies – Electric will construct a new underground duct package beginning at Station 12JN+00, 1'LT running westerly to Station 12JN+00, 37'LT and turning northerly running in the grass area behind the existing sidewalk to a new transformer at Station 19JN+09, 27'LT. From there it turns northeasterly to Station 19JN+31, 6'LT and then turns northerly to Station 20JN+86, 9'LT and then turns northeasterly connecting into the existing manhole at Station 21JN+04, 12'RT. The existing line from Station 12JN+00, 1'LT to the existing manhole at Station 21JN+04, 12'RT will be discontinued in place. The existing line running south of Station 12JN+00, 1'LT and north of the manhole at Station 21JN+04, 12'RT will remain in place without adjustment.
    - Prior to construction We Energies – Electric will construct a new underground electric line beginning at a new transformer at Station 19JN+09, 27'LT running easterly to Station 19JN+09, 30'RT where it turns northerly to serve an existing WisDOT lighting and FTMS cabinet at Station 19JN+46, 32'RT.
    - Prior to construction We Energies – Electric will construct a new underground electric line beginning at Station 20JN+90, 36'LT running northerly crossing Fairfield Court to Station 21JN+28, 49'LT where it jogs northeasterly to Station 21JN+51, 34'LT and turns northerly in an easement to a new pole located at Station 23JN+26, 37'LT.

- Prior to construction We Energies – Electric will construct a new underground duct package beginning at the existing manhole at Station 39JN+27, 10'LT running westerly to Station 39JN+27, 32'LT and turning northerly to Station 45JN+06, 37'LT. From there it turns easterly to Station 45JN+06, 14'LT where it turns northerly connecting into the existing manhole at Station 45JN+63, 11'LT. The existing line from Station 39JN+27, 10'LT to Station 45JN+63, 11'LT will be discontinued in place. The existing line running south of the manhole at Station 39JN+27, 10'LT and north of the manhole at Station 45JN+63, 11'LT will remain in place without adjustment.
- During construction and in conjunction with grading and paving operations We Energies will adjust the chimney of the existing manholes located at Station 10JN+27, 3'RT, Station 21JN+04, 12'RT, Station 26JN+97, 4'LT, Station 32JN+68, 7'LT, Station 39JN+27, 10'LT, Station 45JN+63, 11'LT. Allow two working days per manhole for We Energies to perform their adjustments.

We Energies – Gas has existing underground gas facilities in the following locations:

- An existing underground gas main beginning at a tee on the south side of Bender Road at Station 13+25, 27'RT running northerly to Station 10JN+23, 53'LT and jogging northeasterly to Station 10JN+48, 32'LT and then turning northerly running along the westerly right-of-way of Jean Nicolet Road to Station 13JN+63, 42'LT and jogging northeasterly to Station 13JN+96, 8'LT. From there it turns northerly running along the back of sidewalk crossing the UPRR, Fairfield Court, and Brentwood Lane to Station 32JN+86, 45'LT where it turns westerly running along the north side of Acacia Road to beyond the project limits.
    - Prior to construction We Energies - Gas will construct a new underground gas main connecting into the existing main on the south side of Bender Road at Station 13+19, 27'RT running northerly to Station 10JN+17, 59'LT and jogging easterly to Station 10JN+17, 25'LT and then turning northerly and northeasterly running along the westerly right-of-way of Jean Nicolet Road to Station 14JN+64, 12'LT. From there it turns northerly running behind the back of sidewalk crossing the UPRR and Fairfield Court to Station 23JN+09, 22'LT where it turns easterly connecting into the existing main at Station 23JN+09, 15'LT. The existing line from Station 13+25, 27'RT to Station 23JN+09, 15'LT will be discontinued in place. The existing line north of Station 23JN+09, 15'LT will remain in place without adjustment.
- An existing underground gas main beginning beyond the westerly project limits running easterly in the side road of Brentwood Lane and teeing into the existing water main in Jean Nicolet Road at Station 25JN+13, 24'LT. This existing line will remain in place without adjustment.
- An existing underground gas main beginning beyond the westerly project limits running easterly in the side road of Apple Tree Road and crossing both Jean Nicolet Road and IH 43 connecting to Port Washington Road.
    - Prior to construction We Energies – Gas will connect this main into the new gas main in Jean Nicolet Road at Station 36JN+30, 30'LT. The existing line west of this point will remain in place without adjustment.
- An existing underground gas main beginning beyond the westerly project limits running easterly in the side road of Daphne Road to Station 41JN+28, 43'LT and turning southerly running along behind the sidewalk of Jean Nicolet Road to Station 39JN+18, 37'LT.
    - Prior to construction We Energies – Gas will connect this main into the new gas main in Jean Nicolet Road at Station 41JN+29, 50'LT. The existing line west of this point will remain in place without adjustment.
- An existing underground gas main beginning at Station 50JN+52, 26'LT running northerly along the westerly back of curb and sidewalk of Jean Nicolet Road to Station 63JN+38, 22'LT and turning westerly running down Green Tree Road to beyond the project limits.
    - Prior to construction We Energies - Gas will construct a new underground gas main connecting into the existing main at Station 32JN+36, 37'LT running northerly behind the back of walk of Jean Nicolet Road and crossing Acacia Road, Apple Tree Road, and Daphne Road and continuing to Station 62JN+17, 25'LT and turning easterly and connecting into the existing main at Station 62JN+17, 22'LT. The existing line from Station 50JN+52, 26'LT to Station 62JN+17, 22'LT will be discontinued in place. The existing line north of Station 62JN+17, 22'LT will remain in place without adjustment.

We Energies – Gas has existing discontinued underground gas facilities in the following locations:

- An existing discontinued underground gas main beginning at Station 23JN+16, 9'LT running easterly to Station 23JN+16, 18'RT and turning northerly Station 25JN+14, 9'RT and turning westerly to Station 25JN+14, 18'LT.
- An existing discontinued underground gas main beginning at Station 30JN+21, 36'LT running northerly behind the sidewalk of Jean Nicolet Road to Station 32JN+86, 35'LT.
- An existing discontinued underground gas main beginning at Station 61JN+24, 37'LT running northerly to Station 62JN+57, 13'LT and jogging northwesterly and northerly and northwesterly into Green Tree Road beyond the project limits.

Whitefish Bay, Village of – Water has existing underground water facilities within the project limits beginning on the North Shore Water Commission property at Station 10JN+67, 55'LT running southeasterly and crossing Jean Nicolet Road into Bender Road to Station 14+07, 35'RT. From there it turns easterly running along the south side of Bender Road crossing Port Washington Road to beyond the easterly project limits. This line will remain in place without adjustment.

Wisconsin Independent Network has existing underground communications facilities in the following locations:

- An existing underground communication line within WisDOT communications facilities following the same path as Midwest Fiber Networks as described in the Midwest Fiber Networks section above.
    - Wisconsin Independent Network will relocate their facilities into new Midwest Fiber Networks and CenturyLink facilities following the same path as Midwest Fiber Networks as described in the Midwest Fiber Networks section above. The existing line will be discontinued in place.

1229-04-73: South End Mainline (IH 43: Bender to Green Tree)

AT&T Local Network has existing underground communications facilities in the following locations:

- An existing underground communication line in a We Energies duct package beginning in Jean Nicolet Road at Station 45JN+63, 11'LT running easterly and crossing IH 43 at Station 1114+22 to a manhole in Port Washington Road located at Station 136PS+11, 2'LT. This line will remain in place without adjustment.

AT&T Wisconsin has existing overhead and underground communications facilities in the following locations:

- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits at a pole at Station 27JN+16, 71'LT running easterly crossing IH 43 at Station 1095+61 to a pole at Station 117PN+33, 22'LT and continuing to beyond the project limits.
    - Prior to construction AT&T Wisconsin will construct new overhead wires on We Energies' poles beginning beyond the westerly project limits at a new pole at Station 27JN+18, 69'LT running easterly crossing IH 43 at Station 1095+45 to a pole at Station 117PN+08, 50'RT where it jogs northeasterly to a new pole at Station 117PN+30, 106'RT. The existing overhead communication lines will be removed off of We Energies' poles.
- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits at a pole at Station 34JN+62, 39'LT running northeasterly crossing IH 43 at Station 1103+71 to a pole at Station 125PN+95, 30'LT.
    - Prior to construction AT&T Wisconsin will construct new overhead wires on We Energies' poles beginning beyond the westerly project limits at a new pole at Station 34JN+57, 40'LT running easterly crossing IH 43 at Station 1103+03 to a pole at Station 124PN+84, 45'RT. The existing overhead communication lines will be removed off of We Energies' poles.

Fox Point, Village of – Water has existing underground water main facilities within the project limits beginning in Jean Nicolet Road and running easterly crossing IH 43 at Station 1086+53 to Port Washington Road. This line will remain in place without adjustment.

Glendale, City of – Sewer has existing underground sanitary facilities within the project limits. Adjust and reconstruct manholes as shown in the plans and bid items.

Glendale, City of – Water has existing underground water facilities in the following locations:

- An existing underground water main beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1077+89 to a tee in Port Washington Road. The existing water main will remain in place without adjustment.
- An existing underground water main beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1089+89 to a tee in Port Washington Road.
    - Prior to construction Glendale Water will construct a new underground water main beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1090+55 to a tee in Port Washington Road. The existing water main will be discontinued in place.
- An existing underground water main beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1100+89 to a tee in Port Washington Road.
    - Prior to construction Glendale Water will construct a new underground water main beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1096+99 to a tee in Port Washington Road. The existing water main will be discontinued in place.
- An existing underground water main beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1109+67 to a tee in Port Washington Road.
    - Prior to construction Glendale Water will construct a new underground water main beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1109+07 to a tee in Port Washington Road. The existing water main will be discontinued in place.

Milwaukee Metropolitan Sewerage District has existing underground sanitary facilities in the following locations:

- An existing underground sanitary sewer beginning beyond the southerly project limits running northerly to a manhole in Bender Road at Station 15+65, 14'LT and continuing to a manhole at Station 1104+24, 53'LT where it curves northerly and westerly down Apple Tree Road to beyond the project limits. This underground sewer will remain in place without adjustment. Adjust and reconstruct manholes as shown in the plans and bid items.
- An existing underground sanitary sewer beginning beyond the westerly project limits running easterly in Green Tree Road crossing IH 43 at Station 1131+74 and continuing to beyond the project limits. This underground sewer will remain in place without adjustment.
- An existing underground sanitary sewer beginning beyond the westerly project limits running easterly in Green Tree Road crossing IH 43 at Station 1132+01 and continuing to beyond the project limits. This underground sewer will remain in place without adjustment.

Spectrum has existing overhead communications facilities in the following locations:

- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits at a pole at Station 34JN+62, 39'LT running northeasterly crossing IH 43 at Station 1103+71 to a pole at Station 125PN+95, 30'LT.
    - Prior to construction Spectrum will construct new overhead wires on We Energies' poles beginning beyond the westerly project limits at a new pole at Station 34JN+57, 40'LT running easterly crossing IH 43 at Station 1103+03 to a pole at Station 124PN+84, 45'RT. The existing overhead communication lines will be removed off of We Energies' poles.

We Energies – Electric has existing overhead and underground electric facilities in the following locations:

- An existing overhead electric line beginning beyond the westerly project limits at a pole at Station 23JN+39, 57'LT running easterly crossing IH 43 at Station 1091+66 to a pole at Station 113PN+26, 3'RT and continuing to beyond the project limits.
    - Prior to construction We Energies will construct new overhead wires beginning beyond the westerly project limits at a new pole at Station 23JN+26, 72'LT running easterly crossing IH 43 at Station 1091+62 to a pole at Station 113PN+29, 45'RT and continuing to a new pole at Station 113PN+30, 106'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning beyond the westerly project limits at a pole at Station 27JN+16, 71'LT running easterly crossing IH 43 at Station 1095+61 to a pole at Station 117PN+33, 22'LT and continuing to beyond the project limits.
    - Prior to construction We Energies will construct new overhead wires beginning beyond the westerly project limits at a new pole at Station 27JN+18, 69'LT running easterly crossing IH 43 at Station 1095+45 to a pole at Station 117PN+08, 50'RT where it jogs northeasterly to a new pole at Station 117PN+30, 106'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning beyond the westerly project limits at a pole at Station 34JN+62, 39'LT running northeasterly crossing IH 43 at Station 1103+71 to a pole at Station 125PN+95, 30'LT.
    - Prior to construction We Energies will construct new overhead wires beginning beyond the westerly project limits at a new pole at Station 34JN+57, 40'LT running easterly crossing IH 43 at Station 1103+03 to a pole at Station 124PN+84, 45'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing underground electric line in a duct package beginning in Jean Nicolet Road at Station 45JN+63, 11'LT running easterly and crossing IH 43 at Station 1114+22 to a manhole in Port Washington Road located at Station 136PS+11, 2'LT. This line will remain in place without adjustment.

We Energies – Gas has existing underground gas facilities in the following locations:

- An existing underground gas line beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1097+91 to a tee in Port Washington Road.
    - Prior to construction the existing gas main will be discontinued in place.
- An existing underground gas line beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1104+62 to Port Washington Road.
    - Prior to construction We Energies will construct a new underground gas main beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1109+07 to a tee in Port Washington Road. The existing gas main will be discontinued in place.

We Energies – Gas has existing discontinued underground gas facilities in the following locations:

- An existing discontinued underground gas main beginning in Jean Nicolet Road and running easterly crossing IH 43 at Station 1078+18 to Port Washington Road.
- An existing discontinued underground gas main beginning in Jean Nicolet Road and running easterly crossing IH 43 at Station 1093+20 to Port Washington Road.
- An existing discontinued underground gas main beginning in Jean Nicolet Road and running easterly crossing IH 43 at Station 1099+11 to Port Washington Road.
- An existing discontinued underground gas main beginning in Jean Nicolet Road and running easterly crossing IH 43 at Station 1104+59 to Port Washington Road.
- An existing discontinued underground gas main beginning in Jean Nicolet Road and running easterly crossing IH 43 at Station 1119+28 to Port Washington Road.

WisDOT has existing communications facilities within the project limits. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of communication facilities as shown in the plans and bid items.

WisDOT has existing light poles and associated underground electric lighting facilities within the project limits. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of lighting facilities as shown in the plans and bid items.

1229-04-73: South End Mainline (Good Hope Road Interchange: Green Tree to Bradley)

AT&T Local Network has existing overhead communications facilities in the following locations:

- An existing overhead communication line on We Energies' poles beginning beyond the northerly project limits running southerly along the easterly right-of-way of Port Washington Road and crossing Good Hope Road and continuing beyond the project limits.
    - Prior to construction AT&T Local Network will transfer their existing overhead wires onto new We Energies poles at Station 32GHW+62, 47'LT and at Station 33GHE+05, 60'RT.

AT&T Wisconsin has existing underground communications facilities in the following locations:

- A pair of existing underground communication lines beginning beyond the easterly project limits running westerly along the northerly right-of-way of Green Tree Road to Station 1132+39, 115'RT and turning northerly and running in an easement along the easterly right-of-way of IH 43 to Station 1139+33, 165'RT and turning easterly to beyond the project limits.
    - Prior to construction AT&T Wisconsin replace the westernmost of the two lines and construct a new under underground communication line by splicing into the existing line at Station 1132+30, 130'RT and running northerly in an easement along the easterly right-of-way of IH 43 connecting into the existing line with a new pedestal Station 1139+36, 172'RT. The existing line between Station 1132+30, 130'RT and Station 1139+36, 172'RT will be discontinued in place. The easternmost of the two lines will remain in place without adjustment.
- An existing underground communication line beginning beyond the westerly project limits running easterly along the median of Good Hope Road to an existing manhole located at Station 18GHE+72, 41'LT where it turns southerly crossing Good Hope Road to Station 18GHE+72, 26'RT. From there it turns and runs easterly along the southerly grass area of Good Hope Road to a manhole located at Station 22GHE+73, 21'RT and continuing easterly crossing IH 43 at Station 1144+75 and continuing to Station 30GHE+12, 43'RT. From there it turns northwesterly to an existing manhole at Station 30GHE+94, 6'RT and then turns easterly running along the southerly curb line of Good Hope Road to a manhole in Port Washington Road at Station 32GHE+55, 6'RT and continuing to beyond the project limits. This line will remain in place without adjustment except in the following locations:
    - Prior to construction AT&T Wisconsin will expose and reconstruct the existing underground communications line offset 4' to the south of the existing line from approximately Station 20GHE+32, 23'RT to Station 21GHE+70, 18'RT to avoid a conflict with the proposed storm sewer.
    - Prior to construction AT&T Wisconsin will reconstruct and lower the existing manhole located at Station 22GHE+73, 21'RT.
    - During construction and in conjunction with grading and paving operations AT&T Wisconsin will reconstruct the chimney of the existing manhole located at Station 30GHE+94, 6'RT. Allow two working days for AT&T Wisconsin to perform their adjustments.
    - During construction AT&T Wisconsin will expose and reconstruct approximately 50' of existing underground communications line immediately to the east of the existing manhole located at Station 30GHE+94, 6'RT to avoid a conflict with the proposed storm sewer. Allow ten working days for AT&T Wisconsin to perform their adjustments.

- During construction and in conjunction with grading and paving operations AT&T Wisconsin will reconstruct the chimney of the existing manhole located at Station 32GHE+55, 6'RT. Allow two working days for AT&T Wisconsin to perform their adjustments.
- During construction AT&T Wisconsin will expose and reconstruct approximately 50' of existing underground communications line to avoid a conflict with the proposed storm sewer crossing at Station 33GHE+14, 5'RT. Allow 10 working days for AT&T Wisconsin to perform their adjustments.
- During construction AT&T Wisconsin will expose and reconstruct approximately 50' of existing underground communications line to avoid a conflict with the proposed storm sewer crossing at Station 34GHE+37, 5'RT. Allow ten working days for AT&T Wisconsin to perform their adjustments.

- An existing underground communication line beginning beyond the southerly project limits running northerly in the northbound lanes of Port Washington Road to a manhole located at Station 32GHE+55, 6'RT and continuing northerly to beyond the project limits. This line will remain in place without adjustment.

CenturyLink Communications has existing underground communications facilities in the following locations:

- An existing underground communication line crossing Green Tree Road at Station 37GT+29 and running northerly along the existing westerly right-of-way of IH 43 and crossing Good Hope Road at Station 24GHE+36 and continuing along the existing westerly right-of-way of IH 43 crossing Calumet Road and Bradley Road and continuing northerly towards the Brown Deer Road interchange.
  - Prior to construction CenturyLink will relocate their facilities beginning at a new handhole at Station 34GT+88, 33'RT and running northerly crossing Green Tree Road and continuing along the new westerly right-of-way of IH 43 crossing Good Hope Road at Station 24GHE+62 and continuing along the westerly right-of-way of IH 43 crossing Calumet Road and Bradley Road and continuing northerly towards the Brown Deer Road interchange. The existing line will be discontinued in place.

Glendale, City of – Sewer has existing underground sanitary facilities within the project limits. Adjust and reconstruct manholes as shown in the plans and bid items.

Glendale, City of – Water has existing underground water facilities in the following locations:

- An existing underground water main beginning beyond the southerly project limits running northerly along the easterly curb line of Port Washington Road and crossing Good Hope Road and continuing northerly beyond the project limits. This line will remain in place without adjustment.
- An existing underground water main beginning at Station 32GHE+74, 2'RT running easterly in the westbound lanes of Good Hope Road to beyond the project limits.
  - Prior to construction Glendale Water will relocate an existing hydrant located at Station 32GHW+88, 17'LT to Station 32GHW+90, 40'LT.
- An existing underground water main beginning at a tee at Station 204PNGH+79, 28'RT running westerly crossing Port Washington Road to Station 204PSGH+90, 36'LT and turning northwesterly to beyond the project limits. This line will remain in place without adjustment.

During construction and in conjunction with grading and paving operations, adjust water valves as shown in the plans and bid items.

Glendale - Water has existing discontinued underground water main facilities in the following locations:

- An existing discontinued underground water main beginning at Station 32GHE+70, 3'LT running northerly along the easterly curb line of Port Washington Road to beyond the project limits.

Midwest Fiber Networks has existing underground and overhead communications facilities in the following locations:

- An existing underground communication line within WisDOT communications facilities beginning south of Green Tree Road running northerly along the east side of IH 43 to a handhole at Station 1141+57, 173'RT where it turns northwesterly and westerly crossing IH 43 to a handhole at Station 1141+91, 180'LT. From there it turns northerly running along the west side of the IH 43 southbound on-ramp to an existing handhole located in the median of Good Hope Road at Station 24GHE+06, 46'LT where it turns westerly running down the median of Good Hope Road to beyond the project limits.
    - Prior to construction Midwest Fiber Networks will relocate their facilities into new CenturyLink facilities described above beginning south of Green Tree Road running northerly to a new handhole located at Station 1143+11, 262'LT. From there Midwest Fiber Networks will jump out of CenturyLink facilities and construct their own underground communication line running northerly along the westerly right of way of IH 43 to the median of Good Hope Road at Station 24GHE+57, 32'LT. From there it turns running westerly down the median of Good Hope Road to Station 17GHE+00, 30'LT where it curves northwesterly to a new handhole at Station 15GHE+91, 52'LT and an existing WisDOT handhole at Station 15GHE+91, 56'LT. The existing line will be discontinued in place.
- An existing underground communication line within WisDOT communications facilities beginning on the west side of IH 43 running easterly crossing IH 43 at Station 1142+69 and continuing to an existing handhole at Station 1142+75, 100'RT.
    - Prior to construction Midwest Fiber Networks will construct a new underground line beginning at a new handhole located at Station 1143+11, 262'LT running easterly crossing IH 43 at Station 1143+05 and continuing to a new handhole at Station 1143+02, 225'RT. The existing underground line and handhole will be discontinued in place.
- An existing underground communication line beginning at an existing handhole at Station 1142+75, 100'RT and running southerly to Station 1140+66, 119'RT and then turning easterly to beyond the project limits.
    - Prior to construction Midwest Fiber Networks will construct a new underground line beginning at a new handhole located at Station 1143+02, 225'RT and running southerly connecting into the existing underground line at Station 1140+58, 157'RT. The existing underground line from Station 1142+75, 100'RT to Station 1140+58, 157'RT will be discontinued in place.
- An existing underground communication line beginning at an existing handhole at Station 1142+75, 100'RT and running easterly to Station 1142+71, 165'RT and then turning northeasterly to Station 1143+06, 215'RT where it turns northerly running along the existing northbound off ramp crossing Good Hope Road at Station 29GHE+66 and continuing to an existing We Energies pole at Station 29GHW+35, 76'LT.
    - Prior to construction Midwest Fiber Networks will construct a new underground line beginning at a new handhole located at Station 1143+02, 225'RT and running northerly running along the existing northbound off ramp crossing Good Hope Road at Station 29GHE+58 and continuing to an existing We Energies pole at Station 29GHW+35, 76'LT. The existing underground line from Station 1142+75, 100'RT to Station 29GHW+35, 76'LT will be discontinued in place.
- An existing overhead communication line on We Energies' poles beginning at Station 29GHW+35, 76'LT running easterly along the north side of Good Hope Road to Station 32GHW+67, 31'LT where it turns northerly running along the easterly right of way of Port Washington Road to beyond the project limits.
    - Prior to construction Midwest Fiber Networks will construct new overhead wires on We Energies' poles beginning at Station 29GHW+35, 76'LT running easterly along the north side of Good Hope Road to Station 32GHW+60, 47'LT and turning northerly running along the easterly right of way of Port Washington Road to an existing pole located at Station 205PNGH+39, 32'RT. The existing overhead communication lines will be removed off of We Energies' poles.

Milwaukee County – Signals has existing traffic signal facilities at the intersection of Port Washington Road and Good Hope Road. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of traffic signal facilities as shown in the plans and bid items.

Milwaukee Metropolitan Sewerage District has existing underground sanitary facilities in the following locations:

- An existing underground sanitary sewer beginning beyond the southerly project limits running northerly in the northbound lanes of Port Washington Road crossing Good Hope Road at Station 32GHE+69 and continuing to beyond the project limits. This underground sewer will remain in place without adjustment.

River Hills, Village of – Sanitary has existing underground sanitary facilities within the project limits crossing IH 43 at Station 1177+10. This line will remain in place without adjustment.

Spectrum has existing overhead and underground communications facilities in the following locations:

- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits running easterly along the northerly right-of-way of Green Tree Road and jogging northeasterly to a pole at Station 1133+06, 97'LT and then turning southeasterly crossing IH 43 at Station 1132+71 to a pole at Station 1132+03, 186'RT and continuing to beyond the project limits.
    - Prior to construction Spectrum will construct new overhead wires on We Energies' poles beginning beyond the westerly project limits running easterly along the northerly right-of-way of Green Tree Road crossing IH 43 at Station 1132+35 and continuing to an existing pole at Station 1132+03, 186'RT. The existing overhead communication lines will be removed off of We Energies' poles.
- An existing underground communication line beginning at a We Energies pole located at Station 1132+32, 110'RT and running northerly in an easement along the easterly right-of-way of IH 43 to Station 1134+46, 129'RT and turning easterly to beyond the project limits.
    - Prior to construction We Energies will remove the pole at Station 1132+32, 110'RT and construct a new pole at Station 1132+15, 115'RT. Spectrum will connect to the new pole at Station 1132+15, 115'RT, construct a new handhole at Station 1132+32, 117'RT, and splice into the existing underground line at Station 1132+43, 117'RT. The existing line north of the splice point at Station 1132+43, 117'RT will remain in place without adjustment.
- An existing overhead communication line on We Energies' poles beginning at a pole at Station 30GHW+90, 52'LT running easterly along the northerly right-of-way of Good Hope Road and crossing Port Washington Road and continuing to beyond the project limits.
    - Prior to construction Spectrum will construct new overhead wires on We Energies' poles beginning at a pole at Station 30GHW+90, 52'LT running easterly along the northerly right-of-way of Good Hope Road and crossing Port Washington Road to a new pole at Station 32GHW+62, 47'LT and jogging southeasterly to a new pole at Station 34GHW+93, 31'LT and continuing easterly to beyond the project limits. The existing overhead communication lines will be removed off of We Energies' poles.
- An existing overhead communication line on We Energies' poles beginning at a pole at Station 34GHW+22, 19'LT running southeasterly crossing Good Hope Road to beyond the project limits.
    - Prior to construction Spectrum will construct new overhead wires on We Energies' poles beginning at a new pole at Station 34GHW+93, 31'LT and running southwesterly crossing Good Hope Road to a new pole at Station 34GHE+64, 24'RT. The existing overhead communication lines will be removed off of We Energies' poles.

Verizon Business has existing underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits running easterly along the southerly right-of-way of Calumet Road crossing IH 43 at Station 1171+37 and continuing to beyond the project limits. The existing line will remain in place without adjustment.

We Energies – Electric has existing overhead and underground electric facilities in the following locations:

- An existing overhead electric line beginning beyond the westerly project limits running easterly along the northerly right-of-way of Green Tree Road and jogging northeasterly to a pole at Station 1133+06, 97'LT and then turning southeasterly crossing IH 43 at Station 1132+71 to a pole at Station 1132+03, 186'RT and continuing to beyond the project limits.
    - Prior to construction We Energies will construct new poles and overhead wires beginning beyond the westerly project limits running easterly along the northerly right-of-way of Green Tree Road crossing IH 43 at Station 1132+35 and continuing to an existing pole at Station 1132+03, 186'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning beyond the westerly project limits at a pole at Station 1132+64, 180'LT running northerly along the westerly right-of-way of IH 43 to a pole at Station 1139+79, 85'LT and turning easterly crossing IH 43 at Station 1139+66 and continuing to a pole at Station 1139+42, 159'RT.
    - Prior to construction We Energies will remove the overhead electric lines off of the existing poles and the poles will be removed.
- An existing underground electric line beginning on the south side of Green Tree Road running northerly crossing at Station 40GT+17 and continuing in an easement behind the easterly right-of-way of IH 43 and serving the existing businesses. This line will remain in place without adjustment.
- An existing overhead electric line beginning beyond the westerly project limits running easterly along the northerly right-of-way of Good Hope Road to a pole at Station 24GHW+07, 50'LT and then turning southeasterly crossing Good Hope Road to a pole at Station 24GHE+47, 47'RT and connecting to a house.
    - Prior to construction We Energies will construct new poles and overhead wires beginning beyond the westerly project limits running easterly along the northerly right-of-way of Good Hope Road to a new pole at Station 23GHW+96, 54'LT and then turning southeasterly crossing Good Hope Road to a pole at Station 24GHE+40, 70'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning beyond the northerly project limits running southerly along the easterly right-of-way of Pheasant Lane and then turning southeasterly crossing Good Hope Road to a pole at Station 20GHE+86, 35'RT and continuing beyond the project limits.
    - Prior to construction We Energies will construct new poles and overhead wires beginning a new pole at Station 20GHW+45, 58'LT and running southeasterly crossing Good Hope Road to a new pole at Station 24GHE+86, 42'RT and continuing beyond the project limits. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning at a pole at Station 29GHW+35, 76'LT running easterly along the northerly right-of-way of Good Hope Road and crossing Port Washington Road to beyond the project limits.
    - Prior to construction We Energies will construct new poles and overhead wires beginning at an existing pole at Station 29GHW+35, 76'LT running easterly along the northerly right-of-way of Good Hope Road and crossing Port Washington Road to a new pole at Station 32GHW+62, 47'LT and jogging southeasterly to a new pole at Station 34GHW+93, 31'LT and continuing easterly to beyond the project limits. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning at a pole at Station 30GHW+89, 52'LT running southwesterly crossing Good Hope Road to a pole at Station 30GHE+46, 24'RT and turning easterly to a pole at Station 31GHE+83, 23'RT
    - Prior to construction We Energies will construct new poles and overhead wires beginning a new pole at Station 31GHW+06, 52'LT and running southwesterly crossing Good Hope Road to a new pole at Station 30GHE+43, 47'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing underground electric line beginning at a pole at Station 30GHE+46, 24'RT and running both southerly and southeasterly to beyond the project limits.

    - Prior to construction We Energies will relocate their facilities to a location south of the project limits and discontinue the existing lines in place.

- An existing underground electric service line beginning at a pole at Station 30GHW+89, 52’LT and running westerly to a WisDOT signal cabinet at Station 29GHW+85, 45’LT. This service line will be discontinued in place once the signal cabinet is taken out of service as part of the roadway contract.
- An existing underground electric line beginning beyond the southerly project limits running northerly in the southbound median lane of Port Washington Road to a manhole located at Station 32GHE+08, 15’RT and continuing to beyond the project limits.
    - Prior to construction We Energies will construct a new underground electric line beginning at manhole located at Station 32GHE+08, 15’RT and portions to the north to avoid a conflict with the proposed storm sewer. The existing underground line will be discontinued in place.
- An existing overhead electric line beginning beyond the northerly project limits running southerly along the easterly right-of-way of Port Washington Road and crossing Good Hope Road and continuing beyond the project limits.
    - Prior to construction We Energies will construct new poles at Station 32GHW+62, 47’LT and at Station 33GHE+05, 60’RT. The overhead electric lines will be removed off of the existing poles and transferred to the new poles.
    - Prior to construction We Energies will construct new poles at Station 31GHE+82, 50’RT and at Station 33GHE+05, 60’RT and install new wires crossing Port Washington Road connecting these two poles.
- An existing overhead electric line beginning at a pole at Station 34GHW+22, 19’LT running southeasterly crossing Good Hope Road to beyond the project limits.
    - Prior to construction We Energies will construct new poles and overhead wires beginning at a new pole at Station 34GHW+93, 31’LT and running southwesterly crossing Good Hope Road to a new pole at Station 34GHE+64, 24’RT and install new wires crossing Good Hope Road connecting these two poles. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing underground electric line behind the easterly right-of-way of IH 43 beginning at Station 1152+09, 127’RT and running both easterly and southeasterly to beyond the project limits.
    - Prior to construction We Energies will discontinue in place the existing lines running easterly from Station 1152+09, 127’RT. The existing line running southeasterly from Station 1152+09, 127’RT will remain in place without adjustment.
- An existing overhead electric line beginning at a pole at Station 1158+39, 162’RT running northerly along the existing easterly right-of-way of IH 43 to a pole at Station 1167+20, 125’RT.
    - Prior to construction We Energies will construct new underground electric beginning at an existing pole at Station 1158+39, 162’RT running northerly along the existing easterly right-of-way of IH 43 and tying into an existing underground electric line at Station 1167+22, 130’RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning beyond the westerly project limits running easterly along the south side of Calumet Road crossing IH 43 at Station 1171+62 and continuing to beyond the project limits.
    - Prior to construction We Energies will construct a new taller pole at Station 1171+65, 114’RT. The overhead electric lines will be removed off of the existing poles and transferred to the new poles.
- An existing underground electric service line beginning at a pole at Station 1171+65, 112’RT and running southwesterly to a WisDOT communication cabinet at Station 1171+33, 96’RT. This service line will be discontinued in place once the communication cabinet is taken out of service as part of the roadway contract.

- An existing overhead electric line beginning at a pole at Station 1182+63, 101'LT running northerly along the existing westerly right-of-way of IH 43 to a pole at Station 1203+27, 99'LT.
    - Prior to construction We Energies will remove the existing poles and wires from Station 1182+63, 101'LT to Station 1197+75, 98'LT. The poles and overhead wires from Station 1198+52, 98'LT to Station 1203+27, 99'LT will remain in place without adjustment.
- An existing underground electric line beginning at a pole at Station 1188+89, 101'LT and running westerly to beyond the project limits.
    - Prior to construction We Energies will remove the existing pole at Station 1188+89, 101'LT and discontinue the existing line in place.
- An existing underground electric line beginning at an existing pole at Station 1196+46, 99'RT and running southerly to an existing light pole at Station 1194+78, 119'RT.
    - Prior to construction We Energies will construct a new underground line beginning at a new pole at Station 1196+46, 108'RT running southerly to existing light pole at Station 1194+78, 119'RT. We Energies will discontinue the existing line in place and remove the existing pole at Station 1196+46, 99'RT.

We Energies – Electric has existing discontinued underground electric facilities in the following locations:

- An existing discontinued underground electric line beginning beyond the westerly project limits of Bradley Road and running easterly crossing IH 43 at Station 1198+18 to beyond the project limits.

We Energies – Gas has existing underground gas facilities in the following locations:

- An existing underground gas line beginning beyond the northerly project limits running southerly along the west side of Pheasant Lane crossing Good Hope Road to Station 19GHE+95, 23'RT and turning easterly to Station 24GHE+05, 32'RT and then turning southerly to serve a house.
    - Prior to construction We Energies will construct a new underground gas line beginning at Station 19GHW+75, 50'LT and running southerly crossing Good Hope Road to Station 19GHE+79, 127'RT and turning westerly and tying into the existing service to the building. The existing underground gas line from Station 19GHW+95, 50'LT to Station 24GHE+05, 32'RT will be discontinued in place.
- An existing underground gas line beginning at a tee at Station 19GHW+94, 48'LT and running easterly to Station 22GHW+16, 46'LT and turning northerly to serve a house.
    - Prior to construction We Energies will construct a new underground gas line beginning at a tee at Station 19GHW+75, 50'LT and running easterly and tying into the existing main at Station 22GHW+16, 50'LT. The existing underground gas line from Station 19GHW+94, 48'LT to Station 22GHW+16, 46'LT will be discontinued in place.
- An existing underground gas main beginning beyond the southerly project limits running northerly along the westerly right of way of Port Washington Road and crossing Good Hope Road and continuing northerly beyond the project limits.
    - Prior to construction We Energies will construct a new underground gas line beginning at Station 31GHE+79, 30'RT and running easterly to Station 31GHE+89, 27'RT and then turning northerly crossing Good Hope Road to Station 31GHW+40, 120'LTand turning westerly tying into the existing main at Station 31GHW+26, 114'LT. The existing underground gas line from Station 31GHE+79, 30'RT to Station 31GHW+26, 114'LT will be discontinued in place.
- An existing underground high-pressure gas main beginning beyond the southerly project limits running northerly in the northbound lanes of Port Washington Road and crossing Good Hope Road and continuing northerly beyond the project limits.
    - During construction in conjunction with the closure of traffic lanes in Stage 2A, We Energies - Gas will construct a new underground high-pressure gas main vertical offset to avoid a conflict with the proposed storm sewer crossing at Station 32GHW+31, 0'LT. Allow ten working days for We Energies - Gas to perform their adjustments.

- An existing underground gas main beginning beyond the southerly project limits running northerly along the easterly curb of Port Washington Road to Station 32GHE+82, 24'RT and turning easterly along southerly right of way of Good Hope Road and continuing easterly to beyond the project limits.
    - Prior to construction We Energies will construct a new underground gas line beginning at Station 33GHE+09, 131'RT and running easterly to Station 33GHE+13, 131'RT where it turns and runs northerly to Station 33GHE+03, 88'RT and then turns northeasterly to Station 33GHE+37, 31'RT. From there it turns and runs easterly running along the southerly right of way of Good Hope Road to Station 35GHE+22, 30'RT and then turns northerly connecting into the existing main at Station 35GHE+22, 23'RT. The existing underground gas line from Station 33GHE+09, 131'RT to Station 35GHE+22, 23'RT will be discontinued in place.
- An existing underground gas main beginning beyond the westerly project limits running easterly along the south side of Calumet Road crossing IH 43 at Station 1171+62 and continuing to beyond the project limits.
    - Prior to construction We Energies will discontinue the existing line in place.
- An existing underground gas main beginning beyond the westerly project limits running easterly along the south side of Bradley Road crossing IH 43 at Station 1198+10 and continuing to beyond the project limits.
    - Prior to construction We Energies will construct a new gas main beginning at Station 1198+18, 193' LT and running southerly to Station 1197+97, 193' LT where it turns easterly crossing IH 43 at Station 1197+98 and continuing to Station 1197+99, 142' RT. From there it turns northerly and tying into the existing main at Station 1198+10, 142'RT. The existing underground gas line from Station 1198+18, 193' LT to Station 1198+10, 142'RT will be discontinued in place.

Wisconsin Independent Network has existing underground communications facilities in the following locations:

- An existing underground communication line within WisDOT communications facilities following the same path as Midwest Fiber Networks as described in the Midwest Fiber Networks section above.
    - Wisconsin Independent Network will relocate their facilities into new Midwest Fiber Networks and CenturyLink facilities following the same path as Midwest Fiber Networks as described in the Midwest Fiber Networks section above. The existing line will be discontinued in place.

WisDOT has existing communications facilities within the project limits. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of communication facilities as shown in the plans and bid items.

WisDOT has existing light poles and associated underground electric lighting facilities within the project limits. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of lighting facilities as shown in the plans and bid items.

WisDOT has existing traffic signal facilities within the project limits. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of traffic signal facilities as shown in the plans and bid items.

1229-04-73: South End Mainline (Brown Deer Road Interchange: Bradley to Fairy Chasm)

AT&T Local Network has existing overhead communications facilities in the following locations:

- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits running easterly along the northerly right-of-way of Brown Deer Road crossing IH 43 at Station 1252+89 and continuing along the northerly right-of-way of Brown Deer Road and crossing Port Washington Road to a pole at Station 630BDW+03, 30'LT and turning southerly crossing Brown Deer Road to beyond the project limits.

- Prior to construction AT&T Local Network will construct new overhead wires on We Energies' poles beginning at an existing pole at Station 610BDW+02, 46'LT running easterly along the northerly right-of-way of Brown Deer Road crossing IH 43 at Station 1252+87 and continuing along the northerly right-of-way of Brown Deer Road and crossing Port Washington Road and connecting into an existing pole at Station 630BDW+03, 30'LT. The overhead communication lines will be removed off of We Energies' poles.

AT&T Wisconsin has existing underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits running easterly along the northerly grass area of Brown Deer Road to pedestals and a handhole located at Station 608BDW+81, 40'LT and continuing to Station 610BDW+63, 42'LT where it turns southerly crossing Brown Deer Road and continues into the Park 'n Ride lot. From there it turns easterly crossing IH 43 at Station 1249+08 and continues to a manhole at Station 1247+84, 390'RT where it turns northerly running along the easterly right-of-way of IH 43 and then turns easterly running along the south curb line of Brown Deer Road to an existing manhole at Station 624BDE+95, 25'RT. From there it continues easterly crossing Port Washington Road to beyond the project limits. This line will remain in place without adjustment except in the following locations:
    - Prior to construction AT&T Wisconsin will adjust the pedestals and a handhole located at Station 608BDW+81, 40'LT.
    - During construction and in conjunction with grading and paving operations, AT&T Wisconsin will adjust the chimney of the existing manhole located at Station 624BDE+95, 25'RT. Allow two working days for AT&T Wisconsin to perform their adjustments.
    - During construction AT&T Wisconsin will expose and reconstruct approximately 50' of existing underground communications line to avoid a conflict with the proposed storm sewer crossing at Station 628BDE+77, 22'RT. Allow ten working days for AT&T Wisconsin to perform their adjustments.
- An existing underground communication line beginning at an existing manhole located at Station 624BDE+95, 25'RT running northerly crossing Brown Deer Road to a handhole and pedestal located at Station 624BDW+06, 26'LT where it turns easterly running along the sidewalk to Station 625BDW+94, 21'LT where it turns northerly to beyond the project limits.
    - During construction AT&T Wisconsin will expose and reconstruct the existing underground communications line running north out of the manhole and offset 3' to the west of the existing line from to avoid a conflict with the proposed storm sewer. The existing handhole and pedestal located at Station 624BDW+06, 26'LT will be relocated south to the proposed green space behind the proposed back of curb. Allow ten working days for AT&T Wisconsin to perform their adjustments.
    - During construction AT&T Wisconsin will construct a new underground communication line from the existing manhole located at Station 624BDE+95, 25'RT running easterly to Station 625BDE+99, 20'RT where it turns northerly crossing Brown Deer Road connecting into the existing line at a new pedestal located at Station 625BDW+88, 81'LT. The existing underground line from Station 624BDW+06, 26'LT to Station 625BDW+88, 81'LT will be discontinued in place. Allow ten working days for AT&T Wisconsin to perform their adjustments.
- An existing underground communication line beginning at an existing pedestal located at Station 622BDW+05, 49'LT running northwesterly along the easterly right-of-way of IH 43 to Station 1255+22, 416'RT where it turns easterly to serve a building. This existing line will remain in place without adjustment.
- An existing underground communication line beginning beyond the easterly project limits running westerly to pedestals located at Station 1259+10, 121'RT where it turns and runs northwesterly along the easterly right-of-way of IH 43 in an easement to Station 1264+85, 121'RT where it turns northeasterly to pedestals located at Station 1265+13, 160'RT. From there it turns and runs northwesterly along the easterly right-of-way of IH 43 in an easement to a couple pedestals located at Station 1269+05, 126'RT.

    - Prior to construction AT&T Wisconsin will construct a new underground communication line connecting into the existing line at Station 1259+02, 141'RT with new pedestals and running northwesterly along the easterly right-of-way of IH 43 in an easement and connecting into the existing line at Station 1259+02, 141'RT with a new pedestal and handhole. The existing underground line will be discontinued in place from Station 1259+02, 141'RT to Station 1259+02, 141'RT. The remainder of the line will remain in place without adjustment.

- An existing underground communication line beginning beyond the easterly project limits running westerly to an existing pedestal located at Station 1279+70, 127'RT and turning northwesterly running along the easterly right-of-way of IH 43 to Station 1283+89, 122'RT. This existing line will remain in place without adjustment.

AT&T Wisconsin has existing discontinued underground facilities in the following locations:

- An existing discontinued underground communication line beginning beyond the westerly project limits running easterly in the westbound median lane of Brown Deer Road to Station 613BDW+89, 2'RT.

- An existing discontinued underground communication line beginning at Station 621BDW+14, 10'LT running easterly to Station 622BDW+74, 7'RT where it turns southeasterly to Station 624BDE+02, 19'RT and then turns easterly to an existing manhole located at Station 624BDE+95, 25'RT.

Bayside, Village of – Sanitary has existing underground sanitary facilities within the project limits. Adjust and reconstruct manholes as shown in the plans and bid items.

CenturyLink Communications has existing underground communications facilities in the following locations:

- An existing underground communication line beginning south of Bradley Road running northerly along the existing westerly right-of-way of IH 43 crossing Bradley Road, Indian Creek, Dean Road, and Brown Deer Road at Station 613BDE+22 and continuing along the existing westerly right-of-way of IH 43 crossing Fairy Chasm Road and continuing northerly beyond the project limits towards the County Line Road interchange.

    - Prior to construction CenturyLink will relocate their facilities beginning at Bradley Road where it runs northerly along the westerly right-of-way of IH 43 crossing Indian Creek, Dean Road, and Brown Deer Road at Station 613BDE+26 and continuing along the westerly right-of-way of IH 43 crossing Fairy Chasm Road and continuing northerly beyond the project limits towards the County Line Road interchange. The existing line will be discontinued in place.

Everstream has existing underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the westerly project limits running easterly along the southerly right-of-way of Brown Deer Road to an existing handhole at Station 607BDE+60, 45'RT and continuing easterly crossing IH 43 at Station 1250+63 to the easterly right-of-way of IH 43 to Station 622BDE+72, 71'RT. From there it turns northerly to an existing handhole at Station 628BDE+76, 51'RT and then turns easterly running along the southerly sidewalk of Brown Deer Road to an existing handhole at Station 628BDE+02, 48'RT and continues easterly crossing Port Washington Road to beyond the project limits. This line will remain in place without adjustment.

Midwest Fiber Networks has existing overhead communications facilities in the following locations:

- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits running easterly along the northerly right-of-way of Brown Deer Road crossing IH 43 at Station 1252+89 and continuing along the northerly right-of-way of Brown Deer Road and crossing Port Washington Road to beyond the project limits.

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    - Prior to construction Midwest Fiber Networks will construct new overhead wires on We Energies' poles beginning at an existing pole at Station 610BDW+02, 46'LT running easterly along the northerly right-of-way of Brown Deer Road crossing IH 43 at Station 1252+87 and continuing along the northerly right-of-way of Brown Deer Road and crossing Port Washington Road and connecting into an existing pole at Station 630BDW+03, 30'LT. The overhead communication lines will be removed off of We Energies' poles.

River Hills, Village of – Sanitary has existing underground sanitary facilities within the project limits. Adjust and reconstruct manholes as shown in the plans and bid items.

Spectrum has existing overhead and underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the easterly project limits running westerly to Station 1221+80, 132'RT and turning northerly running along the easterly right-of-way of IH 43 to an existing We Energies pole at Station 1225+22, 132'RT. This existing line will remain in place without adjustment.
- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits running easterly along the northerly right-of-way of Brown Deer Road crossing IH 43 at Station 1252+89 and continuing along the northerly right-of-way of Brown Deer Road and crossing Port Washington Road to beyond the project limits.
    - Prior to construction Spectrum will construct new overhead wires on We Energies' poles beginning at an existing pole at Station 610BDW+02, 46'LT running easterly along the northerly right-of-way of Brown Deer Road crossing IH 43 at Station 1252+87 and continuing along the northerly right-of-way of Brown Deer Road and crossing Port Washington Road and connecting into an existing pole at Station 630BDW+03, 30'LT. The overhead communication lines will be removed off of We Energies' poles.
- An existing underground communication line beginning on the south side of Brown Deer Road at Station 626BDE+59, 87'RT and running northerly crossing Brown Deer Road to Station 628BDW+62, 30'LT where it turns and runs easterly along the sidewalk and curves around the corner and turns northerly to beyond the project limits.
    - Prior to construction Spectrum will relocate their facilities constructing a new underground communications line beginning at Station 626BDE+59, 87'RT and running northerly crossing Brown Deer Road to Station 628BDW+54, 27'LT where it turns and runs easterly along the sidewalk and splices into the existing underground line at Station 628BDW+22, 39'LT. The existing line from Station 626BDE+59, 87'RT to Station 628BDW+22, 39'LT will be discontinued in place.
- An existing overhead communication line on We Energies' poles beginning at a pole on the south side of Brown Deer Road at Station 629BDE+93, 77'RT running northwesterly crossing Brown Deer Road and Port Washington Road to an existing pole at Station 628BDW+16, 31'LT.
    - Prior to construction Spectrum will construct new overhead wires on We Energies' poles beginning at a new pole at Station 628BDW+00, 33'LT running southeasterly to the existing pole at Station 629BDE+93, 77'RT. The overhead communication lines will be removed off of We Energies' poles.
- An existing overhead communication line on We Energies' poles beginning at a pole on the north side of Brown Deer Road at Station 622BDW+05, 47'LT running northerly to beyond the project limits.
    - Prior to construction We Energies will construct a new pole at Station 622BDW+03, 60'LT. From there Spectrum will joint trench with We Energies along with a new underground electric line running northwesterly along the easterly right-of-way of IH 43 working its way through private easements to Station 1260+04, 151'RT. From there it will run northwesterly paralleling the easterly right-of-way of IH 43 in private easements to a new pole at Station 1280+33,125'RT. The overhead communication lines will be removed off of We Energies' poles from Station 622BDW+05, 47'LT running northerly.

- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits running easterly along the southerly right-of-way of Fairy Chasm Road and jogging northeasterly crossing IH 43 at Station 1279+49 to a pole at Station 1279+26, 96'RT and continuing to beyond the project limits.
    - Prior to construction Spectrum will construct new overhead wires on We Energies' poles beginning beyond the westerly project limits running easterly along the northerly right-of-way of Fairy Chasm Road crossing IH 43 at Station 1280+89 and continuing to beyond the project limits. The overhead communication lines will be removed off of We Energies' poles
    - Prior to construction Spectrum will construct new overhead wires on We Energies' poles beginning at an existing pole at Station 1279+71, 95'LT and running northwesterly along the existing westerly right-of-way of IH 43 to a new We Energies pole at Station 1281+32, 95'LT. The overhead communication lines will be removed off of We Energies' poles

We Energies – Electric has existing overhead and underground electric facilities in the following locations:

- An existing overhead electric line beginning beyond the westerly project limits running easterly along the north side of Bradley Road crossing IH 43 at Station 1198+54 and continuing to beyond the project limits.
    - Prior to construction We Energies will construct a new pole at Station 1198+55, 107'RT. The overhead electric lines will be removed off of the existing poles and transferred to the new poles.
- An existing underground electric service line beginning at a pole at Station 1198+55, 110'RT and running northerly to a WisDOT communication cabinet at Station 1199+20, 93'RT. This service line will be discontinued in place once the communication cabinet is taken out of service as part of the roadway contract.
- An existing underground electric line beginning at an existing pole at Station 1203+27, 99'LT and running northerly along the westerly right-of-way of IH 43 to Station 1214+27, 106'LT where it turns and runs westerly beyond the project limits. This line will remain in place without adjustment.
- An existing underground electric line beginning beyond the easterly project limits running westerly to Station 1221+58, 112'RT and turning northerly running along the easterly right-of-way of IH 43 to Station 1224+97, 110'RT where it turns and runs easterly beyond the project limits.
    - Prior to construction We Energies will discontinue this line in place.
- An existing overhead electric line beginning beyond the westerly project limits running easterly crossing IH 43 at Station 1227+14 and continuing to beyond the project limits.
    - Prior to construction We Energies will construct new poles at Station 1227+16, 100'LT and at Station 1227+16, 113'RT. The overhead electric lines will be removed off of the existing poles and transferred to the new poles.
- An existing overhead electric line beginning beyond the easterly project limits running both southeasterly, easterly, and northerly from a pole at Station 1239+78, 115'RT.
    - Prior to construction We Energies will construct a new pole at Station 1239+80, 114'RT and shorten up the guy anchors. The overhead electric lines will be removed off of the existing poles and transferred to the new poles.
- An existing overhead electric line beginning beyond the westerly project limits running easterly along the northerly right-of-way of Brown Deer Road crossing IH 43 at Station 1252+89 and continuing along the northerly right-of-way of Brown Deer Road and crossing Port Washington Road to beyond the project limits.
    - Prior to construction We Energies will construct new poles and overhead wires beginning at an existing pole at Station 610BDW+02, 46'LT running easterly along the northerly right-of-way of Brown Deer Road crossing IH 43 at Station 1252+87 and continuing along the northerly right-of-way of Brown Deer Road and crossing Port Washington Road and connecting into an existing pole at Station 630BDW+03, 30'LT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.

    - Prior to construction We Energies will construct new poles and overhead wires beginning at a new pole at Station 611BDW+69, 48'LT running southerly crossing Brown Deer Road to a new pole at Station 611BDE+87, 78'RT.

- An existing overhead electric line beginning at a pole on the south side of Brown Deer Road at Station 613BDE+27, 14'RT running northerly crossing Brown Deer Road and continuing along the existing westerly right-of-way of IH 43 past Fairy Chasm Road to beyond the project limits.
    - Prior to construction We Energies will construct a new underground electric line beginning at a new pole at Station 613BDW+09, 64'LT running westerly to Station 612BDW+59, 64'LT where it turns northerly running along the existing westerly right-of-way of IH 43 where it ties into an existing underground line at Station 1264+12, 108'LT. We Energies will remove the existing poles and wires from Station 613BDE+27, 14'RT to Station 1283+46, 91'LT. The poles and overhead wires from Station 1283+46, 91'LT running northerly will remain in place without adjustment.
- An existing underground electric line beginning at a pole at Station 613BDE+27, 14'RT and running southerly and southeasterly to beyond the project limits.
    - Prior to construction We Energies will construct a new underground line beginning at a new pole at Station 611BDE+87, 78'RT and running easterly and connecting into an existing underground line at Station 613BDE+68, 139'RT. The exiting line between Station 613BDE+27, 14'RT and Station 613BDE+68, 139'RT will be discontinued in place.
- An existing overhead electric line beginning at a pole on the south side of Brown Deer Road at Station 622BDE+83, 51'RT running northwesterly crossing Brown Deer Road to an existing pole at Station 622BDW+05, 47'LT.
    - Prior to construction We Energies will remove the existing poles and wires from Station 622BDE+83, 51'RT to Station 622BDW+05, 47'LT.
- An existing overhead electric line beginning at a pole on the north side of Brown Deer Road at Station 622BDW+05, 47'LT running northerly to beyond the project limits.
    - Prior to construction We Energies will construct a new pole at Station 622BDW+03, 60'LT. From there they will construct a new underground electric line running northwesterly along the easterly right-of-way of IH 43 working its way through private easements to Station 1260+04, 151'RT. From there it will run northwesterly paralleling the easterly right-of-way of IH 43 in private easements to a new pole at Station 1279+63, 125'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed from Station 622BDW+05, 47'LT running northerly.
- An existing underground electric line beginning at a pole at Station 622BDE+83, 51'RT and running southeasterly and southerly along the easterly right-of-way of IH 43 to beyond the project limits. This line will remain in place without adjustment.
- An existing overhead electric line beginning at a pole on the south side of Brown Deer Road at Station 623BDE+03, 55'RT running northeasterly crossing Brown Deer Road to an existing pole at Station 624BDW+05, 39'LT.
    - Prior to construction We Energies will construct a new pole at Station 622BDE+80, 65'RT and new wires running northeasterly crossing Brown Deer Road to a new pole at Station 624BDW+08, 37'LT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing underground electric line beginning at a pole at Station 623BDE+03, 55'RT and running easterly along the southerly right-of-way of Brown Deer Road and terminating at an existing signal cabinet located at Station 628BDE+36, 58'RT. This line will remain in place without adjustment.
    - Prior to construction We Energies will construct a new transformer located at Station 624BDE+41, 53'RT and remove the existing transformer at Station 624BDE+41, 57'RT.
- An existing overhead electric line beginning at a pole on the south side of Brown Deer Road at Station 629BDE+93, 77'RT running northwesterly crossing Brown Deer Road and Port Washington Road to an existing pole at Station 628BDW+16, 31'LT.

    - Prior to construction We Energies will construct a new pole at Station 628BDW+00, 33'LT and new wires running southeasterly to the existing pole at Station 629BDE+93, 77'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.

- An existing underground electric line beginning at an existing pole at Station 1265+18, 97'LT and running southeasterly to Station 1264+12, 108'LT where it turns westerly to beyond the project limits.
    - Prior to construction We Energies will discontinue in place the existing line between Station 1265+18, 97'LT and Station 1264+12, 108'LT. The existing line running westerly from Station 1264+12, 108'LT will remain in place without adjustment.
- An existing overhead electric line beginning at an existing pole at Station 1268+86, 97'LT running northeasterly crossing IH 43 to an existing pole at Station 1269+42, 101'RT.
    - Prior to construction the overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing underground electric line beginning at an existing pole at Station 1269+42, 101'RT and running northwesterly along the easterly right-of-way of IH 43 in a private easement to Station 1272+42, 121'RT where it turns easterly to beyond the project limits.
    - Prior to construction We Energies will discontinue this existing line in place.
- An existing overhead electric line beginning beyond the westerly project limits running easterly along the southerly right-of-way of Fairy Chasm Road and jogging northeasterly crossing IH 43 at Station 1279+49 to a pole at Station 1279+26, 96'RT and continuing to beyond the project limits.
    - Prior to construction We Energies will construct new poles and overhead wires beginning beyond the westerly project limits running easterly along the northerly right-of-way of Fairy Chasm Road crossing IH 43 at Station 1280+89 and continuing to beyond the project limits. The overhead electric lines will be removed off of the existing poles and the poles will be removed.
- An existing overhead electric line beginning at a pole at Station 1279+26, 96'RT running northerly along the easterly right-of-way of IH 43 to a pole at Station 1283+26, 117'RT and continuing to beyond the project limits.
    - Prior to construction We Energies will construct new poles and overhead wires between two new poles at Station 1279+63, 125'RT and 1280+68, 125'RT. From there they will construct a new underground electric line running northerly along the easterly right-of-way of IH 43 and connect into an existing line at Station 1283+37, 124'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed.

We Energies – Gas has existing underground gas facilities in the following locations:

- An existing underground gas main beginning at Station 1214+32, 148'LT running northerly along the west side of Pheasant Lane crossing under Indian Creek and continuing to Station 1224+54, 148'LT where it tees into an existing main.
    - Prior to construction We Energies will construct a new gas main beginning at Station 1214+53, 170'LT and running northerly and crossing under Indian Creek and continuing to Station 1217+48, 170' LT where it turns northeasterly and tying into the existing main at Station 1217+69, 148' RT. The existing underground gas line from Station 1214+32, 148'LT to Station 1217+69, 148' RT will be discontinued in place.
- An existing underground gas main beginning beyond the westerly project limits running easterly along the south side of Dean Road crossing IH 43 at Station 1224+56 and continuing to beyond the project limits.
    - Prior to construction We Energies will discontinue the existing line in place.

- An existing underground gas main beginning beyond the westerly project limits running easterly along the northerly curb line of Brown Deer Road to Station 612BDW+80, 30'LT where it turns northeasterly to Station 613BDW+25, 75'LT. From there it turns and runs easterly crossing IH 43 at Station 1252+82 to Station 623BDW+34, 32'LT and jogging southerly to Station 623BDW+34, 15'LT and then turning easterly along the northerly curb line of Brown Deer Road and crossing Port Washington Road to beyond the project limits.
    - Prior to construction We Energies will construct a new gas main beginning at Station 622BDW+40, 31'LT and running southerly to Station 622BDW+40, 4'LT where it turns easterly to Station 629BDW+03, 0'LT. From there it turns northerly and tying into the existing main at Station 629BDW+03, 9'LT. The existing underground gas line from Station 622BDW+40, 4'LT to Station 629BDW+03, 9'LT will be discontinued in place.
- An existing underground gas main beginning at a tee at Station 623BDW+53, 15'LT running southerly crossing Brown Deer Road to beyond the project limits.
    - Prior to construction We Energies will construct a new gas main beginning at a tee Station 623BDW+21, 8'LT and running southerly crossing Brown Deer Road to beyond the project limits. The existing underground gas line from Station 623BDW+53, 15'LT running southerly will be discontinued in place.
- An existing underground gas main beginning at a tee at Station 627BDW+93, 5'LT running northerly to Station 627BDW+93, 20'LT and turning northeasterly to beyond the project limits.
    - Prior to construction We Energies will construct a new gas main beginning at a tee Station 627BDW+84, 0'LT and running northerly to Station 627BDW+84, 20'LT and turning easterly tying into the existing main at Station 627BDW+93, 20'LT. The existing underground gas line from Station 627BDW+93, 5'LT to Station 627BDW+93, 20'LT will be discontinued in place.
- An existing underground gas main beginning at a tee at Station 627BDW+96, 5'LT running southerly crossing Brown Deer Road to Station 627BDE+96, 55'RT and turning easterly to Station 628BDE+88, 55'RT where it turns and runs southerly to beyond the project limits.
    - Prior to construction We Energies will construct a new gas main beginning at a tee Station 627BDW+90, 0'LT and running southerly to Station 627BDE+90, 55'RT and turning easterly tying into the existing main at Station 627BDE+96, 55'RT. The existing underground gas line from Station 627BDW+96, 5'LT to Station 627BDE+96, 55'RT will be discontinued in place.
- An existing underground gas main beginning beyond the westerly project limits running easterly along the south side of Fairy Chasm Road crossing IH 43 at Station 1280+20 and continuing to beyond the project limits.
    - Prior to construction We Energies will construct a new gas main beginning at Station 1280+52, 100' LT and running southerly to Station 1280+47, 102' LT where it turns easterly crossing IH 43 at Station 1280+06 and continuing to Station 1279+52, 135' RT. From there it turns northerly and tying into the existing main at Station 1279+62, 139' RT. The existing underground gas line from Station 1280+52, 100' LT to Station 1279+62, 139' RT will be discontinued in place.

We Energies – Gas has existing discontinued underground gas facilities in the following locations:

- An existing discontinued underground gas main beginning at Station 606BDW+49, 21'RT running easterly to Station 611BDW+37, 17'RT where it turns northeasterly to Station 611BDW+53, 8'LT. From there it turns and runs easterly crossing IH 43 at Station 1252+25 to Station 623BDW+29, 15'LT.
- An existing discontinued underground gas main beginning at Station 606BDW+49, 37'LT running easterly to Station 606BDE+49, 43'RT.

WisDOT has existing communications facilities within the project limits. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of communication facilities as shown in the plans and bid items.

WisDOT has existing light poles and associated underground electric lighting facilities within the project limits. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of lighting facilities as shown in the plans and bid items.

WisDOT has existing traffic signal facilities within the project limits. Construct, reconstruct, relocate, remove, discontinue and leave in place portions of traffic signal facilities as shown in the plans and bid items.

1229-04-77: Green Bay Road & Range Line Road Intersection

AT&T Wisconsin has existing overhead communications facilities in the following locations:

- An existing overhead communication line on We Energies' poles beginning beyond the southeasterly project limits running northwesterly along the existing northerly right-of-way of Green Bay Road where it turns northerly running along the easterly right-of-way of Range Line Road and continuing to beyond the project limits. This line will remain in place without adjustment.

Everstream has existing underground communications facilities in the following locations:

- An existing underground communication line beginning beyond the southerly project limits running along the east side of Range Line Road to a handhole located at Station 204+03, 25'RT where it turns northeasterly crossing Green Bay Road to Station 605+27, 50'RT. From there it turns northwesterly running along the northerly right-of-way of Green Bay Road where it turns northerly running along the easterly right-of-way of Range Line Road and continuing to beyond the project limits. This line will remain in place without adjustment.

Glendale, City of – Sewer has existing underground sanitary facilities within the project limits. Adjust and reconstruct manholes as shown in the plans and bid items.

Glendale, City of – Water has existing underground water facilities within the project limits. Adjust water valves as shown in the plans and bid items.

Level 3 Communications leases existing overhead communications facilities from Spectrum as described in the Spectrum section below. Prior to construction Spectrum will relocate their own facilities and Level 3 Communications' leased wires as described in the Spectrum section below. The remainder of the line will remain in place without adjustment.

Spectrum has existing overhead communications facilities in the following locations:

- An existing overhead communication line on We Energies' poles as described in the We Energies – Electric section below.
    - Prior to construction Spectrum will transfer their overhead wires to the new We Energies' pole at Station 605+41, 43'LT. The remainder of the line will remain in place without adjustment.

We Energies – Electric has existing overhead and underground electric facilities in the following locations:

- An existing underground electric line beginning beyond the southerly limits running along the westerly right-of-way of Range Line Road to the southwest corner of the intersection where it turns northwesterly running along the southerly right-of-way of Green Bay Road where it turns northeasterly crossing Green Bay Road at Station 608+00 to the north side of Green Bay Road where it turns northwesterly along the northerly right-of-way of Green Bay Road and continues to beyond the project limits. This line will remain in place without adjustment.

- An existing overhead electric line beginning beyond the southeasterly project limits running northwesterly along the existing south side of Green Bay Road to a pole at Station 607+01, 31'LT where it turns northwesterly crossing Green Bay Road to a pole at Station 608+27, 28'RT. From there it turns northwesterly running along the northerly right-of-way of Green Bay Road and continues to beyond the project limits.
    - Prior to construction We Energies will remove the existing pole at Station 605+45, 36'LT and install a new pole at Station 605+41, 43'LT and transfer the overhead wires to the new pole. The remainder of the line will remain in place without adjustment.

We Energies – Gas has existing underground gas facilities in the following locations:

- An existing underground gas line beginning beyond the southeasterly project limits running northwesterly along the existing south side of Green Bay Road to Station 605+65, 23'LT where it turns northeasterly crossing Green Bay Road to Station 605+65, 48'RT. From there it turns northwesterly running to Station 606+70, 48'RT where it turns northerly running along the east side of Range Line Road and continuing to beyond the project limits.
    - Prior to construction We Energies - Gas will relocate their facilities beginning at Station 602+39, 23'LT running southwesterly to Station 602+39, 50'LT where it turns and runs northwesterly along the southerly right-of-way of Green Bay Road and crossing Range Line Road to Station 205+32, 23'LT. From there it turns northerly crossing Green Bay Road at Station 607+07 and continues northerly along the west side of Range Line Road to beyond the project limits.

WisDOT does not have existing traffic signal facilities within the project limits but will be constructing new traffic signals at the intersection of Green Bay Road and Range Line Road as part of this project. Construct new traffic signal facilities as shown in the plans and bid items.

10. Other Contracts.

The following contracts are anticipated to be under construction within the time period of this contract, unless otherwise indicated. Coordinate work according to standard spec 105.5.

2023

I-43 N-S Freeway Mainline Construction:

- ID 1228-22-71, Capitol Drive to 2100 Feet N of Hampton Avenue, Milwaukee County
- ID 1229-04-74, I-43 W County Line Road Interchange, Milwaukee and Ozaukee Counties
- ID 1229-04-76, I-43 Highland Road to STH 60, Ozaukee County

Other Projects:

- ID 2270-04-70, STH 57, Ozaukee County
- ID 2565-02-71, STH 57/CTH PP, Milwaukee County

2023 - 2024

I-43 N-S Freeway Mainline Construction:

- ID 1228-22-70, Brown Street to Capitol Drive, Milwaukee County
- ID 1229-04-75, I-43 Mequon Road Interchange, Ozaukee County

Other Projects:

- Jean Nicolet High School Athletic Complex

11. Work by Others.

On Brown Deer Road, the Village of Bayside will perform the following work:

- Removal of existing landscaping from median planters.

On Port Washington Road, the City of Glendale will perform the following work:

- Install landscaping and fence behind the sidewalk at the relocation parcels in the Mt Royal neighborhood.

12. Available Documents.

The department will make its information available to bidding contractors. The list of documents that are available for contractors' information includes:

- Design Study Report
- Environmental Document
- Traffic Management Plan

These documents are available from WisDOT Project Manager Steve Hoff at 141 NW Barstow Street, Waukesha, WI 53187, (262) 548-6718, steve.hoff@dot.wi.gov.

Reproduction costs will be applied to all copies requested.

sef-102-005 (20170310)

13. Geotechnical Investigation Information.

Replace standard spec 102.5(3) 2 with the following:

Available information relative to subsurface exploration, borings, soundings, water levels, elevations, or profiles are available for review at the Department's Southeast Region office. Contact Steve Hoff at 141 NW Barstow Street, Waukesha, WI 53187, (262) 548-6718, steve.hoff@dot.wi.gov.

Geotechnical Report for IH 43 - Silver Spring to CTH Q

Geotechnical Report for IH 43 – Milwaukee County Line to STH 60

Geotechnical Exploration and Analysis Report WisDOT Structure ID B-40-921, UPRR over I-43, July 7, 2022.

Geotechnical Exploration and Analysis Report WisDOT Structure ID R-40-649, UPRR Over I-43, July 7, 2022.

Geotechnical Exploration and Analysis Report UPRR Embankments I-43 North-South Freeway, Milwaukee County, Wisconsin, May 18, 2022.

Additional geotechnical information is available from studies, analyses and reports (a sample of which is listed above) that have been performed for the Wisconsin Department of Transportation (WisDOT) for other aspects of this project. Review the available information to determine if it is of use. The use or not of the geotechnical information does not relieve performing the work conforming to the plans and specifications.

sef-102-010 (20170310)

14. Contract Award and Execution.

Add the following to standard spec 103 as subsections 103.9 and 103.10:

103.9 Bid Escrow Documentation

(1) The department will require the lowest responsible bidder to submit documentation to be placed in escrow at a document storage facility. Bid Escrow Documentation (BED) consists of writings, working papers, computer printouts, charts, and data compilations that contain or reflect information, data, calculations, or assumptions used by the bidder to determine the proposal submitted. If the apparent low bid is withdrawn or rejected, the second low bidder will provide the required documents as specified in this special provision within 72 hours of written notification by the department.

(2) The BED shall clearly itemize the contractor's estimated costs of performing the scope of work defined in the contract.

(3) The BED shall include, but not be limited to, all quantity takeoffs, rate schedules for the direct costs of craft labor, construction (expendable materials), construction equipment ownership costs, construction equipment operating costs, permanent materials, subcontractors and insurance. Also include development of rates of production including, where appropriate: estimate of crews, construction materials, construction equipment, and construction sequence and duration. Submit the BED for each subcontractor whose total subcontract costs exceed $500,000.

(4) Identify the allocation of construction plant and equipment, time and non-time related indirect costs (including if applicable joint venture fees), home office overhead, contingencies and margin applicable to each bid item. Further, documentation shall include consultant's reports, final estimate adjustment calculations, and all other information used by bidders to arrive at the estimate.

(5) All manuals standard to the industry used by the bidder in determining the proposal are also considered part of the BED. These manuals may be included in the proposal documentation by reference and shall show the name and date of the publication and the publisher.

(6) It is not necessary to include documents provided by the department for the bidder's use in the preparation of the proposal.

(7) The low bidder shall present authentic copies of their BED at the department's office by October 14, 2022 (subject to change) 72 hours/3 days after let, at 10:00 AM.

(8) At the time of submittal, designated representatives of the apparent low bidder and the department will jointly examine the apparent low bidder's bid documentation to determine if it is authentic, legible, and generally meets the requirements of this special provision. The department will not share the BED information with, or in any other way divulge the contents of, the apparent low bidder's BED to, their subcontractors or any other party.

(9) The department will also independently examine the BED submitted by the apparent low bidder's subcontractors in the same manner as the apparent low bidder's BED was examined. Only designated representatives of the individual subcontractor and the department will be present during this examination. The department will not share the BED information with, or in any other way divulge the contents of, a subcontractor's BED to, the apparent low bidder or any other party.

(10) The department's examination of the BED will not include review of, nor will it constitute approval of, proposed construction methods, estimating assumptions, or interpretation of the contract. The examination will not alter any conditions or terms of the contract. The department will determine if the BED complies with this special provision within 4 hours after the time the BED is submitted. If the BED does not meet the requirements of this special provision, the department may reject the bid.

(11) If the BED of the apparent low bidder meets the requirements of this special provision, the department and bidder will jointly deposit the BED at an agreed document storage facility. Place the BED in a sealed envelope or container clearly marked with the bidder's name and address, date of submittal, project name and identification number. Representatives of the department and the bidder will deliver all bid escrow documentation and the original affidavit directly to a document storage facility, to be placed in escrow.

(12) If the apparent low bid is withdrawn or rejected, the designated representative of the second low bidder and the department will examine and inventory the bid documentation of the second low bidder and their subcontractors in the manner specified in this section, then seal and deposit in escrow. If a subcontractor with a subcontract exceeding $500,000 is replaced, the contractor shall submit new BED for examination and escrow before the engineer will authorize the substitution.

(13) The department will pay for the costs of the escrow document storage facility and will provide escrow instructions to the document facility consistent with this special provision.

(14) The department acknowledges that the bidder considers that the BED constitutes trade secrets or proprietary information. This acknowledgment is based upon department's understanding that the information contained in the BED is not known outside each bidder's business, is known only to a limited extent and by a limited number of employees of bidder, is safeguarded while in bidder's possession, and may be valuable to bidder's construction strategies, assumptions and intended means, methods and techniques of design and construction. Except as set forth in the contract or as required by applicable Law, the department acknowledges that the BED will always remain in the possession of the Escrow Agent and will at no time be received by, or become the property of, the department.

(15) Submit a copy of the affidavit in this special provision, signed under oath before a Notary Public by a representative of the bidder authorized to execute proposals. Department representatives will sign the affidavit after reviewing the BED.

(16) The BED will remain in escrow until one or more of the following occurs:

1. The bidder and the department mutually agree to release of the BED;
2. A court orders the department to provide the BED;
3. A dispute is referred to the Dispute Review Board or claims review panel; or
4. Either party seeks judicial review of a dispute.

(17) If any of the events numbered 1-4 in this section occurs, the department will take possession of all relevant portions of the BED, as determined by the department, until complete resolution of the issue for which the request was made or the court order was issued. In absence of these actions, and provided the bidder signs an appropriate release, the unopened BED will be released to the bidder upon final acceptance and the expiration of all warranty periods provided by this contract.

BID ESCROW DOCUMENTATION CERTIFICATION

Using this BID ESCROW DOCUMENTATION CERTIFICATION, the bidder certifies that the material submitted in this special provision constitutes all the documentary information used in preparation of the bid and that said bidder has fully examined the contents of the container and that they are complete. The undersigned Wisconsin Department of Transportation representatives have reviewed the BED for compliance.

BIDDER

_____
(Name of Bidder)

By: _____
(Signature*)

Title _____

Date _____

WITNESS

_____
(Name of Witness)

By: _____
(Signature*)

Date: _____

WISCONSIN DOT

_____
(Name of Department Representative)

By: _____
(Signature*)

Title _____

Date _____

WISCONSIN DOT

_____
(Name of Department Representative)

By: _____
(Signature*)

Title:_____

Date: _____

(END OF BID ESCROW DOCUMENTS)

103.10 Mobilization Workshops

103.10.1 Workshop Schedule

(1) After contract award, attend the following workshops. Each workshop is described within this special provision and will include the following topics:

1. Project Kickoff and Initial Work Plan
2. Cost Reduction Incentives
3. Utility Coordination
4. Submittals
5. CPM Scheduling
6. Leadership Partnering (Initial Session)
7. Secant Pile Drilled Shaft Construction
8. Work Force Opportunities
9. Incident Crisis Communications Plan
10. Notice to Proceed

(2) The workshop dates will be scheduled after contract award.

(3) If necessary, the engineer may modify the workshop schedule to ensure attendance by the necessary department and contractor personnel; however, all workshops will be completed before issuing the Notice to Proceed.

103.10.2 Workshops

103.10.2.1 Project Kickoff and Initial Work Plan

103.10.2.1.1 General

(1) The Project Kickoff and Initial Work Plan Workshop will provide a forum to discuss and answer questions relative to the proposal, bid schedule, and other questions in the Project Questionnaire described in section 103.10.2.1.2. The Initial Work Plan Workshop will include:

1. Contractor responses to the attached Project Questionnaire.
2. Department presentation of the use of CPM scheduling on the project and presentation of the department's Master Schedule to the contractor.
3. Contractor presentation of its conceptual work plan for the project.
4. Department and contractor discussion of the level of detail and features in the Initial Work Plan and the Baseline CPM Progress Schedule.

103.10.2.1.2 Project Questionnaire

(1) Provide the following information in the order shown in this special provision. This information will constitute the "Project Questionnaire."

General Information

If a Joint Venture, provide information for each member of the Joint Venture.

Provide the following information about the company:

Firm Name

Address

Telephone and facsimile numbers; e-mail address

Contracting Specialties

Years performing work in contracting specialties

Geographic areas served

Total Management Employees and years of service

Project Managers

General Superintendents

Craft Superintendents

Engineers

Estimators

CPM Schedulers

Construction Engineering

Provide/attach a copy of your Construction Project Manager's resume indicating the manager's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).

Provide (if applicable) your third-party construction engineering firms.

Provide plan for Construction surveying

Subcontractors

Attach the list of all subcontractors that are intended for this Project and the items of work they shall perform.

Permanent Material Suppliers

Attach the list of all permanent material suppliers that are intended for the project.

Quality Control (where applicable)

Provide the name of your Construction Quality Control firm and qualifications indicating the firms' experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).

Provide/attach a copy of your Construction Quality Control Manager's resume indicating the manager's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).

List the major elements and Table of Contents of your Construction Quality Management Program (QMP).

Provide the name of your Independent Quality Control Testing firm (Construction Quality Control Lab) and qualifications indicating the firm's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).

Organization Chart

Provide a functional and personnel Organization Chart showing the authority and responsibilities of each individual identified.

Work Rules

Provide the plan for hours per day, days per week, and number of shifts for key elements of work; i.e. sewer tunnels, retaining wall construction, roadway excavation, bridge structures, and roadway structural section activities.

Maintenance of Traffic

Provide the name of your Traffic Control Manager and qualifications indicating the firm's experience in similar major construction projects. The resume shall include similar projects with references. (Note: references are only for verification of work scope performed).

Include an outline of your approach to the maintenance of traffic and how you shall stage the construction to meet the substantial completion schedule including planned locations for local street and freeway access into and out of the work zones for each stage of construction.

Attach a copy of your Preliminary Schedule indicating your approach to achieving the substantial completion schedule.

Construction

Provide the approach (type of equipment, number of crews, and where required ground support systems) for the following activities.

1. Retaining wall construction by type of work
2. Bridge demolition
3. Roadway structural section
4. Roadway excavation
5. Office and yard facilities

103.10.2.2 Cost Reduction Incentives

(1) The Cost Reduction workshop will identify value enhancing opportunities and consider modifications to the plans and specifications that will reduce either the total cost, time of construction, or traffic congestion. These modifications shall not impair the essential functions or characteristics of the project. These include:

Service life

Economy of operation

Ease of maintenance

Benefits to the traveling public

Desired appearance

Design and safety standards

(2) Submit recommendations resulting from the workshop for approval by the engineer as cost reduction incentive proposals in conformance with standard spec 104.10 "Cost Reduction Incentive".

(3) The department and the contractor may be able to complete the CRI Concept process, as specified in 104.10.2, during the CRI workshop.

(4) Submit CRIs after the CRI workshop that were not introduced at the CRI workshop.

103.10.2.3 Utility Coordination

(1) The Utility Coordination Workshop will define the scope and schedule of utility relocation work and the corresponding roles and responsibilities of the project team.

1. At a minimum, the following key personnel will attend the Utility Coordination Meeting.
    1.1. Department's Utility Coordinator.
    1.2. Contractor's Utility Coordinator.
    1.3. Designer Team's Utility Coordinator.
    1.4. Key Utility Company Representative(s)

2. At a minimum, the Utility Coordination Meeting will include a review of the following:
    2.1. Summary of all required utility relocations on the project.
    2.2. Special provisions addressing utility work.
    2.3. Sharing of contact information.
    2.4. Scheduling of work for utility relocation including critical milestones and staging for the work.

103.10.2.4 Submittals

(1) The Submittal Workshop will identify the key required submittals for the project, categorize submittals into functional areas, and develop a schedule for submittals and submittal reviews. The Workshop participants will at a minimum:

1. Review the project special provisions.
2. Categorize submittals into functional areas including:
    2.1 MSE Retaining Walls
    2.2 Temporary Shoring
    2.3 Falsework and Formwork
    2.4 Girder Shop Drawings
    2.5 Steel Transportation, Delivery and Erection
    2.6 Structure Demolition Plans
    2.7 Pile Hammers and High Capacity Piling
    2.8 Concrete/ Asphalt
    2.9 Materials
    2.10 ITS / Lighting
    2.11 Traffic Signals
    2.12 Sanitary Sewer and Water
    2.13 Permits
3. Develop a schedule for submittals.

103.10.2.5 CPM Schedule

See specification Baseline CPM Progress Schedule.

103.10.2.6 Leadership Partnering Meetings Monthly

The department will implement mandatory monthly leadership partnering meetings. Unless the department and contractor agree otherwise, the contractor management level personnel, project design engineers, project level supervisory personnel, and department management level personal shall meet monthly from project start until the contractor accepts the tentative final estimate. The contractor and department may also invite the following as needed:

- FHWA
- Key project personnel of the contractor’s principal subcontractors and suppliers
- Local government representatives
- Environmental regulators
- Emergency service personnel
- Utility companies
- Impacted business and property owners
- Other stakeholders

This meeting will facilitate a cooperative team environment that clearly defines roles and responsibilities, determines common goals and objectives, and provides a platform to build trust and accountability. Meeting topics may include:

- Issue and risk management
- Dispute resolution procedures
- Safety
- Public outreach
- Traffic management
- Cost reducing incentives

- Claim resolution
- Scheduling issues
- Quality control

All mobilization workshop costs are incidental to the contract work.

sef-108-030 (20171004)

103.10.2.7 Secant Pile Drilled Shaft Construction

(1) The Secant Pile Drilled Shaft Construction workshop will serve as a pre-construction kickoff meeting specifically for the secant pile drilled shaft work and occur before all secant pile work being performed on the job, including the installation of the secant pile trial wall panel. The workshop must be attended by representatives of the prime contractor and key members of the prequalified drilling shaft subcontractor performing the secant pile installation. At minimum, key members of the drilling subcontractor includes on-site principal in charge, on-site construction supervisor and crew foremen.

(2) The workshop agenda will include review and discussion of the drilling subcontractors submitted drilled shaft installation plan; scheduling and coordination of the secant pile drilled shaft installation work; mobilization and preparation; and subsequent work operations associated with the construction.

103.10.2.8 Storm Sewer Tunneling

(1) The Storm Sewer Tunneling workshop will focus on the installation plan, access, material storage, scheduling, dewatering, shoring, maintaining existing drainage, erosion control, and subsequent work operations associated with the construction.

103.10.2.9 Work Force Opportunities

After contract award, attend the Work Force Opportunities workshop. The workshop will take place on the same day and in the same location as the pre-construction meeting.

The Work Force Opportunities workshop will provide a venue for contractors to have meaningful dialogue with Transportation Alliance for New Solutions (TrANS) providers regarding the hiring of TrANS graduates. Reference ASP-1 for additional information regarding TrANS. The prime contractor and the nine largest subcontractors according to let value of work shall provide staff with hiring authority to participate in a job-matching session during this workshop. Workshop participants will, at a minimum:

- Review contractor hiring processes for general labor positions.
- Listen to a presentation provided by TrANS providers regarding the TrANS training program, including details regarding how contractors can hire TrANS graduates.
- Review TrANS graduate availability for working on the project.
- Meet one-on-one for two minutes with each TrANS graduate in attendance at the meeting.

sef-108-036 (20180627)

103.10.2.10 Incident Crisis Communications Plan

(1) The Incident Crisis Communications Plan workshop will include a "dry run" of the Crisis Communication Plan to coordinate the response to an incident within the work zone or on the freeway by the contractor, Police, Fire, EMS and other responders. Ensure that representatives of subcontractors also participate in this meeting if requested by the engineer

103.10.2.11 Notice to Proceed

(1) After all workshops are completed, the Notice to Proceed will be issued.

sef-103-005 (20180104)

15. Contractor Notification.

Replace standard spec 104.2.2.2(2) with the following:

(2) If the contractor discovers a differing condition, provide a written notice, of the specific differing condition before further disturbing the site and before further performing the affected work.

Replace standard spec 104.3.2 with the following:

104.3.2 Contractor Initial Written Notice

(1) If required by standard spec 104.2, or if the contractor believes that the department's action, the department's lack of action, or some other situation results in or necessitates a contract revision, the contractor must promptly provide a written notification to the engineer. At a minimum, provide the following:

1. A written description of the nature of the issue.
2. The time and date of discovering the problem or issue.
3. If appropriate, the location of the issue.

(2) Provide the additional information as specified in standard spec 104.3.3 to assist the engineer in the timely resolution of an identified issue. The engineer will not require, in subsequent submissions, duplication of information already provided.

16. Eliminated Work.

Replace standard spec 104.2.2.5 with the following:

104.2.2.5 Change Orders for Eliminated Work

(1) The department has the right to partially eliminate or completely eliminate work the engineer finds to be unnecessary for the project. If the department eliminates work, the engineer will send a Work Authorization Form (WAF) directing the contractor to eliminate the work. If the engineer partially eliminates or completely eliminates work, the engineer will issue a contract change order for a fair and equitable amount as specified in standard spec 109.5.

(2) If the department executes an equalizing change order for the purpose of matching the authorized quantity to the amount of units measured and paid for any bid item, this shall not be considered eliminated work.

Replace standard spec 109.5 with the following:

109.5 Eliminated Work

(1) If the department partially eliminates or completely eliminates work as specified in standard spec 104.2.2.5, the department will pay the direct costs incurred as of the date the work was eliminated. The department will not pay for bidding costs or other non-allowable charges specified in standard spec 109.4.6.

(2) The department may pay for, and take ownership of, materials or supplies the contractor has already purchased.

(3) Submit a certified statement, including paid invoices, covering all direct costs, incurred as of the date the work was eliminated. The department will execute a change order as follows:

1. For incurred direct costs that have no value to other contract work, the department will reimburse the contractor in full for those costs.
2. For incurred direct costs that are distributed over the other contract work, the department will prorate reimbursement based on the value of the eliminated work compared to the total value of associated contract work.
3. Restocking and cancellation charges.
4. A markup for unrecoverable overhead paid as 7 percent of the contract price of the work eliminated, except for the items in noted in 109.5*(3)5*. The engineer will issue a contract change order based on the net value of the eliminated work and any replacement work included in the change order.
5. If the following bid items are not used at all for the prosecution of the work, the department will eliminate them with a WAF and a contract change modification. A markup for applicable overhead and other indirect costs will be paid as 2 percent of the contract price of the bid item for the work eliminated:

- 390.0203 Base Patching Asphalt
- 450.1100.S Asphaltic Mixture for Extreme Conditions
- 495.1000.S Cold Patch
- 501.1000.S Ice Hot Weather Concreting
- SPV.0060.0120 Mobilizations Emergency Pavement Repair
- SPV.0060.0940 Emergency Response to Traffic Incident Involving Concrete Barrier Temporary
- SPV.0060.0945 Emergency Response to Traffic Incident Involving Crash Cushions
- SPV.0195.0001 HMA Longitudinal Joint Repair
- SPV.0195.0002 HMA Transverse Joint Repair

17. Municipality Acceptance of Water Main Construction.

Both the department and the City of Glendale personnel will inspect the construction of water main items under this contract. Final acceptance of the water main construction will be by the City of Glendale.

18. Municipality Acceptance of Sanitary Sewer Construction.

Both the department and the City of Glendale personnel will inspect the construction of sanitary sewer items located in the City of Glendale under this contract. Final acceptance of the sanitary sewer construction will be by the City of Glendale.

Both the department and the Village of River Hills personnel will inspect the construction of sanitary sewer items located in the Village of River Hills under this contract. Final acceptance of the sanitary sewer construction will be by the Village of River Hills.

Both the department and the Village of Bayside personnel will inspect the construction of sanitary sewer items located in the Village of Bayside under this contract. Final acceptance of the sanitary sewer construction will be by the Village of Bayside.

19. Contractor Document Submittals.

This special provision describes minimum requirements for submitting project documents to the department. This special provision does not apply to shop drawing submittals.

Provide one electronic copy of all documents requiring department review, acceptance, or approval. Attach a completed engineer-provided transmittal sheet to each email submittal. The department will reject submittals with incomplete transmittal sheets and require re-submittal.

The department will return one reviewed, accepted, or approved original to the contractor. Additional return originals can be requested. Submit an additional original for each additional return original requested.

Submit electronic copies in PDF format via email to accounts the engineer determines. If possible, create PDFs from original documents in their native format (e.g., Word, Excel, AutoCAD, etc.). Scan other documents to PDF format with a minimum resolution of 600 dpi.

All costs for contractor document submittals are incidental to the contract.

sef-105-010 (20150619)

20. Hauling Restrictions.

Replace standard spec 107.2 with the following:

(1) Present to the department, five business days before proposed hauling, a proposed haul route plan detailing haul routes that are not part of the state trunk highway system. Include the months, days of the week, time of day, number of trucks, types of trucks and maximum loads of trucks anticipated to accomplish the project work in the haul route submittal.

(2) The department will review the submittal and provide a letter identifying any areas of concern along the route within five business days of its receipt. The department will subsequently survey the existing condition of that haul route to establish a baseline for assessing damage that the contractor's hauling operations might cause.

(3) At all times, conduct operations in a manner that will cause a minimum of disruption to traffic on existing roadways.

~~sef-107-015 (20170310)~~

21. Railroad Insurance and Coordination - Union Pacific Railroad Company.

A. Description

Comply with standard spec 107.17 for all work affecting Union Pacific Railroad Company property and any existing tracks.

A.1 Railroad Insurance Requirements

In addition to standard spec 107.26, provide railroad protective liability insurance coverage as specified in standard spec 107.17.3. Insurance is filed in the name of Union Pacific Railroad Company.

Notify evidence of the required coverage, and duration to David C. LaPlante, Senior Manager-Real Estate-Special and Public Projects, 1400 Douglas St. STOP 1690, Omaha, NE 68179; Telephone: (402) 544-8563; E-mail: dclaplante@up.com.

Also send a copy to the following: Jason Kazmierski, SE Region Railroad Coordinator, 141 N. Barstow Street, Waukesha, WI 53188; Telephone (262)548-6700; E-mail jason.kazmierski@dot.wi.gov.

Include the following information on the insurance document:

- Project ID: 1229-04-71, 1229-04-72, 1229-04-73
- Project Location: Glendale, Wisconsin
- Route Name: I-43, Milwaukee County
- Crossing ID: 180101F
- Railroad Subdivision: Shoreline Subdivision
- Railroad Milepost: 0104.090
- Work Performed on or within 50’ of RR ROW: Excavation, pavement removal, storm sewer removal and installation, placement of base material and new pavement construction. Retaining wall construction. Replacement of an existing underpass, new bridge, offset alignment of bridge and track, and replace track.

A.2 Train Operation

Approximately 2 through freight trains operate daily at up to 25 mph. No switching movements.

A.3 Names and Addresses of Railroad Representatives for Consultation and Coordination

Construction Contact

Chris T. Keckeisen, Manager Special Projects - Industry & Public Projects Engineering Department; 1400 Douglas, MS 0910, Omaha, NE, 68179; Telephone (402) 5445131; E-mail ctkeckei@up.com or Richard Ellison, Project coordinator, 207 Powell Avenue, Labadie, MO, 63055; Telephone (847) 323-7197; E-mail richardellison@up.com for consultation on railroad requirements during construction.

Amend standard spec 108.4 to include the railroad in the distribution of the initial bar chart, and monthly schedule updates. The bar chart shall specifically show work involving coordination with the railroad.

Flagging Contact

See Construction Contact. If more than 30 days of flagging is required contact UP 30 days prior to needing a flagger on site. Reference the Wisconsin Milepost and Subdivision located in A.1.

Cable Locate Contact

In addition to contacting Diggers Hotline, contact the UP Call Before You Dig line at (800) 336-9193 at least five working days before the locate is needed. Normal business hours are 6:30 AM to 6:30 PM,

Central Time, Monday through Friday, except holidays and are subject to change. Calls will be routed at all times in case of an emergency. Reference the Wisconsin Milepost and Subdivision located in A.1.

UP will only locate railroad owned cable buried in the railroad right-of-way. The railroad does not locate any other utilities.

A.4 Work by Railroad

The railroad will perform the work described in this section, except for work described in other special provisions and will be accomplished without cost to the contractor. Track construction. Railroad will throw track one time to match offset alignment constructed by the contractor.

A.5 Temporary Grade Crossing

If a temporary grade crossing is desired, submit a written request to the railroad representative named in A.3 at least 40 days prior to the time needed. Approval is subject to the discretion of the railroad. The department has made no arrangements for a temporary grade crossing.

A.6 Temporary Clearances During Construction

Replace standard spec 107.17.1(3) items 4.1 and 4.2 with the following:

4.1 Provide 15 feet 0 inches measured horizontally from the track center line. In curved track, increase the clearance by 6 inches total or 1.5 inches per degree of track curvature, whichever is greater.

4.2 Provide 21 feet 6 inch measured vertically above the top of the highest rail.

B Railroad Flagging

Arrange with the railroad for the flagging of trains and safety of railroad operations if clearances specified in subsection 107.17.1 are not maintained during construction operations. At any other time in railroad representative's judgment, the contractor's work or operations constitute an intrusion into the track zone and create an extraordinary hazard to railroad traffic, and at any other time when flagging protection is necessary for safety to comply with the operating rules of the railroad.

Projects with concurrent activity may require more than one flagger.

Projects with heavy contractor activity within 25 feet of the centerline of any track or unusual or heavy impact on railroad facilities will normally require a full-time flagger.

The department and railroad will monitor operations for compliance with the above flagging requirements. Violations may result in removal from railroad property until arrangements to adhere to the flagging requirements are satisfied. If the railroad imposes additional flagging requirements beyond the above flagging requirements due to the previous violations, the contractor shall bear all costs of the additional flagging requirements.

C Flagging by Railroad– Railroad Does Not Pay Flagging Costs

C.1 General

Replace paragraph (1,3 and 4) of standard spec 107.17.1 with the following:

(1) Coordinate with the railroad for all work performed within 25 feet of the track centerline including equipment or extensions of equipment that can fall within 25 feet of the track centerline or adjacent facilities or when working on railroad right-of-way. Include the following on all submittals and other written communications with the railroad:

- WisDOT crossing number.
- Railroad milepost.
- Railroad subdivision.

(3) Perform all work within 25 feet of the track centerline including equipment or extensions of equipment that can fall within 25 feet of the track centerline or adjacent facilities or when working on railroad right-of-way in a way that does not interfere with the safe and uninterrupted operation of railroad traffic. Maintain clearances during construction as follows:

1. Do not operate equipment closer than 25 feet horizontally from a track centerline or 22 feet vertically above the top of a rail, except under the protection of railroad flaggers.
2. Do not store materials or equipment closer than 25 feet horizontally from a track centerline.

3. Provide an obstruction-free work zone adjacent to a track extending 15 feet 6 inches or more horizontally on both sides of the track centerline. Keep this work zone free of construction debris.

4. Unless the railroad's chief engineering officer approves otherwise in writing, maintain minimum clearances from falsework, forms, shoring, and other temporary fixed objects as follows:

4.1 Provide 15 feet 0 inches measured horizontally from the track center line. In curved track, increase the clearance either by 6 inches total or 1.5 inches per degree of track curvature, whichever is greater.

4.2 Provide 21 feet 6 inches, plus compensation for super-elevated track, measured vertically above the top of the highest rail.

(4) Comply with the railroad's rules and regulations when work is within 25 feet of the track centerline including equipment or extensions of equipment that can fall within 25 feet of the track centerline or adjacent facilities or when working on railroad right-of-way. If the railroad's chief engineering officer requires, arrange with the railroad to obtain the services of qualified railroad employees to protect railroad traffic through the work area. Bear the cost of these services and make payment directly to the railroad. Notify the appropriate railroad representative as listed in section A.3 above, in writing, at least 40 business days before starting work near a track. Provide the specific time planned to start the operations.

C.2 Rates - Union Pacific

The following rates, reimbursement provisions, and excluded conditions will be used to determine the contractor's cost of flagging:

- $1,150 daily rate for an eight-hour day (including wages, labor surcharges, lodging, vehicle and mileage expenses),

- $1,500 "Rest Time" or nightly rate for weekday overnight work for an eight-hour day (including wages, labor surcharges, lodging, vehicle and mileage expenses)

- $1,260 daily rate for an eight-hour day on Saturdays, Sundays, or holidays (including wages, labor surcharges, lodging, vehicle and mileage expenses)

- $1,500 "Rest Time" or nightly rate for weekend overnight work for an eight-hour day (including wages, labor surcharges, lodging, vehicle and mileage expenses)

- $175 per hour overtime rate for all time worked before or after the regular assigned eight hours on any day, or for a minimum three hour call on Saturdays, Sundays, or Holidays.

The railroad will require pre-payment. The flagger is required to set flags each day in advance of the contractor commencing work that will require flagging. The flagger must also remove the flags each day after the completion of work that required flagging. Any time worked before or after the minimum eight-hour flagging day to set or remove flags will be billed at the overtime rate. The contractor is responsible for knowing the requirements of the railroad for arranging and terminating flagging services and for the associated costs of those services.

C.3 Reimbursement Provisions

The actual cost for flagging will be billed by the railroad. After the completion of the work requiring flagging protection as provided in section B above, the department will reimburse 50% of the cost of such services up to the rates provided above based on paid railroad invoices, except for the excluded conditions enumerated below. In the event actual flagging rates exceed the rates stated above, the department will reimburse 100% of the portion of the rate that is greater than the rates stated above.

C.4 Excluded Conditions

The department will not reimburse any of the cost for additional flagging attributable to the following:

1. Additional flagging requirements imposed by the railroad beyond the flagging requirements provided in subsection B above due to violations by the contractor.

2. Temporary construction crossings arranged for by the contractor.

The contractor shall bear all costs of the additional flagging requirements for the excluded conditions.

C.5 Payment for Flagging

The department will pay for the department's portion of flagging reimbursement as specified in section C of this provision under the following item:

ITEM NUMBER DESCRIPTION UNIT

The reimbursement payment, as shown on the Schedule of Items, is solely for department accounting purposes. Actual flagging costs will vary based on the contractor's means and methods.

Railroads may issue progressive invoices. Notify the railroad when the work is completed and request a final invoice from the railroad. Promptly pay railroad-flagging invoices, less any charges that may be in dispute. The department will withhold flagging reimbursement until any disputed charges are resolved and the final invoice is paid. No reimbursement for flagging will be made by the department if a violation of subsection B is documented.

D Rail Security Awareness and Contractor Orientation

Prior to entry on railroad right-of-way, the contractor shall arrange for on-line security awareness and contractor orientation training and testing and be registered through "e-RAILSAFE" for all contractor and subcontractor employees working on railroad right-of-way. See e-railsafe.com "Information". The security awareness and contractor orientation training are shown under the railroad's name.

The security awareness and contractor orientation certification is valid for 2 year(s) and must be renewed for projects that will carry over beyond the 2 year period. Contractor and subcontractor employees shall wear the identification badge issued by e-RAILSAFE when on railroad right-of-way. Costs associated with training and registration are incidental to other items in the contract.

stp-107-034 (20220719)

22. Union Pacific Railroad Company Requirements.

A General

In addition to requirements of the standard specifications and other articles within these special provisions, comply with the following requirements of Union Pacific Railroad Company (UPRR). Allow a minimum of four weeks for UPRR review of all submittals and each required resubmittal.

B Request for Information / Clarification

All requests for information (RFI) involving work within UPRR right-of-way shall be according to the procedures listed elsewhere in the special provisions. Submit all RFI's to the engineer one week before the submittal to UPRR. Allow the minimum review time listed in subsection A above for UPRR's review and each required resubmittal after receipt by the UPRR engineer from the engineer. Do not proceed with information or clarifications without approval of both the engineer and the UPRR engineer.

C Plans / Specifications

UPRR has approved all UPRR-related work in the contract documents and efforts have been made by UPRR and the department to be consistent in the plans and specifications. Verify with UPRR track forces field manager whether any special or general conditions not called out on the project apply. Specifically, verify general expectations, necessity of all temporary material enclosures, salvage material requirements, construction access, UPRR material and equipment deliveries, and field welding procedures before proceeding with that work. All UPRR-related work is incidental to the UPRR-related bid items on the project and no separate payment shall be made. Submit any UPRR-related changes and clarifications of the contract documents to the engineer one week before the submittal to UPRR. Allow the minimum review time listed in subsection A above for UPRR's review and each required resubmittal after receipt by the UPRR engineer from the engineer. Do not proceed with revisions without approval of both the engineer and the UPRR engineer.

D Construction Submittals

Electronically submit all required construction submittals via email as pdf files along with any review comments to the engineer. When submitting by email, subject title shall be consistent for a specific submittal throughout the UPRR approval process. For example:

UP over IH 43 MP 104.04 Shoreline Sub (_____)

Retaining Wall East of IH 43 MP 104.19 Shoreline Sub (_____)

End subject title with type of submittal. For example: (shoring plans).

All design submittals shall be stamped and signed by a professional engineer registered in the State of Wisconsin. A sufficient submittal review does not relieve the contractor of responsibility and liability.

Submit all construction submittals to the engineer one week before the submittal to UPRR. Allow the minimum review time listed in subsection A above for UPRR's review and each required resubmittal after receipt by the UPRR engineer from the engineer. Do not proceed with work described in the submittals without approval of both the engineer and the UPRR engineer.

The engineer and the UPRR engineer may review the submittals. If the UPRR engineer or the engineer finds a submittal insufficient, make all required changes and resubmit it to both the UPRR engineer and the engineer. A sufficient submittal review does not relieve the contractor of responsibility and liability of complying with the plans, specifications and the special provisions and for the structural integrity and proper functioning of the item that is the subject of the submittal.

Item	Description of Submittal Item	Notes
1	Shoring Design and Details	
2	Falsework Design and Details	
3	Erosion Control	
4	Drainage Design Provisions	
5	Erection Diagrams and Sequence	
6	Demolition Diagram and Sequence	
7	Shop Drawings	Steel and concrete members.
8	Precast Modular Wall	Des. dwgs, calcs and reports
9	Bearings	For all structures.
10	Concrete Mix Designs	For all structures.
11	Waterproofing Material Certifications and Installation Procedure	Waterproofing and protective boards.
12	Structural Steel and Rebar Certifications	All fracture critical members and other members requiring improved notch toughness.
13	Fabrication and Test Reports	All fracture critical members and other members requiring improved notch toughness.
14	Welding Procedures and Welder Certification	AWS Requirements.
15	Foundation Construction Reports	Pile driving, drilled shaft construction, bearing pressure test reports for Precast Modular Wall
16	Compaction Testing Reports for Backfill	Reference UPRR Embankment Articles
17	28 day Cylinder Test of Concrete Strength	
18	Construction Phasing Plan	
19	Project Close-Out Documents	
20	Other project-specific information as requested by UPRR	

Whenever work may affect the operations or safety of trains, submit to the UPRR engineer and copy the engineer for review. Review by UPRR shall not relieve the contractor from liability.

E Infringement On Minimum Clearances

Contractor will submit requests for infringement upon the minimum horizontal or vertical clearance requirements, as stated in "Railroad Insurance and Coordination – Union Pacific Railroad" article in these special provisions. The contractor will submit the requests to the UPRR engineer and copy the engineer. Do not infringe upon the minimum clearances unless they are first approved in writing by the UPRR engineer.

F Approval of Details

Once approval is obtained by the UPRR engineer, the contractor shall provide written approval to the engineer before undertaking such work.

G Site Inspections By UPRR

UPRR may make site inspections at any time. Provide the UPRR engineer a schedule of anticipated dates for the following activities and copy the engineer.

Pre-construction conference

Shoring

Drilled shaft construction

Foundation installation

Reinforcement and concrete placement for concrete work

Shop observation of fabricated steel spans by the railroad or its designated representative

Erection of superstructure

Placement and acceptance of waterproofing prior to placing ballast

Completion of the bridge structure

Track section construction

Acceptance observation of shoofly before placing it in service

Demolition

Update the schedule monthly, or more frequently if necessary, so that site visits may be scheduled.

H Construction Excavations and Demolition

Construction excavations shall meet OSHA and American Railway Engineering and Maintenance-of-Way Association (AREMA) requirements and the UPRR "Guidelines for Temporary Shoring" (GTS). The GTS is available for review from the Southeast Region's Railroad Coordinator at the department's Southeast Regional Office located at 141 NW Barstow Street, Waukesha, Wisconsin 53188 or at http://www.up.com/customers/ind-dev/operations/specs/.

23. Information to Bidders, U.S. Army Corps of Engineers Section 404 Permit.

The department has obtained a U.S. Army Corps of Engineers Section 404 permit. Comply with the requirements of the permit in addition to requirements of the special provisions. A copy of the permit is available from the regional office by contacting Steve Hoff at (262) 548-6718, steve.hoff@dot.wi.gov.

stp-107-054 (20210708)

24. Information to Bidders, WPDES General Construction Storm Water Discharge Permit.

The department has obtained coverage through the Wisconsin Department of Natural Resources to discharge storm water associated with land disturbing construction activities of this contract under the Wisconsin Pollutant Discharge Elimination System General Construction Storm Water Discharge Permit (WPDES Permit No. WI-S066796-1). A certificate of permit coverage is available from the regional office

by contacting Steve Hoff, (262) 548-6718, steve.hoff@dot.wi.gov. Post the permit in a conspicuous place at the construction site.

stp-107-056 (20180628)

25. Environmental Protection, Aquatic Exotic Species Control.

Exotic invasive organisms such as VHS, zebra mussels, purple loosestrife, and Eurasian water milfoil are becoming more prolific in Wisconsin and pose adverse effects to waters of the state. Wisconsin State Statutes 30.07, "Transportation of Aquatic Plants and Animals; Placement of Objects in Navigable Waters", details the state law that requires the removal of aquatic plants and zebra mussels each time equipment is put into state waters.

At construction sites that involve navigable water or wetlands, use the follow cleaning procedures to minimize the chance of exotic invasive species infestation. Use these procedures for all equipment that comes in contact with waters of the state and/or infested water or potentially infested water in other states.

Ensure that all equipment that has been in contact with waters of the state, or with infested or potentially infested waters, has been decontaminated for aquatic plant materials and zebra mussels before being used in other waters of the state. Before using equipment on this project, thoroughly disinfect all equipment that has come into contact with potentially infested waters. Guidelines from the Wisconsin Department of Natural Resources for disinfection are available at:

http://dnr.wi.gov/topic/invasives/disinfection.html

Use the following inspection and removal procedures:

1. Before leaving the contaminated site, wash machinery and ensure that the machinery is free of all soil and other substances that could possibly contain exotic invasive species;
2. Drain all water from boats, trailers, bilges, live wells, coolers, bait buckets, engine compartments, and any other area where water may be trapped;
3. Inspect boat hulls, propellers, trailers and other surfaces. Scrape off any attached mussels, remove any aquatic plant materials (fragments, stems, leaves, seeds, or roots), and dispose of removed mussels and plant materials in a garbage can before leaving the area or invested waters; and
4. Disinfect your boat, equipment and gear by either:
    4.1. Washing with ~212 F water (steam clean), or
    4.2. Drying thoroughly for five days after cleaning with soap and water and/or high pressure water, or
    4.3. Disinfecting with either 200 ppm (0.5 oz per gallon or 1 Tablespoon per gallon) Chlorine for 10-minute contact time or 1:100 solution (38 grams per gallon) of Virkon Aquatic for 20- to 30-minute contact time. Note: Virkon is not registered to kill zebra mussel veligers nor invertebrates like spiny water flea. Therefore, this disinfect should be used in conjunction with a hot water (>104º F) application.

Complete the inspection and removal procedure before equipment is brought to the project site and before the equipment leaves the project site.

stp-107-055 (20130615)

26. Dust Control Implementation Plan.

A Description

This special provision describes developing, updating, and implementing a detailed Dust Control Implementation Plan (DCIP) for all land-disturbing construction activities and associated impacts both within the project site boundaries and outside the project site boundaries. Incorporate contract bid items that this article specifies into the DCIP.

B (Vacant)

C Construction

C.1 General

Control dust on the project as specified in standard spec 107.18. Minimize dust emissions resulting from land disturbing activities. Do not generate excessive air borne particulate matter (PM) or nuisance dust conditions. Control dust at all times during the contract.

Submit a DCIP to the engineer for review at least 14 calendar days before the preconstruction conference. Coordinate with the department, if requested, to resolve DCIP related issues before the preconstruction conference. The department will either approve the DCIP or request revisions. Do not initiate land-disturbing activities without the department's approval of the DCIP.

C.2 DCIP Contents

Develop a DCIP tailored to the specific needs of the project. Consider potential impacts to businesses and residences adjacent to the job site. Describe in detail all land disturbing, dust generating activities. Identify strategies to prevent, mitigate, and collect excess dust. Establish clear lines of communication with the engineer to ensure that all dust control issues can be dealt with promptly.

Include all of the following:

1. A single contact person with overall responsibility for the DCIP development as well as surveillance and remediation of job related dust. Provide:
    - Name, firm, address, and working-hours phone number.
    - Non-working-hours phone number.
    - Email address.
2. A site map locating project features, the job site boundaries, all ingress and egress points, air intakes and other dust-sensitive areas, and all public and private paved surfaces within and adjacent to the job site. Show where specific land disturbing, dust generating activities will occur and, to the extent possible, where employing various dust control or prevention strategies.
3. A matrix, or plan, for each anticipated land disturbing, dust generating activity, showing the following:
    - Preventive measures that shall be employed.
    - The applicable contact person.
    - The contractor's timetable and surveillance measures used to determine when remediation is required.
    - The specific dust control and remediation measures that shall be employed. Identify the specific contract bid items that shall be used for payment. Indicate costs and practices that are incidental to the contract.
    - Both maintenance and cleanup schedules and procedures.
    - Excess and waste materials disposal strategy.
4. A description of monitoring and resolving off-site impacts.

C.3 Updating the DCIP

Update the DCIP during the contract or as the engineer directs. Obtain the engineer's approval for all DCIP alterations. Also obtain the engineer's approval for routine DCIP adjustments for weather, job conditions, or emergencies that will have an impact on payment under the bid items listed in the approved DCIP.

C.4 Dust Control Deficiencies

Coordinate with engineer to determine deadlines for resolving dust control deficiencies. Deficiencies include actions or lack of actions resulting in excessive dust, non-compliance with the contractor's DCIP or associated special provisions, and not properly maintaining equipment.

D Measurement

The department will measure the various bid items associated with dust control as specified in the applicable measurement subsections of either the standard specs or other contract special provisions. The department will not measure work performed under a DCIP alteration unless the engineer specifically approves that alteration.

Measurement under the DCIP includes the contract bid items listed in this special provision:

624.0100	Water
628.7560	Tracking Pads
SPV.0075.0600	Pavement Cleanup Project 1229-04-71
SPV.0075.0601	Pavement Cleanup Project 1229-04-73
SPV.0075.0602	Pavement Cleanup Project 1229-04-77

The department will measure work completed under other existing contract bid items if approved as a part of the DCIP. The department will consider new bid items to the contract if proposed under the DCIP. The department will not measure work required under the DCIP that is not included in contract bid items.

E Payment

All costs associated with the development and updating of the DCIP are incidental to the contract. The department will pay separately for the work required to implement the actions approved in the DCIP under the contract bid items approved as a part of the DCIP. All other costs associated with work approved under the DCIP are incidental to the contract.

sef-107-005 (20170323)

27. Erosion Control.

Add the following to standard spec 107.20:

Erosion control best management practices (BMP's) the plans show are at suggested locations. The actual locations shall be determined by the contractor's ECIP and by the engineer. Include each dewatering (mechanical pumping) operation in the ECIP submittal. The ECIP shall supplement information the plans show and not reproduce it. The ECIP shall identify how to implement the project's erosion control plan. ECIP shall demonstrate timely and diligently staged operations, continuing all construction operations methodically from the initial removals and topsoil stripping operations through the subsequent grading, paving, and re-application of topsoil to minimize the exposure to possible erosion.

Additional devices may be needed based on sequence of operations and field conditions. A ‘staged’ ECIP may be required for this project, as new areas are disturbed. Each new ‘stage’ of the ECIP needs to be submitted to the project staff and the WDNR liaison for review as an amendment to the ECIP with a standard 14-day review period. Work should not commence in new areas until the project staff and WDNR has reviewed and concurred with the corresponding ECIP amendment.

Provide the ECIP 14 days before the pre-construction conference. Provide 1 copy of the ECIP to the department and 1 copy of the ECIP to the WDNR Liaison Kristina Betzold, (414) 263-8517, Kristina.betzold@wisconsin.gov. Do not implement the ECIP until department approval, and perform all work conforming to the approved ECIP.

Maintain Erosion Control BMP's until permanent vegetation is established or until the engineer determines that the BMP is no longer required.

Stockpile excess materials or spoils on upland areas away from wetlands, floodplains, and waterways. Install perimeter silt fence protection around stockpiles within a timeframe acceptable to the engineer. If stockpiled materials will be left for more than 14 days, install temporary seed and mulch or other temporary erosion control measures the engineer orders. Show the proposed stockpile locations in the ECIP.

Re-apply topsoil on graded areas, as designated by the engineer, within a timeframe acceptable to the engineer after grading is completed within those areas. Seed, fertilize, and mulch/erosion mat top-soiled areas, as designated by the engineer, within 5 days after placement of topsoil. If graded areas outside of the roadbed area are left not completed and exposed for more than 14 days, seed those areas with temporary seed and mulch.

Do not allow excavation for; structures, utilities, grading, maintaining drainage that requires dewatering (mechanical pumping) of water containing sediments (sand, silt, and clay particles) to leave the worksite or discharge to a stormwater conveyance system without sediment removal treatment. Before each dewatering operation, submit to the department a separate ECIP amendment describing in words and pictorial format an appropriate BMP for sediment removal, conforming to WisDNR Storm Water Construction Technical Standard, Code 1061, Dewatering. Include reasoning, location, and schedule duration proposed for each operation. Per Code 1061, include all selection criteria: site assessment,

dewatering practice selection, calculations, plans, specifications, operations, maintenance, and location of proposed treated water discharge. Provide a stabilized discharge area. If directing discharge towards or into an inlet structure, provide additional inlet protection for back-up protection. Do not house any dewatering technique in a wetland or floodplain.

All dewatering, including treatment to remove suspended solids, not covered underbid items is incidental to the contract.

The project team may identify ‘sensitive’ areas in the field that require additional temporary stabilization to protect resources from being contaminated by sediment-laden water discharging from the worksite. The contractor shall use appropriately sized Temporary Sediment Traps conforming to WDNR’s Technical Guidance at locations upstream of major discharge locations. Any ‘release’ of sediment-laden water from the work site that enters a wetland or waterway should be reported to the WDNR liaison within 24 hours.

The contractor shall restrict the removal of vegetative cover and exposure of bare ground to the minimum amounts necessary to complete construction. Restoration of disturbed soils should take place as soon as conditions permit. If sufficient vegetative cover will not be achieved because of late-season construction, the site must be properly winterized. A plan for ‘over-wintering’ the project or a specific project area should be compiled and submitted to the project staff and WDNR for review in an amendment to the ECIP.

The DOT Select Site process must be adhered to for clean fill or any other material that leaves the worksite. The project staff and the WDNR liaison will review all proposed select sites and a site visit may be required. Filling of wetlands, waterways or floodplain is not allowed under the select site process unless the site owner has proof of required local/state/federal permits. No new impermeable surfaces can be left at a select site (including gravel roads or pads) unless the site owner attains required permits. Contaminated materials leaving the site need to adhere to the Hazardous Material Management Plan.

Construction materials and debris, including fuels, oil, and other liquid substances, will not be stored in the construction area in a manner that would allow them to enter a wetland or waterbody as a result of spillage, natural runoff, or flooding. If a spill of any potential pollutant should occur, it is the responsibility of the permittee to remove such material, to minimize any contamination resulting from this spill, and to immediately notify the State Duty Officer at 1 (800) 943-0003.

Construction of structures over navigable waterways shall be completed as quickly as possible in order to minimize disruption. Construction shall minimize the removal of shoreline vegetation below the ordinary high water mark (OHWM) unless otherwise directed by the WDNR Transportation Liaison. Construction equipment should not operate on the bed of the stream or below the OHWM, except for that which is necessary for the placement of the structure. The contractor must provide a means of separating the live flow channel of the waterway from disturbed areas (cofferdam, turbidity barrier, etc.). Any plan for diverting the flow of a navigable waterway (listed under Fish Spawning provision) needs to be submitted, reviewed and approved by the project staff.

If erosion mat is used along stream banks, DNR recommends that biodegradable non-netted mat be used (e.g. Class I Type A Urban, Class I Type B Urban, or Class II Type C). Long-term netted mats may cause animals to become entrapped while moving in and out of the stream. Avoid the use of fine mesh matting that is tied or bonded at the mesh intersection such that the openings in the mesh are fixed in size.

When performing concrete or asphalt saw cutting operations, the slurry shall be squeegeed off to the shoulder gravel or shoveled into the gravel behind curbs and not allowed into storm sewers, ditches, waterways or wetlands.

28. Erosion Control Structures.

Within three calendar days after completing the excavation for a substructure unit, place riprap or other permanent erosion control items required by the contract or deemed necessary by the engineer around the unit at a minimum to a height equivalent to the calculated water elevation resulting from a storm that occurs on the average of once every two years (Q2) as shown on the plan, or as the engineer directs.

In the event that construction activity does not disturb the existing ground below the Q2 elevation, the above timing requirements for permanent erosion control shall be waived.

stp-107-070 (20191121)

29. Permanent Restoration.

Place topsoil in all graded areas as designated by the engineer immediately after grading has been completed. Fertilize, seed and mulch or fertilize and sod all areas within five calendar days after placement of topsoil.

Place topsoil and permanently restore fill slopes as the height of the fills progress. Show the timing of all topsoil and restoration mobilizations as part of proposed schedule in the ECIP.

Fill slopes less than 10 feet in height shall be topsoiled and permanently restored out to the slope intercept when the fill slope reaches the subgrade shoulder point.

Fill slopes greater than 10 feet in height shall be topsoiled and permanently restored out to the slope intercept as the fill slope reaches 10 feet in height. The remainder of the fill slope shall be topsoiled and permanently restored when the fill slope reaches the subgrade shoulder point.

30. Maintaining Drainage.

Maintain drainage at and through worksite during construction conforming to standard spec 107.22, 204, 205 and 520.

Use existing storm sewers, existing culvert pipes, existing drainage channels, temporary culvert pipes, or temporary drainage channels to maintain existing surface and pipe drainage. Pumps may be required to drain the surface, pipe, and structure discharges during construction. Costs for furnishing, operating, and maintaining the pumps is considered incidental to the project.

Dewatering (Mechanical Pumping) for Bypass Water (sediment-free) Operations

If dewatering bypass operations are required from one pipe structure to another downstream pipe structure or from the upstream to downstream end of a culvert and the bypass flow is not transporting sediments (sand, silt, and clay particles) from a tributary work site area, bypass pumping operations will be allowed provided that the department has been made aware of and approves operation. When pumping bypass flows, the discharge location will need to be stable and not produce erosion from the discharge velocity that would cause release of sediment downstream.

Dewatering (Mechanical Pumping) for treatment Water (sediment-laden) Operations

If dewatering operations require pumping of water containing sediments (sand, silt, and clay particles), the discharge will not be allowed to leave the work site or discharge to a storm water conveyance system without sediment removal treatment. Refer to article Erosion Control in these special provisions for additional requirements.

sef-107-016 (20170310)

31. Health and Safety Requirements for Workers Remediating Petroleum Contamination.

Add the following to standard spec 107.1(2):

Soil contamination with gasoline, diesel fuel, fuel oil, or other petroleum related products may be encountered during excavation activities. Prepare a site-specific Health and Safety Plan complying with the Occupational Safety and Health Administration (OSHA) standard for Hazardous Waste Operation and Emergency Response (HAZWOPER), 29 CFR 1910.120.

All site workers taking part in remediation activities or who will have the reasonable probability of exposure of safety or health hazards associated with the hazardous material shall have completed Health and Safety training that meets OSHA requirements. Before the start of remediation work, submit to the engineer a site-specific Health and Safety Plan, and written verification that workers will have completed up-to-date OSHA training.

Develop, delineate, and enforce the health and safety exclusions zones for each contaminated site location pursuant to 29 CFR 1910.120.

stp-107-115 (20150630)

32. Subletting the Contract.

Replace standard spec 108.1.1 (3) with the following:

If proposing to have a party other than a subcontractor perform work, notify the engineer and submit details of this arrangement in writing. The engineer will determine if that arrangement constitutes subcontracting. Submit copies of all other agreements between any parties regarding the performance of work under the contract with the Request to Sublet.

sef-108-035 (20171004)

33. Work Force Opportunities.

The Work Force Opportunities workshop will provide a venue for contractors to have meaningful dialogue with Transportation Alliance for New Solutions (TrANS) providers regarding the hiring of TrANS graduates. Reference ASP-1 for additional information regarding TrANS. The prime contractor and the three largest subcontractors according to let value of work shall provide staff with hiring authority to participate in a job-matching session during this workshop. Workshop participants will, at a minimum:

- Review contractor hiring processes for general labor positions.
- Listen to a presentation provided by TrANS providers regarding the TrANS training program, including details regarding how contractors can hire TrANS graduates.
- Review TrANS graduate availability for working on the project.
- Meet one-on-one for two minutes with each TrANS graduate in attendance at the meeting.

sef-108-036 (20180627)

34. Coordination with Businesses and Residents.

The contractor shall arrange and conduct meetings between the contractor, the department, affected residents, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations. Meetings shall be held prior to the start of 2023 construction, prior to start of 2024 construction, and prior to each traffic staging change. The contractor shall arrange for a suitable location for meetings that provides reasonable accommodation for public involvement. The department will prepare and coordinate publication of the meeting notices and mailings for meetings. The contractor shall schedule meetings with at least two weeks' prior notice to the engineer to allow for these notifications.

stp-108-060 (20141107)

35. Environmental Protection – Waste.

Conduct construction activities in an environmentally sound manner, including the proper disposal of all demolition material that cannot be recycled.

The excavation management plan for this project has been designed to minimize the off-site disposal of impacted material. Follow the requirements for the off-site management of petroleum-and metals-contaminated soil (bioremediation at a landfill) and reuse of foundry sand and low-level petroleum-contaminated soil as indicated in these special provisions. If subsurface contamination or other signs of non-exempt (NR 500.08) solid waste including buried containers, industrial fill, stained soils, noxious odors, etc., are unexpectedly encountered elsewhere on the project during excavation, terminate excavation in the area and notify the engineer immediately. Work with the department's environmental consultant to properly manage the waste following the WisDOT-WDNR materials management options as indicated in the table below. Contact Andrew Malsom (WisDOT) at (262) 548-6705 or Andrew.Malsom@dot.wi.gov to arrange for environmental consultant coordination. The environmental consultant will perform waste characterization and coordinate with the WDNR for an appropriate handling and disposal.

Management of Material Excavated During Highway Construction		
Classification	**Characterization of Material**	**Material Management**
1. Common Excavation (NR 500.08(2) Unregulated or Exempt Material)	– Native soil – Fill soils that have no obvious visual or olfactory contamination and may not have been analyzed for contaminants. Clean unpainted or untreated wood, brick, concrete, cured asphalt, and trace amounts of glass.	Contractor-selected sites approved through Erosion Control Implementation Plan (ECIP) review process, or on-site reuse
2. Special Excavation (NR 500.08(4) Solid Waste Low Hazard Exemption)	– Soil with low levels of petroleum contamination or contaminant metals within the site fill plan criteria. Trace amounts (<25% volume of the excavation equipment's bucket load) of foundry sand, cinders, and fly ash.	WisDOT selected site or on-site reuse with WDNR concurrence. Sites must meet the location criteria of 504.04 (3) (c) and (4) (a) to (f). Fill plans are also approved through ECIP review process.
3. Contaminated Soil and Fill Material	– Lead painted or treated wood – Petroleum contaminated soil – Significant amounts (>25% volume of the excavation equipment's bucket load) of foundry sand, cinders, or fly ash.	Contaminated material disposed at a WDNR-licensed solid waste disposal facility. Petroleum contaminated material shall be treated at a bioremediation facility (biopile) prior to disposal at the landfill. Direct disposal of contaminated material at landfills without such pre-treatment must be pre-authorized by the WisDOT.
4. Asbestos-containing Waste	Asbestos-containing material	Landfill at a WDNR–licensed solid waste landfill with approval to accept asbestos-containing material.
5. Hazardous Waste	RCRA Subtitle C (NR 600) contaminated media (hazardous waste)	Disposed or treatment under State's hazardous waste disposal contract with Veolia. Significant quantities should be evaluated for potential treatment to render non-hazardous to reduce disposal costs.
6. Potentially contaminated material	Potentially contaminated material with unusual visual, olfactory, or other characteristics	Temporary stockpile with appropriate environmental controls constructed per NR 718.05. Temporary stockpiling at solid waste landfill may be alternative with WDNR & Landfill's approvals.

36. Notice to Contractor – Existing Topographic Mapping

The topographic mapping shown in the plans may not represent current field conditions due to the Work Zone Prep project (1229-04-70) previously constructed. That project included widening of IH-43 to accommodate traffic control shown in this plan set. Miscellaneous quantities shown in this plan take the previously-completed widening into account.

37. Notice to Contractor – Personnel Identification Program.

All contractor personnel will be required to register in the program prior to performing work. Valid photo identification which includes unexpired driver's license, government issued identification cards, military identification, passport, or other identification approved by the department will be required to register. All personnel registered will be issued a hard hat sticker with an identification number by the department. Stickers shall be placed in a visible location on the hard hat.

Noncompliance with this contract provision may result in removal of contractor personnel from the project or suspension of work according to standard spec 108.6.

38. Notice to Contractor – Media Relations.

a) The contractor shall not disseminate or publicize this Agreement, information relating to this Agreement, their work responsibilities, or generally comment about the entire project without prior written consent from one of the department's designated Project Communications Leaders listed under Section (d).

b) The contractor shall refer all information requests or interview requests made by external parties, including media sources, to all of the department's designated Project Communications Leaders listed under Section (d).

c) The contractor agrees to coordinate with the department as to the form, content and timing of any public announcement of this Agreement.

d) The Project Communications Leaders for the department shall be:

   i. The department's project manager

   ii. Daniel Sellers
   141 NW Barstow Street
   P.O. Box 798
   Waukesha, WI 53188
   Phone: (262) 548-5902
   Email: daniel.sellers@dot.wi.gov

e) Noncompliance with this contract provision may result in removal of contractor personnel from the project or suspension of work according to Wisconsin Department of Transportation standard spec 108.6 applicable under the contract.

f) Notwithstanding anything to the contrary contained herein, no provision of this Agreement shall be interpreted to impede the contractor, or any individual, from reporting possible violations of state or federal law to any governmental agency or entity, or from making other disclosures under the whistleblower provisions of state or federal law. The contractor does not need the prior authorization of the department to make any such reports or disclosures and the contractor shall not be required to notify the department that such reports or disclosures have been made.

39. Notice to Contractor – Safety.

All workers shall wear OSHA and ANSI compliant safety head protection, safety glasses, safety-toe protective footwear, and an ANSI 107-2015 Type R, Class 2 safety vest at all times while within the project footprint. ANSI 107-2015 Type R, Class E safety pants will be required from dusk until dawn while in the project footprint.

The contractor and respective subcontractors shall provide a copy of their current Company Safety Plans to the department at the preconstruction meeting. All workers shall comply with the Safety Plans of their employer. The department will not issue a notice to proceed until all safety plans have been submitted.

Noncompliance with this contract provision may result in removal of contractor personnel from the project or suspension of work according to standard spec 108.6 applicable under the contract.

40. Notice to Contractor – Road Weather Information System (RWIS) Coordination.

The RWIS included in this project is a non-intrusive system. The system sensors are installed on a pole or tower next to the roadway as noted in the plans. The system is furnished and installed through a separate contract.

Contact Ahmet Demirbilek, State Electrical Engineer, WisDOT Bureau of Traffic Operations; State Traffic Operation Center; (414) 220- 6801 office, or (414) 322- 9606 cell, within 3 days of completion of conduit and pull boxes to the Road Weather Information System, to coordinate concrete base, tower, sensor, cabinet, and controller installation.

41. Notice to Contractor – North Point Village Condo Coordination.

The North Point Village Condo Association (Parcel 73) has access to an underground parking garage adjacent to the IH 43 NB entrance ramp from Good Hope Road. The driveway to access the underground parking is adjacent to an existing modular block wall that will be replaced with retaining wall R-40-647.

Contact Joel Aizen at Mount Vernon Enterprises (414) 324-4115, 45 days prior to beginning construction on R-40-647 to coordinate access to underground parking garage.

42. Notice to Contractor – Waste.

WisDOT has coordinated with the Village of River Hills regarding potential fill site locations on private property, adjacent to southbound I43, for future berm construction. At the contractor's option, the Village of River Hills Engineer, Mustafa Emir may be contacted at (414) 315-1933 or Mustafa.Emir@clarkdietz.com to coordinate the placement of excess fill. This work is incidental and is to be coordinated outside of the project. Securing all necessary approvals (including permits, if necessary) related to placing fill and construction activities on private property is the responsibility of the residents and/or contractor. Per previous coordination between WisDOT and FHWA, hauling to the potential fill sites is anticipated to be completed during stage 3 of the project, when traffic is bidirectional on the I-43 northbound lanes while the southbound lanes are being constructed. Obtain WisDOT and FHWA approval for hauling outside of stage 3. No safety or operational impacts to the interstate shall occur as a result of this work. Environmental commitments noted in the prosecution and progress article must be adhered to when working on the project site.

Stakeholder information is:

Jeremy Siegrist
7790 N Pheasant Lane
River Hills, WI 53217

Simon Bundy
7800 N. Pheasant Lane
River Hills, WI 53217

Eric Von Schledorn
7820 N. Pheasant Lane
River Hills, WI 53217

43. Notice to Contractor – Milwaukee County Transit System.

The Milwaukee County Transit System (MCTS) operates the 68 and 143 bus routes within the construction limits. Invite MCTS to all coordination meetings between the contractor, the department, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations.

Notify MCTS at least 10 business days prior to beginning work on Port Washington Road. If necessary, MCTS will remove their existing bus stop signs and shelters before work begins and re-install or replace bus stop signs and shelters before new pavement opens to vehicular traffic. The contractor shall provide temporary bus stops with ADA compliant pedestrian accommodations, to be paid under separate bid item. Temporary bus stops must be connected to the sidewalk network when one is available. MCTS will provide temporary bus stop signs.

The MCTS contacts are:

Melanie Flynn
Milwaukee County Transit System – Routes
1942 N. 17th St.
Milwaukee, WI 53205
Phone: (414) 343-1764
Mflynn@MCTS.org

Andy Tillman
Milwaukee County Transit System – Bus Stops
1942 N. 17th St.
Milwaukee, WI 53205
Phone: (414) 343-1728
Atillman@MCTS.org

David Locher
Transportation Specialist
Phone: (414) 343-1727
Dlocher@MCTS.org

44. Notice to Contractor – Maintenance of Eruv Boundary.

General

An Eruv is a symbolic wall for the Jewish community that is an uninterrupted boundary comprised mostly of fences and utility lines. There are three separate Eruvs within the project limits. The Eruvs are generally described as follows:

The Glendale Eruv boundary comes from the west along the northern most girder of the Union Pacific Railroad and then continues north on the IH 43 west side access control fence between the Union Pacific Railroad and Station 1122+50 where is crosses over Jean Nicolet Road to the Nicolet High School Stadium fence. The Eruv rejoins the IH 43 west side access control fence at Green Tree Road and remains on the IH 43 west side access control fence until that fence intersects the Park and Ride fence at Brown Deer Road. The Eruv continues on the Park and Ride lot fence to the south, west and then north, crosses Brown Deer Road on WE Energies lines and continues to the east. The Eruv crosses over Good Hope Road on WE Energies power lines.

The contact for the Glendale Eruv is:

Rabbi Wes Kalmar
RabbiKalmar@asktshul.com
Cell: (414) 228-9296

The Bayside Eruv boundary comes from the east on WE Energies poles along the north side of Green Tree Road and then continues north on the IH 43 east side access control fence between Green Tree Road and Fairy Chasm Road. At Fairy Chasm Road the Eruv continues east on WE Energies power lines. The Eruv crosses over both Good Hope Road and Brown Deer Road on WE Energies power lines.

The contact for the Bayside Eruv is:

Rabbi Cheski Edelman
rabbicheski@chabadwi.org
Cell: (414) 439-5041

The Mequon Eruv boundary comes from the west on Brown Deer Road on WE Energies power lines and at the existing Brown Deer Road Interchange southbound to westbound off ramp heads north on WE Energies power lines along the west right-of-way line past the project limits.

The contact for the Mequon Eruv is:

Rabbi Moshe Rapoport
moshe@chabadmequon.org
Cell: (414) 403-4318

Contact each Eruv Rabbi 10 days prior to removal of any poles. wires, etc. that comprise the existing Eruv boundary.

Provide information regarding the timing, scope of work and any relevant information that will assist the Jewish community with determining whether they would need to move the Eruv to a new location due to the construction work.

Notification and coordination with each Eruv Rabbi both before and during construction is incidental to the contract.

Temporary Eruv Accommodation

Stages 1 - 3

Between the UPRR and Green Tree Road, temporary access control fence at the east curb line of Jean Nicolet Road and as shown on the plans will serve as the temporary Glendale Eruv boundary.

Move the cable attachment on the existing freeway light Station 54JN+00 from the freeway light standard to the temporary freeway light pole at Station 1122+30.42, 76.79' left, maintaining proper clearance over Jean Nicolet Road. Moving and reattaching the cable to the temporary freeway light pole is incidental to the contract.

Notify the Glendale Eruv Rabbi 10 days before the installation or modification of any temporary fence on Jean Nicolet Road.

Between Green Tree Road and Fairy Chasm Road, temporary access control fence as shown on the plans will serve as the temporary Glendale Eruv on the west side and temporary Bayside Eruv on the east side. The end of the Temporary Access Control Fence must be within 6-inches of any power pole, existing fence or existing wall as shown on the plans.

Temporary access control fence needs to be in place by 5 pm on the Thursday following the removal of the existing access control fence. This temporary access control fence needs to be in place until the permanent access control fence or noise barrier is installed, which must be by 5 pm on the Thursday following the removal of the temporary access control fence.

If existing fence around the Brown Deer Road Park and Ride lot is removed, temporary access control fence needs to be in its place by 5 pm on the Thursday following its removal.

Notify the Glendale, Bayside and Mequon Eruv Rabbis 10 days before the installation or modification of any temporary access fence between Green Tree Road and Fairy Chasm Road or at the Brown Deer Road Park and Ride Lot.

Stage 4

Between the UPRR and Station 54JN+00, temporary access fence west of the temporary southbound lanes behind the temporary concrete barrier, as shown on the plans, will serve as the Glendale Eruv boundary.

Install a temporary wooded light pole at Station 1122+00 behind the temporary concrete barrier at the edge of the temporary southbound lanes. Extend the cable at Station 54JN+00 from the temp freeway light pole at Station 1122+30.42, 76.79' left to the new wooded pole at approximately Station 1122+00 maintaining proper clearance over Jean Nicolet Road and the work zone. This work will be incidental to the contract.

Notify the Glendale Eruv Rabbi 10 days before the installation or modification of any temporary fence on Jean Nicolet Road.

Between Green Tree Road and Fairy Chasm Road, temporary access control fence as shown on the plans will serve as the temporary Glendale Eruv on the west side and temporary Bayside Eruv on the east side. The end of the Temporary Access Control Fence must be within 6-inches of any power pole, existing fence or existing wall as shown on the plans.

Temporary access control fence needs to be in place by 5 pm on the Thursday following the removal of the existing access control fence. This temporary access control fence needs to be in place until the permanent access control fence or noise barrier is installed, which must be by 5 pm on the Thursday following the removal of the temporary access control fence.

If existing fence around the Brown Deer Road Park and Ride lot is removed, temporary access control fence needs to be in its place by 5 pm on the Thursday following its removal.

Notify the Glendale, Bayside and Mequon Eruv Rabbis 10 days before the installation or modification of any temporary access fence between Green Tree Road and Fairy Chasm Road or at the Brown Deer Road Park and Ride Lot.

Temporary Accommodation of the Eruv is to be paid under the items of Fence Safety and Temporary Wood Poles.

Temporary Eruv Maintenance

The Temporary Access Fence must be maintained at a height of no less than 40 inches and must be in place between 5:00 PM on Thursday and noon Sunday each week when there is no existing or permanent fence or no noise barrier in place. If there is no existing or permanent fence or noise barrier, and the Temporary Access Fence will not be in place between 5:00 PM Thursday and noon on Sunday, notify the appropriate Eruv Rabbi by 5:00 PM on Thursday.

Maintenance of the Temporary Access Control Fence as the Temporary Eruv is incidental to the item Temporary Access Control Fence. The installation and maintenance of wire, if required, that acts as an Eruv between temporary poles is incidental to the Temporary Wood Pole item.

45. Notice to Contractor – Environmental Sampling of Import Soil.

Material testing is required for any permanent fill incorporated into the Union Pacific right-of-way that has composition with an element of fine material, including but not limited to the list provided below:

- 205.0100 Excavation Common (CY) (Any associated fill material excavated from outside Union Pacific Railroad right-of-way)
- 209.1100 Backfill Granular Grade 1 (CY)
- 210.1500 Backfill Structure Type A (Ton)
- SPV.0180.0001 Topsoil Special (SY) (Any associated topsoil material excavated from outside Union Pacific Railroad right-of-way)
- SPV.0195.4000 Base Aggregate Open Graded Special (Ton)

All imported soil placed within UPRR Right-of-Way must be proven through analytical testing that it is free from contamination. Coordinate with the environmental consultant to collect import soil samples complying with the requirements in “Soil Import Specifications,” adopted by the Union Pacific Engineering Department, March 1, 2016. If there is a discrepancy or conflict between the referenced specification and WDNR requirements, the stricter requirement between the two governs.

The environmental consultant for this project is:

Consultant:	TRC Environmental Corporation
Address:	150 N. Patrick Blvd., Suite 180, Brookfield, WI 53045
Contact:	Bryan Bergmann
Phone:	(262) 901-2126 office; (262) 227-9210 cell
Fax:	(262) 879-1220
E-mail:	bbergmann@trccompanies.com

The department's hazardous materials environmental contact for this project is:

Name:	Andrew Malsom
Address:	141 NW Barstow St., Waukesha, WI 53187
Phone:	(262) 548-6705
E-mail:	Andrew.Malsom@dot.wi.gov

The role of the environmental consultant will be limited to:

1. Collecting one representative soil sample for every 5,000 cubic yards (in place), or fraction thereof, of import soil. If import soil will be derived from more than one source or location, import soil qualifications must be attained from each source according to the sampling frequency.
2. Document approximate geographic coordinates (latitude/longitude) of the import soil sample location(s).
3. Coordinating lab testing of import soil.
4. Provide laboratory results and geographic coordinates to the department and contractor. Contractor shall provide laboratory results and geographic coordinates to UPRR.

To qualify a given volume of soil for use as import soil, a copy of the associated laboratory report must be sent to UPRR for review and approval.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant.

At the preconstruction conference, identify the import soil site(s). Notify the environmental consultant at least three calendar days prior to when soil samples can be collected at the import soil site(s).

The environmental consultant will coordinate analytical testing of import soil. (15) business days should be allowed for the environmental consultant to collect soil samples and for the laboratory to conduct environmental testing and issue results at each import soil site.

Import soil shall not be placed in the UPRR right-of-way without prior approval from UPRR. After lab data has been provided to the contractor for submittal to UPRR, the environmental consultant shall not be responsible for any delays related to UPRR review and approval of import soil for placement within the UPRR right-of-way.

Costs associated with assisting the environmental consultant with environmental sampling of import soil are considered incidental to the project.

stp-107-100 (20050901)

46. Notice to Contractor – Environmental Sampling of Existing UPRR Track Section.

Notify the UPRR engineer and the engineer two weeks prior to clearing and grubbing the existing UPRR track section. Provide the engineer (or the engineer's environmental consultant) access to the existing UPRR track section to core samples and/or excavate test pits prior to construction of B-40-921 or R-40-649. Coordinate all excavation based on the results of this testing.

47. Notice to Contractor – Disposal of Treated Railroad Ties and Treated Timber Pilings.

Treated wood is a regulated solid waste per NR 500 of the Wisconsin Administrative Code. Waste railroad ties and timber pilings generated by the project must be landfilled at a licensed disposal facility. Costs associated with their handling and disposal are incidental to the project.

48. Notice to Contractor – Possible Additional Asbestos Containing Material under Ballast on B-40-24.

Notify the UPRR engineer and the engineer two weeks prior to removing ballast from existing bridge B-40-24. After the ballast is removed, provide the engineer access to the waterproofing material on top of the bridge deck to test for asbestos. If asbestos containing material is present, allow two weeks for the department to remove the asbestos containing material.

49. Notice to Contractor – Notification of Demolition and/or Renovation No Asbestos Found.

B-40-23

John Roelke, License Number AII-119523, inspected Structure B-40-23 for asbestos on September 14, 2011. No regulated Asbestos Containing Material (RACM) was found on this structure.

B-40-24

John Roelke, License Number AII-119523, inspected Structure B-40-24 for asbestos on June 10, 2013. No regulated Asbestos Containing Material (RACM) was found on this structure.

B-40-577

John Roelke, License Number AII-119523, inspected Structure B-40-577 for asbestos on September 14, 2011. No regulated Asbestos Containing Material (RACM) was found on this structure.

B-40-578

John Roelke, License Number AII-119523, inspected Structure B-40-578 for asbestos on September 14, 2011. No regulated Asbestos Containing Material (RACM) was found on this structure.

B-40-732

John Roelke, License Number AII-119523, inspected Structure B-40-732 for asbestos on April 15, 2013. No regulated Asbestos Containing Material (RACM) was found on this structure.

B-40-733

John Roelke, License Number AII-119523, inspected Structure B-40-733 for asbestos on April 15, 2013. No regulated Asbestos Containing Material (RACM) was found on this structure.

B-40-734

John Roelke, License Number AII-119523, inspected Structure B-40-734 for asbestos on April 3, 2013. No regulated Asbestos Containing Material (RACM) was found on this structure.

B-40-735

John Roelke, License Number AII-119523, inspected Structure B-40-735 for asbestos on April 3, 2013. No regulated Asbestos Containing Material (RACM) was found on this structure.

Copies of the inspection reports are available from: Steve Hoff, WisDOT SE Region Project Manager, steve.hoff@dot.wi.gov, (262) 548-6718.

According to NR447 and DHS159, ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand-delivery, or using the online notification system at least 10 working days before beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form to Andrew Malsom, WisDOT SE Region Hazmat Program Environmental Engineer, andrew.malsom@dot.wi.gov(262) 548-6705 and via email to dothazmatunit@dot.wi.gov or via U.S. mail to DOT BTS-ESS attn: Hazardous Materials Specialist, 5 South S.513.12, PO Box 7965, Madison, WI 53707-7965.". In addition, comply with all local or municipal asbestos requirements.

Use the following information to complete WisDNR form 4500-113:

B-40-23

- Site Name: Structure B-40-23, IH 43 and Pheasant Lane over Indian Creek
- Site Address: 0.7 mi. south Jct. STH 100
- Ownership Information: WisDOT, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Ken Kiepczynski
- Phone: (414) 659-3055
- Age: 67 years old. This structure was constructed in 1956.
- Area: 7,660 SF of deck

B-40-24

- Site Name: Structure B-40-24, UPRR over IH 43
- Site Address: 3.2 mi. north Jct. STH 190
- Ownership Information: Union Pacific Railroad Company, 1400 Douglas, MS 0910, Omaha, NE, 68179
- Contact: Chris T. Keckeisen, Manager Special Projects - Industry & Public Projects Engineering Department
- Phone: (402) 544-5131
- Age: 66 years old. This structure was constructed in 1957.
- Area: 4,447 SF of deck

B-40-577

- Site Name: Structure B-40-577, IH 43 NB over Bender Rd.
- Site Address: 3.0 mi. north Jct. STH 190
- Ownership Information: WisDOT, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Ken Kiepczynski
- Phone: (414) 659-3055
- Age: 31 years old. This structure was constructed in 1992.
- Area: 5,978 SF of deck

B-40-578

- Site Name: Structure B-40-578, IH 43 SB over Bender Rd.
- Site Address: 3.4 mi. south Jct. STH 100
- Ownership Information: WisDOT, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Ken Kiepczynski
- Phone: (414) 659-3055
- Age: 31 years old. This structure was constructed in 1992.
- Area: 5,972 SF of deck

B-40-732

- Site Name: Structure B-40-732, STH 100 NB/Brown Deer Rd. EB over IH 43
- Site Address: 2.3 mi. east Jct. STH 57
- Ownership Information: WisDOT, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Ken Kiepczynski
- Phone: (414) 659-3055
- Age: 13 years old. This structure was constructed in 2010.
- Area: 9,372 SF of deck

B-40-733

- Site Name: Structure B-40-733, STH 100 SB/Brown Deer Rd. WB over IH 43
- Site Address: 0.1 mi. west Jct. CTH W
- Ownership Information: WisDOT, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Ken Kiepczynski
- Phone: (414) 659-3055
- Age: 13 years old. This structure was constructed in 2010.
- Area: 8,747 SF of deck

B-40-734

- Site Name: Structure B-40-734, CTH PP/Good Hope Rd. EB over IH 43
- Site Address: 1.1 mi. east Jct. STH 57
- Ownership Information: WisDOT, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Ken Kiepczynski
- Phone: (414) 659-3055
- Age: 13 years old. This structure was constructed in 2010.
- Area: 7,914 SF of deck

B-40-735

- Site Name: Structure B-40-735, CTH PP/Good Hope Rd. WB over IH 43
- Site Address: 0.1 mi. west Jct. CTH W
- Ownership Information: WisDOT, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Ken Kiepczynski
- Phone: (414) 659-3055
- Age: 13 years old. This structure was constructed in 2010.
- Area: 7,914 SF of deck

Insert the following paragraph in Section 6.g.:

> If asbestos not previously identified is found or previously non-friable asbestos becomes crumbled, pulverized, or reduced to a powder, stop work immediately, notify the engineer, and the engineer will notify the department's Bureau of Technical Services at (608) 266-1476 for an emergency response as specified in standard spec 107.24. Keep material wet until it is abated or until it is determined to be non-asbestos containing material.

stp-107-125 (20120615)

50. Notice to Contractor – No Asbestos Inspection, No Asbestos Anticipated.

Structures R-40-158, R-40-412, R-40-413, R-40-414, R-40-415, R-40-641, R-40-642, and the existing block wall near Station 1153GHA, 40' RT have not been inspected for asbestos. No asbestos is anticipated at the portions of these structures to be removed or modified. If asbestos not previously identified is found, stop work immediately, notify the engineer, and the engineer will notify the department's Bureau of Technical Services at (608) 266-1476 for an emergency response as specified in standard spec 107.24. Keep material wet until it is abated or until it is determined to be non-asbestos containing material.

51. Notice to Contractor – Off-Site Watersheds.

The contractor should be aware that the department's analysis indicates there is substantial off-site flow draining into and through the project at the following locations:

Location:	Station:
001	20
002	15
003	10
004	10
005	20
006	30
007	10
008	300
009	15
010	20
011	10
012	600
013	20
014	15
015	15
016	10
017	10
018	10
019	10
020	10
021	15
022	15

Locations are also noted on the Storm Sewer Plan and Profiles with a note stating, "Contractor to manage offsite flows – Location (number).

Propose methods to convey the clean off-site water through the work zone as part of the ECIP.

52. Notice to Contractor – UPRR Access off Karl Campus Drive.

WisDOT has coordinated with the Village of Whitefish Bay regarding access to remove existing UPRR tracks using Karl Campus Drive. Construction equipment shall access UPRR right-of-way from the north side of Karl Campus Drive. All work shall occur inside UPRR right-of-way. Storage of equipment and materials and parking of construction equipment is prohibited along Karl Campus Drive and within public right-of-way. Karl Campus Drive shall not be closed for more than 2 minutes at a time. Contractor shall restore all vegetation and damaged turf at the completion of rail removal. Notify the Village of Whitefish Bay at least 10 business days prior to closing Karl Campus Drive to schedule a pre-use meeting.

53. Notice to Contractor – Salvage Height Modernization (HMOD) Survey Disk.

HMOD disk 'Y 130 (OL0113)' falls on existing Structure B-40-24 (UPRR over I-43 structure). Prior to removing existing Structure B-40-24, contractor shall locate, remove, and salvage the HMOD disk to return to WisDOT survey. Contact Thomas Lipsky (262) 548-6737 or Thomas.lipsky@dot.wi.gov to coordinate return of disk to WisDOT. Salvaging the disk is considered incidental to 203.0220.0008 – Removing Structure B-40-24.

54. Notice to Contractor – WHRP Project – Forensic Analysis of MSE Retaining Wall RW-40-0158 During Demolition

The Wisconsin Highway Research Program (WHRP) plans to undertake a research project conducting a forensic analysis of the components of the MSE Retaining Wall RW-40-0158 during the planned demolition. The project will document the condition of the wall components at different elevations and distances behind the wall face along the wall length. The researcher will be on-site during demolition activities to document and photograph the condition of the wall components during demolition activities. Samples of soil and steel strip (or steel mat) reinforcement will be collected by the researcher as part of this study. Samples of the mechanical connection between the steel strip (steel mat) and concrete panel facing may also be collected.

The researcher will be contracted through WHRP to conduct the research project and will be responsible for being on-site during wall demolition to document the condition of the wall components in the field and collecting the necessary soil and steel strip (or steel mat) samples for laboratory testing to complete the project. The contractor shall accommodate the research effort by providing at least four weeks of notice before the start of demolition and providing access to the researcher in the area behind the wall face along the length of the wall and at different reinforcement layers to document the condition of the wall and collect samples of soil and steel strip reinforcement. Contact David Staab, WisDOT Bureau of Technical Services, at david.staab@dot.wi.gov, or (608) 246-7652 to provide advance notice of this work.

It is estimated that approximately four locations will be tested at each layer of reinforcement along the wall length, and there will be approximately eight reinforcement layers tested vertically. At each sample location the contractor shall excavate a minimum 10-foot wide area where the entire length of reinforcement strips (or mat reinforcement) is undisturbed from the wall face to the end of the reinforcement. The researcher will collect the soil and steel strip reinforcement samples from the sample locations excavated by the contractor.

55. Work Zone Ingress – Egress.

Any initial set-up and/or changes to the Work Zone Ingress – Egress construction detail in the plan or location(s) should be submitted a minimum of 10 working days before use and are subject to approval by the engineer and the Construction Program Work Zone Engineer, Keegan Dole, at (414) 640-1148.

ser-643-005 (20180131)

56. Traffic Meetings and Traffic Control Scheduling.

Every Wednesday by 10:00 AM, submit a detailed proposed 2-week look-ahead traffic closure schedule to the engineer. Type the detailed proposed 2-week look-ahead closure schedule into an Excel spreadsheet provided by the engineer. Enter information such as closure dates, duration, work causing the closure and detours to be used. Also enter information such as ongoing long-term closures, emergency contacts and general 2-month look-ahead closure information into the excel spreadsheet.

Meet with the engineer between 11:30 AM - 12:00 PM on Wednesdays at the project field office to discuss and answer questions on the proposed schedule. Edit, delete and add closures to the detailed proposed 2-week look-ahead schedule, as directed by the engineer, so that proposed closures meet specification requirements. Other edits, deletions or additions unrelated to meeting specification requirements may also be agreed upon with the engineer during the 11:30 AM meeting.

Every Wednesday at 2:00 PM, or as scheduled by the engineer, attend a weekly traffic meeting. The meeting will bring local agencies, project stakeholders, owner managers, owner engineers, contractors, document control and construction engineering personnel together to discuss traffic staging, closures and general impacts. Upon obtaining feedback from the meeting attendees, edit, delete and add information to the detailed 2-week look-ahead closure schedule, as needed. Submit the revised 2-week look-ahead to the engineer.

Obtain approval from the engineer for any mid-week changes to the closure schedule. Revise the 2-week look-ahead as required and obtain engineer approval.

sef-643-040 (20150319)

57. Public Involvement Meetings.

Participate in department-sponsored public involvement meetings as the engineer requests. Ensure that representatives of subcontractors also participate in those meetings if the engineer requests. Participation in public involvement meetings is considered incidental and no separate payment will be made for participating in public involvement meetings.

sef-999-040 (20160915)

58. Intelligent Transportation Systems (ITS) – Control of Materials.

Standard spec 106.2 – Supply Source and Quality

Add the following to standard spec 106.2:

The department will furnish a portion of equipment to be installed by the contractor. This department-furnished equipment includes the following:

Department-Furnished Items
Microwave Vehicle Detectors
72-Count Fiber Optic Cable
6-Count Fiber Optic Cable
Fiber Optic Termination Panels
Fiber Optic Splice Enclosures
CCTV Cameras
CCTV Camera Poles
Microwave Vehicle Detectors
Ethernet Switches
Pole-Mounted Cabinets
Solar Power Systems
Dynamic Message Sign

Pick-up small department-furnished equipment, such as communications devices, cameras, and controllers, from the department's Traffic Management Center (TMC), 433 W. St. Paul Ave., Milwaukee, WI 53203 at a mutually agreed upon time during normal state office hours. Contact the department's TMC at (414) 227-2166 to coordinate pick-up of equipment.

Large department-furnished equipment, such as poles will be delivered by the supplier to a contractor-controlled site within Milwaukee County. Delivery will not necessarily be in a "just in time" manner. Store the equipment until field installation. Provide location details and a contact for delivery coordination upon receiving the contract's Notice to Proceed.

Transportation of the equipment between the electric shop and the field or interim location(s) shall be the responsibility of the contractor.

Standard spec 106.3 – Approval of Materials

Add the following to standard spec 106.3:

Design/Shop Drawings

Prior to the purchase and/or fabrication of any of the components listed herein, and for any non-catalog item shown on the Material and Equipment List specified above, and no more than 30 days after notice to proceed, submit five copies of design drawings and shop drawings, as required, to the department for review. The items and the drawings that represent them shall meet the requirements of the standard specifications.

Design drawing submissions shall consist of signed and certified designs, design drawings, calculations, and material specifications for required items.

Shop drawings will be required for, but not limited to the following:

1. Mounting assemblies for the vehicle speed and classification sensors, including their attachment to the structure.
2. Mounting LED warning signs to the sign structure.
3. Mounting detail for dynamic message signs.
4. Any contractor-designed structure or foundation.

The department will complete its review of the material within 30 days from the date of receipt of the submission, unless otherwise specified. The department will advise the contractor, in writing, as to the acceptability of the material submitted. The department may determine that if no exceptions were taken for the item, it is approved, and no further action is required by the contractor; or the item may be partially or totally rejected, in which case modify and/or amend the submittal as required by the department and resubmit the item within 14 days. At that time, the review and approval cycle described above will begin again.

670-005 (20150630)

59. Pavement Breaking Equipment.

Use only hydraulic pavement breaking equipment for breaking pavement within 300 feet of any structure. Do not use guillotine, drop hammer, falling weight, gravity impact breakers or equivalent equipment. A multi-head hydraulic drop hammer is allowed unless a structure is within 50 feet of the roadway.

60. Removing Old Culverts and Bridges

Add the following to standard spec 203.3.1:

203.3.1.1 Structure Removal Site Safety Plan

(1) Prepare a Structure Removal Site Safety Plan covering all structure removal work included in the contract. Maintain posted copies of the Structure Removal Site Safety Plan at the site in the project field office. Provide two copies of the Structure Removal Site Safety Plan to the engineer at least four weeks before beginning removal work.

203.3.1.2 Structure Removal Plans

(1) Prepare a structure specific removal plan for each of the following existing structures indicating the methods and sequence of demolition:

Existing Structure	Structure Type	Feature On	Feature Under
B-40-24	4 span steel girder	Union Pacific Railroad	IH 43

This table does not include all the structure removals included in the contract. It is a list of existing structure removals included in the contract for which a structure specific detailed removal plan is required to be submitted.

Examine the existing structure plans and visit the site before preparing and submitting the structure removal plan(s). The contractor is responsible for the methods and sequence of demolition, including effects on the overall stability of each structure being removed. At a minimum, each removal plan shall include:

1. The name of the professional engineer, registered in the state of Wisconsin who will be on site and monitoring the removal of existing structures as required in this specification.
2. The name of the contractor's on-site-employee designated in responsible charge of all removal operations.
3. The removal method and sequence of removal for each individual structure, including the staging of bridge removals.
4. Analysis of the stability of the structure based on the methods and sequence of demolition proposed, to ensure that the structure is demolished in a safe and controlled manner. The analysis computations shall be prepared, signed and sealed by a professional engineer registered in the State of Wisconsin.
5. Design and details of temporary supports, shoring or temporary bracing, if required to stabilize portions of partially remaining structures during the removal sequence or support partially remaining structures after staged removals. Include design computations and detail drawings for all temporary supports, shoring and bracing that indicate the exact placement of the temporary supports, shoring or bracing; verification of design loads; attachment details; and methods for the safe transfer of loads from existing structural elements to be removed to the temporary supports, shoring, or bracing. Temporary support, shoring, or bracing design computations and drawings details are to be prepared, signed and sealed by a professional engineer registered in the State of Wisconsin.
6. Design and details of temporary support foundations. Include in the foundation design the evaluation of expected foundation settlement and the effect that this will have on the structure being supported. Temporary support foundation design computations and drawing details are to be prepared, signed and sealed by a professional engineer registered in the State of Wisconsin.
7. Equipment type and locations of equipment on the structure(s) or adjacent roadways during the removal operations
8. Locations and type of work to be performed directly adjacent to traffic.
9. Details and locations of protective covers and other measures to ensure that people, property and improvements will not be endangered or damaged as a result of the removal operations. Include methods for protecting any pavement surfaces including shoulders, concrete barriers, and other highway features.
10. Methods of removal, hauling and disposal, including haul routes and disposal destination.
11. A schedule of anticipated roadway and lane closures to accommodate removal operations. Include the timing of individual lane or temporary roadway closures and the nature of removal operations that will be performed during the lane or roadway closures.
12. Acknowledgement that the contractor and removal design engineer responsible for preparing the removal plan have visited the site and reviewed the existing structure plans in preparing the removal plan.

Structure Pre-Removal Meetings

After submission of the Structure Removal Site Safety Plan and required Structure Removal Plan(s), schedule and conduct structure pre-removal meetings at a time agreed to by the engineer. Hold structure pre-removal meetings at least three working days before beginning structure removal activities. If the engineer agrees before, multiple structure removals can be combined and discussed at one structure pre-removal meeting. Otherwise, schedule and conduct a separate structure pre-removal meeting for each structure to be removed.

Supplement standard spec 203.3.2.1 with the following:

Perform structure removals conforming to the submitted Structure Removal Site Safety Plan and applicable Structure Removal Plan(s).

Supplement standard spec 203.5.1(2) with the following:

Payment includes preparation and submittal of a Structure Removal Site Safety Plan; preparation and submittal of Structure Removal Plan(s) and performing all structure removal work conforming to the submitted plans.

61. Removing Concrete Barrier.

Add the following to standard spec 204.3.2.2.1 as paragraph fourteen:

(14) Under the Removing Concrete Barrier bid item, remove barrier and footing, unless specified in the plans, at the locations the plans show. Removal includes all required sawing conforming to standard spec 690.

Add the following to standard spec 204.5.1(2) as paragraph two:

(2) Payment for Removing Concrete Barrier is full compensation for all required sawing and removal of existing barrier and footing, and sludge removal.

sef-204-025 (20180104)

62. Storm Sewer.

Supplement standard spec 204.5.1 with the following:

QMP sampling, testing and documentation if applicable is incidental to removing storm sewer bid item and no separate payment will be made.

Supplement standard spec 608.2 with the following:

Two weeks prior to start of storm sewer construction, provide a shoring design and installation sequence for each location where shoring is to be used. Have a professional engineer, currently registered in the State of Wisconsin and knowledgeable of the specific site conditions and requirements, verify the adequacy of the design. Submit one electronic copy in portable document format of each shoring design, signed and sealed by the same professional engineer verifying the design, to the engineer for incorporation into the permanent project record.

Supplement standard spec 608.3.1.1 with the following:

(10) Incorporate excavated material in the work to the extent practicable. Use materials with suitable engineering properties for embankment.

(11) Dispose of surplus or unsuitable material as specified in standard spec 205.3.12.

Supplement standard spec 608.3.3 with the following:

Place rubber gasket joints over the spigot end or tongue of the entering pipe for all round storm sewer pipes horizontal and elliptical pipes with a rise less than or equal to 40-inches. Clean the gasket and the ends of the pipe from sand and gravel. If the gasket provided is neither factory lubricated nor self-lubricating, lubricate the outside of the gasket and the inside of the bell or groove of the last pipe with an engineer - approved vegetable lubricant immediately before making the joint. Place the spigot or tongue of the pipe being laid with the gasket in place into the bell or groove end of the previously laid pipe. Set pipe carefully to line and grade, and push or jack home. The engineer may order the use of a jack or “come-along” if deemed necessary to ensure that the joints are completely tight.

For horizontal elliptical pipe rise greater than 40-inches use mastic joint compound. Where factory lubricated rubber gasket joints are not available, clean the ends of the pipe from sand and gravel. Place engineer-approved mastic joint sealer on both the spigot and bell ends of the pipe being laid. Apply additional mastic around each joint exterior and wrap each joint with Geotextile Fabric Type DF laid flat meeting requirements of standard spec 645. Wrap each joint so that the Geotextile Fabric overlaps each joint a distance of approximately ½ of the pipe diameter.

Replace standard spec 608.5(2) with the following:

Payment for the Storm Sewer Pipe bid items is full compensation for providing all materials, including all special Y's, mitered sections, elbows and connections required; for all submittals; for excavating and wasting excess material, except rock excavation; for providing rubber gaskets; Lubrication of rubber gaskets; mastic joint sealer; for supporting utilities in storm sewer trench; for shoring design, providing a signed and sealed copy of the design; for installation, monitoring, and removal of shoring; for forming foundation; for laying pipe; for sealing joints and making connections to new or existing features, bedding material; for backfilling and granular backfill material; for QMP sampling, testing and documentation; for cleaning out; and absent the pertinent contract bid items, for restoring the work site.

63. Removing or Abandoning Miscellaneous Structures.

Replace standard spec 204.5.1(3) with the following:

When backfilling with Backfill Granular as specified in this special provision article or as directed by the engineer, the item Backfill Granular is considered incidental to the appropriate bid item.

At locations where Backfill Granular is not specified, contractor may choose to use either Backfill or Backfill Granular, and no separate payments will be made for using Backfill Granular.

Supplement standard spec 204.3.2.2 with the following:

Backfill existing storm sewer or existing storm sewer structure locations shown for removal or abandonment outside the new traveled way with native backfill immediately after completing the sewer work. Backfill according to standard spec 209 within the traveled way.

All backfill, including native material, provided for removal or abandonment of existing storm sewer structures and pipes is considered incidental to the appropriate bid item.

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64. Preparing Roadway Foundation.

Replace standard spec 205.3.2(5) with the following:

Completely remove pavement, asphaltic surface, and rigid base from within the roadbed slopes and underlying proposed embankments.

65. Roadway Excavation.

Add the following to standard spec 205.5.2(1):

Provide the department with an earth flow diagram within 30 calendar days of receiving the contract Notice to Proceed.

Identify all excavation required for the project, all sources of roadway embankment fill including offsite material, shrinkage and swell factors, proposed stockpile material, structure excavation (if used in embankments), waste, and fills anticipated to be treated with a soil drying agent. Provide start and finish dates for each grading area within the division. These dates should correspond to the dates shown on the project schedule.

Any deviation from the sequencing shown in the earth flow diagram will require approval from the engineer and will require an update to the earth flow diagram.

Attend biweekly earthwork meetings scheduled by the engineer to discuss earth flows, borrow sites, soil drying and strengthening, and other upcoming earthwork activities and technical issues.

Replace standard spec 205.3.13(3) with the following:

The engineer will evaluate cuts and shallow fills to determine if corrective work, EBS Excavation/EBS Backfill is required. If the engineer requests, provide loaded trucks and run the grade as the engineer directs to confirm yielding areas. Perform EBS Excavation/EBS Backfill in yielding areas as the engineer directs.

Add the following to standard spec 205.5.2(2):

The department will not pay EBS to remove frost from embankments or cut sections, unless the work is directed by the engineer. It is the contractor's responsibility to stage construction so that exposed subgrades do not freeze or to provide adequate frost protection. Any work necessary to remove and replace frozen materials from newly constructed embankments or exposed cut sections is considered incidental to the excavation bid items.

66. Right-of-Way Fencing.

Remove existing right-of-way chain link fencing, as shown in the plans, to allow for construction operations. A quantity of the Removing Fence, Item 204.0170 has been included in the contract for this purpose. Install new chain link fence within 30 calendar days of the removal of the existing fence. Provide temporary connections between existing and proposed fencing as needed to maintain continuous right-of-way fencing at all times. A quantity of the Fence Safety item has been included in the contract for this purpose. Where buried facilities or subsurface conditions do not permit driving posts for the safety fence, support posts by other means that will provide stability comparable to driven posts.

At no time leave a site where the fencing is inadequate to protect the general public.

67. Project Site Air Quality.

Because fine particulate matter levels for Milwaukee, Racine and Kenosha Counties are typically close to $PM_{2.5}$ limits and the project is in a non-attainment area for the federal 8-hour ozone standard, contributions from construction activities can have a major impact well beyond the project limits. Take practical measures to mitigate the impact of operating construction equipment on the air quality in and around the project site.

Voluntarily establishing the staging zones for trucks waiting to load and unload is encouraged by the department. Locate staging zones where idling of diesel-powered equipment will have minimal impact on abutting properties and the general public. The department will make signs available to help identify these zones. Have truckers queue up in these zones whenever it is practical. The department further encourages drivers to shut down diesel trucks as soon as it appears likely that they will be queued up for more than 10 minutes. Notify employees and sub-contractors about fueling and engine idling.

Portable Concrete Crusher Plants

Portable concrete crusher plants may need a NR 440 Concrete Crusher Plant Air Permit for air emissions. Please contact Wisconsin Department of Natural Resources to request additional information and permit application materials. The permit application process may take 3 months to complete.

sef-999-039 (20160929)

68. Abandoning Sewer, Item 204.0291.S.

A Description

This special provision describes abandoning existing sewer by filling it with cellular concrete according to the pertinent requirements of standard spec 204 and standard spec 501, as shown in the plans, and as hereinafter provided.

B Materials

Provide cellular concrete meeting the following specifications: 1 part cement, 1 part fly ash, 8 parts sand, or an approved equal, and water. Provide cement meeting the requirements of standard spec 501.2.1 for Type 1L Portland Cement. Provide sand meeting the requirements of standard spec 501.2.5.3 Provide water meeting the requirements of standard spec 501.2.4.

C Construction

Fill the abandoned sewer pipe with cellular concrete as directed by the engineer. In the event that the sewer cannot be completely filled from existing manholes, tap the sewer where necessary and fill from these locations.

D Measurement

The department will measure Abandoning Sewer in volume by the cubic yard according to standard spec 109.1.3.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
204.0291.S	Abandoning Sewer	CY

Payment is full compensation for furnishing all materials and excavating and backfilling where necessary.

stp-204-050 (20080902)

69. Removing Advance Flasher Assemblies Type 1, Item 204.9001.S.

A Description

This special provision describes removing advance flasher assemblies from the locations the plans show. Rewire and disconnect wiring in the control cabinet as necessary and properly dispose of materials conforming to standard spec 204.3.1.3.

B Materials

Dispose of all materials resulting from removing the Advance Flasher Assemblies including but not limited to poles, break-a-way bases, signal assemblies, bulbs, and wire off the job site.

C Construction

Do not remove existing advance flasher assemblies until proper disconnects and wiring changes in the controller cabinet have been made.

Where an existing advance flasher assembly is mounted to a light pole, remove all signal hardware including wire, conduit, signal assemblies and mounts. Where existing conduit has been installed under concrete sidewalk or roadway, do not remove buried conduit unless directed otherwise by the engineer or unless it is not possible to install new wire through the existing conduit.

D Measurement

The department will measure Removing Advance Flasher Assemblies (Type) by the unit, acceptably removed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
204.9001.S	Removing Advance Flasher Assemblies, Type 1	EACH

Payment is full compensation for removing advanced flasher assemblies; for rewiring, as necessary; for disconnecting wiring as necessary in the controller cabinet; and for properly disposing of all materials.

Removal of concrete bases and signs associated with this item will be measured and paid for separately.

stp-204-060 (20170615)

70. Removing Riprap, Item 204.9035.S.0001.

A Description

This special provision describes removing riprap conforming to standard spec 204.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Removing Riprap in cubic yards, acceptably completed.

E Payment

Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9035.S.0001	Removing Riprap	CY

stp-204-025 (20150630)

71. Removing Cable Barrier Terminal, Item 204.9060.S.0001.

A Description

This special provision describes removing cable barrier terminals according to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Removing Cable Barrier Terminal as each individual terminal, acceptably completed.

E Payment

Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.0001	Removing Cable Barrier Terminal	EACH

stp-204-025 (20150630)

72. Removing Distribution Center, Item 204.9060.S.1001.

A Description

This special provision describes removing an existing highway lighting distribution center and electrical service pedestal as shown on the plans, according to the pertinent provisions of standard spec 204, and as hereinafter provided.

B (Vacant)

C Construction

Remove the lighting distribution center and the electrical service pedestal and dispose off the project site.

The department will issue the demolition request to WE-Energies. Coordinate with the utility for disconnection of services. The department will pay any fees charged by the utility.

Removal of the concrete base will be paid under a separate bid item.

D Measurement

The department will measure Removing Distribution Center by each individual unit; acceptably completed.

E Payment

Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.1001	Removing Distribution Center	EACH

Payment is full compensation for removal of the distribution center, electrical service pedestal, and for utility coordination for the services.

stp-204-025 (20150630)

73. Removing Lighting Units, Item 204.9060.S.1002.

A Description

This special provision describes the removing lighting units as the plans show, conforming to standard spec 204, and as follows.

B Materials

All removed material shall become the property of the contractor and be disposed off the project site, except for LED and HPS light fixtures and bulbs. LED and HPS light fixtures and bulbs are considered hazardous material, disposal shall be done by the contractor utilizing STSP 659-500 Lamp, Ballast, LED, Switch Disposal by Contractor.

C Construction

Remove lighting units consisting of pole, arm, luminaire, lamp, wires, breakaway device, and associated hardware and appurtenances.

No removal work will be permitted without approval from the engineer. Removal shall start as soon as the temporary lighting or permanent lighting, as applicable, is placed in approved operation. An inspection and approval by the engineer will take place before any associated proposed permanent or temporary lighting is approved for operation.

D Measurement

The department will measure Removing Lighting Units by each individual unit removed, acceptably completed.

E Payment

Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.1001	Removing Lighting Units	EACH

SER-204.15 (20220214)

74. Removing Underdeck Lighting, Item 204.9060.S.1003.

A Description

This special provision describes removing underdeck lighting according to the pertinent provisions of standard spec 204, as shown on the plans, and hereinafter provided.

B (Vacant)

C Construction

No removal work will be permitted without approval from the engineer. Removal shall start as soon as the temporary lighting or permanent lighting, as applicable, is placed in approved operation. An inspection and approval by the engineer will take place before any associated proposed permanent or temporary lighting is approved for operation.

Remove underdeck lighting luminaires, attached conduits, wires, attached junction boxes, and associated hardware and appurtenances at locations shown in the plan and as directed by the engineer. Removed materials shall become the property of the contractor and shall be disposed off the project site according to pertinent requirements of standard spec 203.3.4. Lamp disposal shall be paid under a separate bid item.

All embedded conduits, junction boxes and hardware are not included in this bid item.

D Measurement

The department will measure Removing Underdeck Lighting by each unit removed and disposed of off the project site including associated materials, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060. S.1003	Removing Underdeck Lighting	EACH

Payment is full compensation for removing and disposing of luminaires, attached conduits, attached junction boxes, and hardware.

stp-204-025 (20150630)

75. Remove Traffic Signals Port Wash Rd & Bender Rd, Item 204.9060.S.3201; Remove Traffic Signals IH 43 Ramps & Good Hope Rd, Item 204.9060.S.3301; Remove Traffic Signals Good Hope Rd & Port Washington Rd, Item 204.9060.S.3303; Remove Traffic Signals Brown Deer Rd & CTH W, Item 204.9060.3305.

A Description

This special provision describes removing existing traffic signals at the intersection of Port Washington Rd & W Bender Rd/W Devon St, IH 43 Ramps & Good Hope Rd, Good Hope Rd & Port Washington Rd, and STH 32/Brown Deer Rd & CTH W/Port Washington Rd according to the pertinent provisions of standard spec 204 and as hereinafter provided. Specific removal items are noted in the plans, removing concrete bases and removing pull boxes are covered under separate removal items.

B (Vacant)

C Construction

Arrange for the de-energizing of the traffic signals with the local electrical utility after receiving approval from the engineer that the existing traffic signals can be removed.

Notify the City of Glendale Public Works Department at (414) 228-1710 at least five working days prior to the removal of the traffic signals at Port Washington Rd & W Bender Rd/W Devon St. Complete the removal work as soon as possible following shut down of the equipment.

Notify the department's Electrical Field Unit at (414) 266-1170 at least five working days prior to the removal of the traffic signals at IH 43 Ramps & Good Hope Rd and STH 32/Brown Deer Rd & CTH W/Port Washington Rd. Complete the removal work as soon as possible following shut down of the equipment. Removal of emergency vehicle preemption heads shall be paid for as a separate item.

Notify Daniel Murphy, Daniel.Murphy@milwaukeecountywi.gov and the engineer via email at least five working days prior to the removal of the traffic signals at Good Hope Rd & Port Washington Rd. A Milwaukee County representative shall be on site for the signal shut down. Contractor shall not remove existing traffic signal equipment until the engineer inspects and approves temporary traffic signals. Complete the removal work as soon as possible following the shutdown of this equipment.

The department, City of Glendale and Milwaukee County assume that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working traffic signal equipment to the engineer for concurrence. Any equipment not identified as damaged or not working, prior to removal, will be replaced by the contractor at no cost to the department, City of Glendale, or Milwaukee County.

Remove all standards and poles per plan from their concrete footings and disassemble out of traffic. Remove the transformer bases from each pole. Remove the cameras, emergency vehicle preemption heads (evp), radios, signal heads, push buttons, mast arms, monotube arms, luminaires, wiring/cabling, and traffic signal mounting devices from each signal standard, arm or pole. Ensure that all access hand-hole doors and all associated hardware remain intact. County forces will remove the controller, MMU, communications equipment and video detection and any other equipment that is loose on the shelves from the cabinet. The contractor shall remove the cabinet from the footing at Good Hope & Port Washington Rd only after county forces have removed all equipment that is loose on shelves within the cabinet. Remove the traffic signal cabinet from the concrete footing at IH 43 Ramps & Good Hope Rd, Good Hope Rd & Port Washington Rd, and STH 32/Brown Deer Rd & CTH W/Port Washington Rd. Dispose of the underground signal cable, internal wires and street lighting cable off the right-of-way in a manner consistent with state and federal regulations.

Deliver the remaining materials, except for traffic signal LED and luminaire lamp, switch, and ballasts, from Port Washington Rd & W Bender Rd/W Devon St to the City of Glendale. Contact the City of Glendale Public Works Department at (414) 228-1710 at least five (5) working days prior to delivery to make arrangements. Traffic signal LED and luminaire lamp, switch, and ballast disposal shall be paid for as a separate item.

Deliver the remaining materials, except for traffic signal LED and luminaire lamp, switch, and ballasts, from IH 43 Ramps & Good Hope Rd and STH 32/Brown Deer Rd & CTH W/Port Washington Rd to the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 at least five working days prior to delivery to make arrangements. Traffic signal LED and luminaire lamp, switch, and ballast disposal shall be paid for as a separate item.

Deliver the remaining materials, except for traffic signal LED and luminaire lamp, switch, and ballasts, from Good Hope Rd & Port Washington Rd to the Milwaukee County Traffic Signal Electrical Shop located at 10320 W Watertown Plank Road, Wauwatosa, WI 53226. Traffic signal LED and luminaire lamp, switch, and ballast disposal shall be paid for as a separate item.

D Measurement

The department will measure Remove Traffic Signals [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item.

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.3201	Remove Traffic Signals Port Wash Rd & Bender Rd	EACH
204.9060.S.3301	Remove Traffic Signals IH 43 Ramps & Good Hope Rd	EACH
204.9060.S.3303	Remove Traffic Signals Good Hope Rd & Port Washington Rd	EACH
204.9060.S.3305	Remove Traffic Signal Equipment Brown Deer Rd & CTH W	EACH

Payment is full compensation for removing, disassembling traffic signals, scrapping of some materials, disposing of scrap material, for delivering the requested materials to the department, City of Glendale, or Milwaukee County, and incidentals necessary to complete the contract work.

76. Remove Loop Detector Wire and Lead-in Cable Port Wash Rd & Bender Rd, Item 204.9060.S.3202; Remove Loop Detector Wire and Lead-in Cable IH 43 Ramps & Good Hope Rd, Item 204.9060.S.3302; Remove Loop Detector Wire and Lead-in Cable Brown Deer Rd & CTH W, Item 204.9060.3306.

A Description

This special provision describes removing loop detector wire and lead-in cable at the intersections of Port Washington Rd & W Bender Rd/W Devon St, IH 43 Ramps & Good Hope Rd, and STH 32/Brown Deer Rd & CTH W/Port Washington Rd. Removal will be according to standard spec 204, as shown in the plans, and as hereinafter provided.

B (Vacant)

C Construction

Notify the City of Glendale Public Works Department at (414) 228-1710 (Port Washington Rd & W Bender Rd/W Devon St) at least five working days prior to the removal of the loop detector wire and lead-in cable.

Notify the department's Electrical Field Unit at (414) 266-1170 (IH 43 Ramps & Good Hope Rd and STH 32/Brown Deer Rd & CTH W/Port Washington Rd) at least five working days prior to the removal of the loop detector wire and lead-in cable.

Remove and dispose of detector lead-in cable including loop wire for abandoned loops off the right-of-way.

Port Washington Rd & W Bender Rd/W Devon St:

Remove loop detector wire and lead-in cable at all loop detector locations.

IH 43 Ramps & Good Hope Rd:

Remove loop detector wire and lead-in cable at all loop detector locations.

STH 32/Brown Deer Rd & CTH W/Port Washington Rd:

Remove loop detector wire at Abandoned Loops and Loops 31, 32, 51, and 52 as shown in the plans. Remove lead-in cable at abandoned loop detector locations only.

D Measurement

The department will measure Remove Loop Detector Wire and Lead-in Cable [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.3202	Remove Loop Detector Wire and Lead in Cable Port Wash Rd & Bender Rd	EACH
204.9060.S.3302	Remove Loop Detector Wire and Lead in Cable IH 43 Ramps & Good Hope Rd	EACH
204.9060.S.3306	Remove Loop Detector Wire and Lead in Cable Brown Deer Rd & CTH W	EACH

Payment is full compensation for removing, scrapping, and disposing of material and incidentals necessary to complete the contract work.

77. Remove Pull Box Rings and Covers Brown Deer Rd & CTH W, Item 204.9060.3307.

A Description

This special provision describes removing existing pull box rings and covers at the intersection of STH 32/Brown Deer Rd & CTH W/Port Washington Rd according to the pertinent provisions of standard spec 204 and as hereinafter provided. Specific removal items are noted in the plans.

B (Vacant)

C Construction

Remove existing pull box rings and covers. Dispose of unsuitable material as specified under standard spec 205.3.12.

D Measurement

The department will measure Remove Pull Box Rings and Covers [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item.

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.3307	Remove Pull Box Rings and Covers Brown Deer Rd & CTH W	EACH

Payment is full compensation for removing and disposing of scrap materials.

78. Removing Communication Vault, Item 204.9060.S.3320.

A Description

This special provision describes removing an existing communication vault.

B Materials

Materials include existing communication vault and restoration materials such as backfill, topsoil, seeding, mulch, and fertilizer according to the pertinent provisions of standard spec 201, 625, 627, 629, 630, 636, and 640.

C Construction

Disconnect and cap conduit entering the communication vault. Remove and dispose of the communication vault. Backfill with material similar to the material surrounding the removal and restore the disturbed area by placing 4-inches of topsoil, and fertilize, seed, and mulch all disturbed areas according to the pertinent requirements of the standard specifications.

It is acceptable to re-use the vault lid in instances where new communications vaults are being installed in the project and the existing lid is undamaged. It is the contractor's responsibility to determine if the existing vault lids fit on the proposed vaults.

D Measurement

The department will measure Removing Communication Vault by the unit, removed from the ground, removed from the project site, and the disturbed area restored according to the contract.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item.

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.3320	Removing Communication Vault	EACH

Payment is full compensation for removing and disposing of a communication vault; for backfill, topsoil, fertilizer, seed and mulch; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

79. Removing Cable Barrier, Item 204.9090.S.0001.

A Description

This special provision describes removing cable barrier according to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C (Vacant)

Conform to standard spec 204.

D Measurement

The department will measure Removing Cable Barrier by the linear feet, acceptably completed.

E Payment

Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9090.S.0001	Removing Cable Barrier	LF

stp-204-025 (20150630)

80. Removing Modular Block Landscaping Retaining Wall, Item 204.9090.S.0002

A Description

This special provision describes removing Modular Block Landscaping Retaining Wall Conforming to standard spec 204.

This item also includes the removal and Disposal of modular blocks, caps, footing, stabilizing members and all components associated with the landscaping walls.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Removing Modular Block Landscaping Retaining Wall in linear feet, acceptably completed.

E Payment

Add the following to standard spec. 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9090.S.0002	Removing Modular Block Landscaping Retaining Wall	LF

81. Temporary Emergency Pullouts, Item 205.3000.S.

A Description

This special provision describes grading, furnishing, and placing crushed aggregate base course and signs to construct temporary emergency pullouts. This item also includes the removal of the pullouts including furnishing and placing finishing items as the plans show.

B (Vacant)

C Construction

Dispose of all surplus and unsuitable material as specified in standard spec 205.3.12.

D Measurement

The department will measure Temporary Emergency Pullouts, acceptably completed, by the unit.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
205.3000.S	Temporary Emergency Pullouts	EACH

Payment is full compensation for grading, shaping, and compacting; providing and placing crushed aggregate base course; providing and placing signs; removing as required; and for providing and placing topsoil, fertilizer, seed, and mulch.

stp-205-020 (20080902)

82. Roadway and Drainage Excavation.

Supplement standard spec 205.3.2 (4) with the following:

(4a) If placing embankment against existing railway side slopes steeper than one vertical to 4 horizontal, provide vertically faced horizontal steps or benches in the slopes to support the embankment. Cut the base of each step as nearly horizontal as possible and compact the vertical cut in its entirety to the degree specified for the project. Do not use vertical benches greater than 5 feet high. Perform benching operations so as to avoid undermining any adjacent existing tracks or structures. Do not keep steps cut into the slope unsupported overnight. The contractor may cut or form the steps or benches while placing the embankment.

Supplement standard spec 205.3.2 with the following:

(6) In railway cut sections, the contractor shall scarify the top six (6) inches of material below the subgrade, adjust the moisture content, and recompact such scarified material.

Supplement standard spec 205.3.7.2 with the following:

(10) No blasting will be allowed within the railway limits without a one week minimum advanced notice given to UPRR to ensure safe and continuous train operations.

83. Embankment at Union Pacific Railroad.

Modify standard spec 207.2(2) with the following:

For the top 12 inches of railway earth embankments, use materials:

Free from large stone, rock, and broken concrete or other materials that significantly affect scarifying, compacting and finishing the subgrade.

That provide sufficient stability for construction and foot traffic to allow for placement of subballast on top of the embankment without the embankment material losing compaction.

That provide sufficient stability to maintain required finished subgrade elevation.

Supplement standard spec 207.2 with the following:

(4) For railway embankments, material used shall be Backfill Granular Grade 1 containing no logs, stumps, brush, or other perishable material.

Supplement standard spec 207.3.2 with the following:

(2) Prepare foundations and subgrade for proposed embankments and fills in railway limits by scarifying the top 6 inch layer of the existing ground, adjusting the moisture content of the scarified material and compacting the scarified soils as specified in 207.3.6.3 (3).

(3) Rate of fill placement shall not exceed 5 feet of fill per seven days.

Supplement standard spec 207.3.6.1 with the following:

(5) Use special compaction for railway embankments as described in standard spec 207.3.6.3.

Supplement standard spec 207.3.6.3(3) with the following:

Compact all railway embankments to 100 percent of maximum dry density within 20 feet of each side of culverts and within 100 feet behind each railway bridge abutment; compact all other railway embankments to 95 percent of maximum dry density elsewhere.

Supplement standard spec 207.3.6.3(4) with the following:

Determine the maximum dry density of all railway embankments according to ASTM D1557. Use a department-qualified laboratory for this determination. The engineer or UPRR engineer may elect to perform quality assurance testing on split samples of the proposed material. Determine the in-place dry density of compacted embankment material according to ASTM D1556 or by other engineer- or UPRR engineer-approved methods. Provide the results of the density testing to the engineer and the UPRR engineer within 24 hours of the testing. Frequency of compaction testing shall be one test per 2000 square feet per lift of embankment.

Verify the angle of internal friction through the Direct Shear Test in conformance to AASHTO T-236. Perform one test for every 1000 cubic yards of compacted material placed as part of the track subgrade. Compact tested material using similar procedures described above for field compaction. Report the results to the engineer and the UPRR engineer for approval.

Supplement standard spec 207.5 with the following:

Determination of dry density and compaction testing will be incidental to embankment construction and no separate payment will be made.

84. Prepare Foundation for Asphaltic Shoulders.

Add the following to standard spec 211.3.1:

Excavate and remove Base Aggregate Dense 1 ¼-Inch installed in a previous sequence for nightly freeway shoulder restoration to ensure no vertical drop-offs greater than 2-inches adjacent to the travel lanes and to provide shoulder cross slopes with an 8% maximum rollover with the adjacent travel lanes for Peak Hour and Off Peak Hour freeway traffic operations providing two lanes in each direction.

Add the following to standard spec 211.5.1:

Payment for the Prepare Foundation for Asphaltic Shoulders bid item is full compensation for excavating, removing, hauling, and disposing of Base Aggregate Dense 1 ¼-Inch installed in a previous sequence for nightly freeway shoulder restoration to ensure no vertical drop-offs greater than 2-inches adjacent to the travel lanes and to provide shoulder cross slopes with an 8% maximum rollover with the adjacent travel lanes for Peak Hour and Off Peak Hour freeway traffic operations providing two lanes in each direction.

85. QMP Subgrade.

A Description

This special provision describes requirements for subgrade materials within the roadway foundation as defined in standard spec 101.3. Conform to standard spec 207 as modified in this special provision for all work within the roadway foundation at the following locations:

- IH 43 mainline
- IH 43 ramps
- Cross roads
- Local roads

Provide and maintain a quality control program. A quality control program is defined as all activities, including process control inspection, sampling and testing, documentation, and necessary adjustments in the process that are related to the construction of subgrade which meets all the requirements of this provision.

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures. The contractor may obtain the CMM from the department's web site at:

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/rdwy/default.aspx

B Materials

B.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform grading work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. Ensure that the plan provides the following elements:

- An organizational chart with names, telephone numbers, current certifications or titles, and roles and responsibilities of QC, QV, and IA personnel.
- The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
- An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
- Location of the QC laboratory, retained sample storage, and control charts and other documentation.

- A summary of the locations and calculated quantities to be tested under this provision.
- An explanation regarding the basis of acceptance for material that cannot be tested by nuclear methods due to a high percentage of oversized particles.

B.2 Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present at the site during all subgrade preparation, fill placement, compaction, and nuclear testing activities. Have a nuclear density technician certified under HTCP at level I perform field density and field moisture content testing.

B.3 Laboratory

Perform quality control testing in a department-qualified laboratory. Obtain information on the Wisconsin laboratory qualification program from:

Materials Laboratory
3502 Kinsman Boulevard
Madison, Wisconsin 53704-2583
Telephone: (608) 246-7938

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/qual-labs.aspx

B.4 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at:

http://www.atwoodsystems.com/.

Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge within 12 months before using it on the project. Retain a copy of the calibration certificate with the gauge. Nuclear density gauge calibration verification is required daily when earthwork construction operations require testing under this special provision article. This calibration verification shall be performed using the departments "Validator" apparatus which is located at the field office. Establish a standard gauge reading for the "Validator" using the ten test average method. The source emitter depth for calibration verification, in the direct transmission mode, will be determined by the engineer. This procedure will establish the "Validator" apparatus, as the contractor's project reference site.

Conform to ASTM D 2950 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 1 minute of nuclear gauge count time.

B.5 Soil Source Study

Conduct and submit a soil source study before beginning of grading operations. Ensure that this study identifies each distinct soil type on the project within the top 15 feet of cut areas and all borrow material. Provide the in-bank natural moisture content for each soil. Develop moisture-density curves for each identified soil type by utilizing AASHTO T 99 Method A or Method C based on gravel content, with a minimum of 5 individual points, and a zero air voids curve at a specific gravity of 2.65. If a different specific gravity is used perform a specific gravity test. Determine the maximum density and corresponding optimum moisture level for each soil type. Develop a site-specific family of Proctor curves for this contract from the completed soil source study and submit to the engineer for review and acceptance.

Perform characterization tests on each of the soil types selected for the soil source study. The tests for roadway include AASHTO T 89, AASHTO T 90, AASHTO T 27 or AASHTO T88 (without hydrometer), and AASHTO T 11. Classify each soil type selected according to the AASHTO soil classification system based on the characterization tests. Do not begin grading operations until the engineer accepts the soil source study.

Use the soil types identified in the soil source study with corresponding maximum densities and optimum moisture values to determine the compaction compliance on the project. Continue the soil source study in those areas of cuts greater than 15 feet that were not accessible during the initial study. Include data on

additional soil types if project conditions change. Ensure that tests of additional soil types are complete, and the engineer accepts the results before incorporating the material into the roadway foundation.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department's split samples to the field office.

Retain and identify two representative samples of each Proctor. Submit one sample to the engineer. Retain one sample on site for use when performing textural identification.

B.6 Quality Control Documentation

B.6.1 Control Charts

Maintain separate control charts for the field density and field moisture content of each grading area. Designate grading areas within the project as follows:

- Embankment portions of the project, except within 200 feet of bridge abutments.
- Embankment within 200 feet of bridge abutments.
- Subgrade cut portions of the project.
- Embankment in pipe culvert, sewer and waterline trenches.
- Structure and granular backfill placed at bridge abutments.
- Embankments of the project where embankments are 20 feet or higher regardless of location to be known as special compaction area.

Ensure that all tests are recorded and become part of the project records. Plot required test results on the control charts. Include random and engineer-requested testing but only include the contractor's randomly selected QC test results in the 4-point running average. The contractor may plot other contractor-performed process control or informational tests on the control charts, but do not include them in 4-point running averages.

Post control charts in an engineer-approved location and update daily. Ensure that the control charts include the project number, the test number, each test element, the applicable control limits, the contractor's individual test results, the running average of the last 4 data points, and the engineer's quality verification test data points. Use the control charts as part of a process control system for identifying potential problems and assignable causes. Format control charts according to the CMM.

Submit control charts to the engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

B.6.2 Records

Document all observations, inspection records, and adjustments to fill placement procedures, soil changes, and test results daily. Note the results of the observations and inspection records as they occur in a permanent field record.

Provide copies of the field density and field moisture running average calculation sheets, records of procedure adjustments, and soil changes to the engineer and QV personnel daily.

Submit original testing records to the engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

B.7 Contractor Testing

B.7.1 General

Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present during all subgrade preparation, fill placement, compaction, and testing. Have a nuclear density technician certified under HTCP at level I perform the testing for field density and field moisture content. During subgrade construction, use sampling and testing methods identified in the CMM to perform the required tests at randomly selected locations at the indicated minimum frequency for each grading area.

Determine the cubic yards for testing based on a total load count system the engineer and contractor agree to.

For each test, provide the cubic yards represented and the test location to within 2 feet horizontally and 0.5 feet vertically. Use project stationing to determine horizontal location and grade stakes to determine vertical location.

Test areas of suspect compaction or areas which appear to be nonconforming as determined by the engineer.

B.7.2 Field Density and Field Moisture

Perform the field density and field moisture tests using the nuclear density meter method according to AASHTO T 310. Ensure that each field density test material is related to one of the specific soil types identified in the soil source study in determining the percent compaction. Use textural identification as the primary method of establishing this relationship. Use the representative samples retained from the soil source study when performing the textural identification. Use a coarse particle correction according to AASHTO T 224.

If field density and field moisture tests cannot be performed by the nuclear density method due to a high percentage of oversized particles as determined according to AASHTO T 99 for highway embankments, observe the placement of the embankment and document the basis of acceptance. Document daily quantities of untested embankment and locations where untested embankment is placed, and keep a cumulative quantity of untested embankment material during the project. Include the daily documentation and a summary of the cumulative quantity of untested embankment material with the project records.

B.7.3 Testing Frequency

B.7.3.1 Subgrade Embankment portions of the project, except within 200 Feet of bridge abutments

Perform the required tests at the following frequencies:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One per 2,000 cubic yards of fill per lift or one test per grading area per day whichever yields the most tests.

B.7.3.2 Subgrade Embankment Within 200 Feet of Bridge Abutments

Perform the required tests at the following frequencies:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One per 1,000 cubic yards of fill per lift or one test per grading area per day whichever yields the most tests.

B.7.3.3 Subgrade Cut

Perform the required tests at the following frequencies:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One test per 1,000 linear feet of cut or one test per cut area whichever yields the most tests. The testing will be completed at the finished subgrade elevation.

B.7.3.4 Subgrade Embankment in Pipe Removals, Pipe Culvert, Sewer and Waterline Trenches

Perform the required tests at the following minimum frequencies per trench run between structures. Test trenches individually at the frequency listed in this section. For example, lateral lines and trunk lines are to be considered individual trenches:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One test per 100 CY of backfill placed per lift or one test per day whichever yields the most tests.

B.7.3.5 Structure and Granular Backfill at Bridge Abutments

Perform the required tests at the following minimum frequencies:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One test per 2 feet of vertical backfill height per abutment.

B.7.3.6 Embankments of the project 20 feet or higher regardless of location to be known as special compaction area

Perform the required tests at the following minimum frequencies but exclude MSE wall backfill:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One per 2,000 cubic yards of fill per lift or one test per grading area per day whichever yields the most tests.

B.7.4 Control Limits

B.7.4.1 Field Density

B.7.4.1.1 General Conditions

The lower control limit for field density measurements is a minimum of 95.0 percent of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4-point running average and a minimum of 94.0 percent of the maximum dry density for any individual test.

B.7.4.1.2 Embankments of the project 20 feet or higher regardless of zone to be known as special compaction area excluding MSE wall backfill

The lower control limit for field density measurements in the special compaction area is a minimum of 98.0 percent of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4-point running average and a minimum of 95.0 percent of the maximum dry density for any individual test.

B.7.4.2 Field Moisture Content

The upper control limit for the field moisture content is 105.0 percent of the optimum moisture as determined by AASHTO T 99 or T 272 for the 4-point running average.

The lower control limit for the field moisture content is 65.0 percent of the determined optimum moisture for the 4-point running average. There is no lower control limit for the field moisture of material having less than 5 percent passing the No. 200 sieve.

B.7.5 Corrective Action

Notify the engineer if an individual field density test falls below the individual test control limit. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer to improve the density of the subgrade material. After corrective action, perform a randomly located retest within the represented quantity to ensure that the material is acceptable.

Notify the engineer if the field density or field moisture running average point falls below the running average control limit for field density or outside the control limits for field moisture. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer to improve the quality of the material represented by the running average point. Retest each corrected area at a new random location within its represented quantity and determine a new 4-point running average. If the new running average is not acceptable, perform further corrective actions and retest at new random locations.

If the contractor's control data is proven incorrect resulting in a field density or field moisture point falling below the control limit for field density or outside the control limits for field moisture, the subgrade is unacceptable. Employ the methods described in this special provision for unacceptable material.

B.8 Department Testing

B.8.1 General

The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all verification and independent assurance personnel for the project.

The department will provide field density and field moisture test results to the contractor on the day of testing. Test results from Proctor split samples will be provided to the contractor within 7 business days after the sample has been received by the department.

B.8.2 Verification Testing

The department will have an HTCP technician, or ACT under the direction of a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified for contractor testing personnel for each test being verified. The department will notify the contractor before testing so the contractor can observe QV testing.

The department will test field density and field moisture randomly at locations independent of the contractor's QC work. The department will use split samples for verification of Proctor testing. In all cases, the department will conduct the verification tests in a separate laboratory and with separate equipment from the contractor's QC tests.

The department will perform verification testing as follows:

1. The department will conduct verification tests on Proctor split samples taken by the contractor. These samples may be from the Soil Source Study or sample locations chosen by the engineer from anywhere in the process. The minimum verification testing frequency is one per 90,000 cubic yards, with at least one for each soil type identified in the Soil Source Study.
2. The engineer may select any contractor-retained sample for verification testing.
3. The department will conduct at least one verification test for field density and field moisture per 20,000 cubic yards.

Plot verification tests on the contractor's quality control charts as specified in B.6.1. Do not include verification tests in the 4-point running average.

If verification tests are within specified control limits, no further action is required. If verification tests are not within specified control limits, the engineer and contractor will jointly investigate any testing discrepancies. The investigation may include additional testing as well as review and observation of both the department's and contractor's sampling and testing procedures and equipment. Both parties will document all investigative work.

Correct all deficiencies. If the contractor does not respond to an engineer request to correct a deficiency or resolve a testing discrepancy, the engineer may suspend grading work until action is taken. Resolve disputes as specified in B.9.

B.8.3 Independent Assurance Testing

Independent assurance is unbiased testing the department performs to evaluate the department's verification and the contractor's QC sampling and testing including personnel qualifications, procedures, and equipment. The department will perform the independent assurance review according to the department's independent assurance program, which may include one or more of the following:

1. Split sample testing.
2. Proficiency sample testing.
3. Witnessing sampling and testing.
4. Test equipment calibration checks.
5. Reviewing required worksheets and control charts.
6. Requesting that testing personnel perform additional sampling and testing.

Plot the independent assurance tests on the contractor's quality control charts as specified in B.6.1. Do not include independent assurance tests in the 4-point running average.

If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or cooperate in resolving identified deficiencies, the engineer may suspend grading work until action is taken. Resolve disputes as specified in B.9.

B.9 Dispute Resolution

The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming product, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party tests to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

B.10 Acceptance

The department will accept the material tested under this provision based on the contractor QC tests unless it is shown through verification testing or the dispute resolution process that the contractor's test results are in error.

C (Vacant)

D (Vacant)

E Payment

Costs for all sampling, testing, and documentation required under this special provision are incidental to the work. If the contractor does not perform the work required under this special provision, the department may reduce the contractor's pay. The department will administer pay reduction under the non-performance of QMP administrative item.

86. QMP Subgrade UPRR.

A Description

This special provision describes requirements for subgrade materials within the roadbed as defined in standard spec 101.3. Conform to standard spec 207 as modified in this special provision for all work within the roadbed at the following locations:

- All UPRR embankment from Station 82UPRR+00 to Station 125UPRR+00.

Provide and maintain a quality control program. A quality control program is defined as all activities, including process control inspection, sampling and testing, documentation, and necessary adjustments in the process that are related to the construction of subgrade which meets all the requirements of this provision.

Chapter 8 of the department’s construction and materials manual (CMM) provides additional detailed guidance for Quality Management Plan (QMP) work and describes sampling and testing procedures. The contractor may obtain the CMM from the department’s web site at:

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/rdwy/default.aspx

B Materials

B.1 Quality Control Plan

Submit a comprehensive written Quality Control (QC) plan to the engineer and the UPRR engineer at or before the pre-construction meeting. Do not perform grading work before the engineer and the UPRR engineer review and accept the plan. Construct the project as the plan provides.

Do not change the quality control plan without the review of the engineer and UPRR engineer. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and the UPRR engineer and post in the contractor’s laboratory as changes are adopted. Ensure that the plan provides the following elements:

- An organizational chart with names, telephone numbers, current certifications or titles, and roles and responsibilities of QC personnel.
- The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
- An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.

- Location of the QC laboratory, retained sample storage, and control charts and other documentation.
- A summary of the locations and calculated quantities to be tested under this provision.
- An explanation regarding the basis of acceptance for material that cannot be tested by nuclear methods due to a high percentage of oversized particles.

B.2 Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present at the site during all subgrade preparation, fill placement, compaction, and nuclear testing activities. Have a nuclear density technician certified under HTCP at level I perform field density and field moisture content testing.

B.3 Laboratory

Perform quality control testing in a department-qualified laboratory. Obtain information on the Wisconsin laboratory qualification program from:

Materials Laboratory
3502 Kinsman Boulevard
Madison, Wisconsin 53704-2583
Telephone: (608) 246-7938
https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/qual-labs.aspx

B.4 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer and UPRR engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at:

https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/ap-current/nuclear-gauge-list.pdf.

Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge within 12 months before using it on the project. Retain a copy of the calibration certificate with the gauge. Nuclear density gauge calibration verification is required daily when earthwork construction operations require testing under this special provision article. This calibration verification shall be performed using the departments "Validator" apparatus which is located at the Construction Field Office. Establish a standard gauge reading for the "Validator" using the ten test average method. The source emitter depth for calibration verification, in the direct transmission mode, will be determined by the engineer and UPRR engineer. This procedure will establish the "Validator" apparatus, as the contractor's project reference site.

Conform to ASTM D2950 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

B.5 Soil Source Study

Conduct and submit a soil source study before beginning of grading operations. Ensure that this study identifies each distinct soil type on the project within the top 15 feet of cut areas and all borrow material. Provide the in-bank natural moisture content for each soil. Develop moisture-density curves for each identified soil type by utilizing ASTM D1557 for railway embankments, with a minimum of 5 individual points, and a zero air voids curve at a specific gravity of 2.65. If a different specific gravity is used perform a specific gravity test. Determine the maximum density and corresponding optimum moisture level for each soil type. Develop a site-specific family of Proctor curves for this contract from the completed soil source study and submit to the engineer and the UPRR engineer for review. Obtain acceptance from both before proceeding.

Perform characterization tests on each of the soil types selected for the soil source study. The tests for railway include ASTM D4318, ASTM C136, and ASTM C117. Classify each soil type selected according to the ASTM soil classification system based on the characterization tests. Do not begin grading operations until the engineer and the UPRR engineer accept the soil source study.

Use the soil types identified in the soil source study with corresponding maximum densities and optimum moisture values to determine the compaction compliance on the project. Continue the soil source study in those areas of cuts greater than 15 feet that were not accessible during the initial study. Include data on additional soil types if project conditions change. Ensure that tests of additional soil types are complete, and the engineer and the UPRR engineer accept the results before incorporating the material into the railway foundation.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer or the UPRR engineer direct otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department’s split samples to the department at:

Regional Materials Laboratory
Attn: Paul Emmons
935 S. 60th Street
West Allis, Wisconsin 53214
Telephone: (414) 266-1158

Retain and identify two representative samples of each Proctor. Submit one sample to the engineer. Retain one sample on site for use when performing textural identification.

B.6 Quality Control Documentation

B.6.1 Control Charts

Maintain separate control charts for the field density and field moisture content of each grading area. Designate grading areas within the project for Embankment carrying UPRR track sections.

Ensure that all tests are recorded and become part of the project records. Plot required test results on the control charts. Include random and engineer- or UPRR engineer-requested testing but only include the contractor’s randomly selected QC test results in the 4-point running average. The contractor may plot other contractor-performed process control or informational tests on the control charts, but do not include them in 4-point running averages.

Post control charts in an engineer-approved location and update daily. Ensure that the control charts include the project number, the test number, each test element, the applicable control limits, the contractor’s individual test results, the running average of the last 4 data points, and the engineer’s quality verification test data points. Use the control charts as part of a process control system for identifying potential problems and assignable causes. Format control charts according to the CMM.

Submit control charts to the engineer and the UPRR engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

B.6.2 Records

Document all observations, inspection records, and adjustments to fill placement procedures, soil changes, and test results daily. Note the results of the observations and inspection records as they occur in a permanent field record.

Provide copies of the field density and field moisture running average calculation sheets, the one-point Proctor tests, records of procedure adjustments, and soil changes to the engineer and the UPRR engineer, daily.

Submit original testing records to the engineer and the UPRR engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

B.7 Contractor Testing

B.7.1 General

Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present during all subgrade preparation, fill placement, compaction, and testing. Have a nuclear density technician certified under HTCP at level I perform the testing for field density and field moisture content. During subgrade construction, use sampling and testing methods identified in the CMM to perform the required tests at randomly selected locations at the indicated minimum frequency for each grading area.

Determine the cubic yards for testing based on a total load count system the engineer and contractor and the UPRR engineer, agree to.

For each test, provide the cubic yards represented and the test location to within 2 feet horizontally and 0.5 feet vertically. Use project stationing to determine horizontal location and grade stakes to determine vertical location.

Test areas of suspect compaction or areas which appear to be nonconforming as determined by the engineer and the UPRR engineer.

B.7.2 Field Density and Field Moisture

Perform the field density and field moisture tests using the nuclear density meter method according to ASTM D6938 for railway embankments. Ensure that each field density test material is related to one of the specific soil types identified in the soil source study in determining the percent compaction. Use textural identification as the primary method of establishing this relationship. Use the representative samples retained from the soil source study when performing the textural identification. Use a coarse particle correction according to ASTM D4718 for railway embankments.

If field density and field moisture tests cannot be performed by the nuclear density method due to a high percentage of oversized particles as determined according to ASTM D1557 for railway embankments, observe the placement of the embankment and document the basis of acceptance. Document daily quantities of untested embankment and locations where untested embankment is placed and keep a cumulative quantity of untested embankment material during the project. Include the daily documentation and a summary of the cumulative quantity of untested embankment material with the project records.

B.7.3 One-Point Proctor

Obtain a representative sample of the fill material and test according to AASHTO T 272. Compare the sample to the curves developed in the soils source study to determine the maximum dry density and optimum moisture. Use the appendix for AASHTO T 272 for railway embankments as a guide in this determination.

B.7.4 Testing Frequency

B.7.4.1 Embankment carrying UPRR track sections

Perform the required tests at the following minimum frequencies:

Test	Minimum Frequency
Field Density (ASTM D6938)	One test per 2,000 square yards of fill per lift or one test per 1,000 feet of alignment or one test per grading area per day whichever yields the most tests.
One-Point Proctor AASHTO T 272	One test per 6,000 cubic yards or when a change in fill material occurs.

B.7.4.2 Open Graded Base Aggregate at UPRR Bridge Abutments

Refer to Base Aggregate Open Graded Special elsewhere in these special provisions, for compaction requirements.

B.7.5 Compaction Zones

B.7.5.1 Embankment Carrying UPRR Track Sections

All embankment carrying UPRR track sections is subject to the quality controls for UPRR embankment material. All material tested will be held to the same control limits.

B.7.6 Control Limits

B.7.6.1 Field Density

Test using the nuclear density meter method, as outlined throughout subsection B.7 of this special provision, on soil at least 4” below the top surface to ensure adequate confinement.

B.7.6.1.1 Embankments carrying UPRR track sections in the top three feet of fill

Except in locations noted in subsections B.7.6.1.2 and B.7.6.1.3 below, the lower control limit for field density measurements is a minimum of 95.0 percent of the maximum dry density as determined by ASTM D1557 or T 272 for the 4-point running average and a minimum of 95.0 percent of the maximum dry density for any individual test.

B.7.6.1.2 Embankments carrying UPRR track sections below the top three feet of fill

Except in locations noted in subsection B.7.6.1.1 and B.7.6.1.3 below, the lower control limit for field density measurements is a minimum of 95.0 percent of the maximum dry density as determined by ASTM D1557 or T 272 for the 4-point running average and a minimum of 90.0 percent of the maximum dry density for any individual test.

B.7.6.1.3 Embankments carrying UPRR track sections near structures

When embankments that carry UPRR track sections are located within 20 feet of each side of culverts and within 100 feet behind each railway bridge abutment, the lower control limit for field density measurements is a minimum of 100.0% of the maximum dry density as determined by ASTM D1557 or T 272 for the 4-point running average and a minimum of 100.0% of the maximum dry density for any individual test.

B.7.6.2 Field Moisture Content

B.7.6.2.1 General Conditions

The upper control limit for the field moisture content is 106.0 percent of the optimum moisture as determined by ASTM D1557 Modified Proctor or T 272, for the 4-point running average.

The lower control limit for the field moisture content is 100.0 percent of the determined optimum moisture for the 4-point running average.

There are no control limits for the field moisture of material having less than 5 percent passing the No. 200 sieve, although make every effort to keep near the optimum moisture content.

B.7.6.2.2 Embankment carrying UPRR track sections

Determine all compaction using ASTM D6938 and ASTM D1557 for moisture and density and for field tests. Provide copies of all soils tests and observations to the engineer and the UPRR engineer. The UPRR engineer will not approve placing sub-ballast before these tests are received.

B.7.7 Corrective Action

Notify the engineer and the UPRR engineer if an individual field density test falls below the individual test control limit. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer and the UPRR engineer to improve the density of the subgrade material. After corrective action, perform a randomly located retest within the represented quantity to ensure that the material is acceptable.

Notify the engineer and the UPRR engineer if the field density or field moisture running average point falls below the running average control limit for field density or outside the control limits for field moisture. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer and the UPRR engineer to improve the quality of the material represented by the running average point. Retest each corrected area at a new random location within its represented quantity and determine a new 4-point running average. If the new running average is not acceptable, perform further corrective actions and retest at new random locations.

If the contractor's control data is proven incorrect resulting in a field density or field moisture point falling below the control limit for field density or outside the control limits for field moisture, the subgrade is unacceptable. Employ the methods described in this special provision for unacceptable material.

B.8 Department Testing

B.8.1 General

The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all verification and independent assurance personnel for the project.

The department will provide field density and field moisture test results to the contractor on the day of testing. Test results from Proctor split samples will be provided to the contractor within 7 business days after the sample has been received by the department.

B.8.2 Verification Testing

The department will have an HTCP technician, or ACT under the direction of a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified for contractor testing personnel for each test being verified. The department will notify the contractor before testing so the contractor can observe QV testing.

The department will test field density and field moisture randomly at locations independent of the contractor’s QC work. The department will use split samples for verification of Proctor testing. In all cases, the department will conduct the verification tests in a separate laboratory and with separate equipment from the contractor's QC tests.

The department will perform verification testing as follows:

1. The department will conduct verification tests on Proctor split samples taken by the contractor. These samples may be from the Soil Source Study or the one-point Proctor or sample locations chosen by the engineer and the UPRR engineer from anywhere in the process. The minimum verification testing frequency is one per 90,000 cubic yards, with at least one for each soil type identified in the Soil Source Study.
2. The department will test the first split sample obtained by the contractor for the one-point Proctor. The engineer and the UPRR engineer may select any contractor-retained sample for verification testing.
3. The department will conduct at least one verification test for field density and field moisture per 20,000 cubic yards.

Plot verification tests on the contractor’s quality control charts as specified in B.6.1. Do not include verification tests in the 4-point running average.

If verification tests are within specified control limits, no further action is required. If verification tests are not within specified control limits, the engineer and the UPRR engineer and contractor will jointly investigate any testing discrepancies. The investigation may include additional testing as well as review and observation of both the department's and contractor's sampling and testing procedures and equipment. Both parties will document all investigative work.

Correct all deficiencies. If the contractor does not respond to an engineer or UPRR engineer request to correct a deficiency or resolve a testing discrepancy, the engineer or UPRR engineer may suspend grading work until action is taken. Resolve disputes as specified in B.9.

B.8.3 Independent Assurance Testing

Independent assurance is unbiased testing the department performs to evaluate the department's verification and the contractor's QC sampling and testing including personnel qualifications, procedures, and equipment. The department will perform the independent assurance review according to the department’s independent assurance program, which may include one or more of the following:

1. Split sample testing.
2. Proficiency sample testing.
3. Witnessing sampling and testing.
4. Test equipment calibration checks.
5. Reviewing required worksheets and control charts.
6. Requesting that testing personnel perform additional sampling and testing.

Plot the independent assurance tests on the contractor’s quality control charts as specified in B.6.1. Do not include independent assurance tests in the 4-point running average.

If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer or UPRR engineer may suspend grading work until action is taken. Resolve disputes as specified in B.9.

B.9 Dispute Resolution

The engineer and UPRR engineer, and the contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's or UPRR engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The UPRR, department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming product, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer, UPRR engineer, and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party tests to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

B.10 Acceptance

The department will accept the material tested under this provision based on the contractor QC tests unless it is shown through verification testing or the dispute resolution process that the contractor's test results are in error.

C (Vacant)

D (Vacant)

E Payment

Costs for all sampling, testing, and documentation required under this special provision are incidental to the work. If the contractor fails to perform the work required under this special provision, the department may reduce the contractor's pay. The department will administer pay reduction under the Non-performance of QMP administrative item.

SEF Rev. 17_0310

87. Base Aggregate Dense 1 1/4-Inch for Lower Base Layers.

Replace standard spec 305.2.2.1(2) with the following:

(2) Unless the plans or special provisions specify otherwise, do the following:

1. Use 1 1/4-inch base throughout the full base depth.
2. Use 3/4-inch base in the top 3 inches of the unpaved portion of shoulders. Use 3/4-inch base or 1 1/4-inch base elsewhere in shoulders.

stp-305-020 (20080902)

88. Stamped Colored Concrete, Item 405.1000.

This special provision describes stamping and coloring concrete WisDOT Red for work constructed under other contract bid items. Conform to standard spec 405 as modified in this special provision.

Replace standard spec 405.2.1.4.3(3) with the following:

(2) Stamping Pattern – Soldier Course Brick Pattern

Replace the entire contents of standard spec 405.3.2 with the following:

(1) Color concrete full-depth conforming to standard spec 405.3.1

(2) Place concrete at thickness shown in the plans with Soldier Course Brick Pattern using installers experienced with stamping colored concrete. Finished stamped colored concrete shall match the visual appearance of the approved sample and the adjacent concrete sidewalk that is existing to remain at the intersection of Brown Deer Rd and Port Washington Rd. Concrete sidewalk not conforming to the color and finish of the approved sample will be replaced at the contractor's expense.

89. Asphaltic Mixture For Extreme Conditions, Item 450.1100.S.

A Description

This special provision describes assigning responsibility for extreme weather paving to the department.

This special provision applies only to work done under standard spec 450 through 490 that the contract requires to be performed within the following prescribed times:

- In the northern asphalt zone: between November 1 and April 15 inclusive.
- In the southern asphalt zone: between November 15 and April 1 inclusive.
- When ambient temperatures are less than 36 F for upper layers, 32 F for lower layers, and the contractor is asked to pave.

CMM 4-53 figure 2 defines asphalt zones.

This special provision applies only to following work:

DESCRIPTION	LOCATION
EMERGENCY PAVEMENT REPAIR	*IH 43*

B Materials

Conform to the materials requirements of standard spec 450 through 490 as modified in other contract special provisions for work specified in A.

C Construction

Conform to the construction requirements of standard spec 450 through 490 as modified in other contract special provisions for work specified in A, and as follows:

Delete standard spec 450.3.2.1.1(1) and 450.5.2(3).

Replace standard spec 450.3.2.1.2.2(2) with the following:

(2) Engineer written acceptance is required for the cold weather paving plan. Engineer acceptance of the plan does not relieve the contractor of responsibility for the quality of HMA pavement placed in cold weather except as specified in E.

D Measurement

The department will measure Asphaltic Mixture For Extreme Conditions by the ton placed for work specified in A. The department will only measure work performed under standard spec 460, 465, and related special provision bid items if that work conforms to an engineer-accepted cold weather paving plan.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
450.1100.S	Asphaltic Mixture For Extreme Conditions	TON

Payment for Asphaltic Mixture For Extreme Conditions is full compensation for additional materials and equipment required for operations in extreme conditions for work specified in A.

The department will not assess disincentives for density or ride deficiencies the engineer attributes to cold weather paving. The department is responsible for damage or defects the engineer attributes to temperature or other extreme conditions. The department will pay separately for repairing this damage or these defects as extra work.

The department will pay separately for work done under standard spec 450 through 490 and associated special provisions. The department will not pay separately for the HMA Cold Weather Paving bid item for work specified in A.

stp-450-010 (20170615)

90. QMP HMA Pavement Nuclear Density.

A Description

Replace standard spec 460.3.3.2 (1) and standard spec 460.3.3.2 (4) with the following:

(1) This special provision describes density testing of in-place HMA pavement with the use of nuclear density gauges. Conform to standard spec 460 except as modified in this special provision.

(2) Provide and maintain a quality control program defined as all activities and documentation of the following:

1. Selection of test sites.
2. Testing.
3. Necessary adjustments in the process.
4. Process control inspection.

(3) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required procedures.

https://wisconsindot.gov/rdwy/cmm/cm-08-00toc.pdf

(4) The department's Materials Reporting System (MRS) software allows contractors to submit data to the department electronically, estimate pay adjustments, and print selected reports. Qualified personnel may obtain MRS software from the department's web site at:

http://www.atwoodsystems.com/

B Materials

B.1 Personnel

(1) Nuclear gauge owners and personnel using nuclear gauges shall comply with WisDOT requirements according to 460.3.3 and CMM 8-15.

B.2 Testing

(1) Conform to ASTM D2950 and CMM 8.15 for density testing and gauge monitoring methods. Conform to CMM 8-15.10.4 for test duration and gauge placement.

B.3 Equipment

B.3.1 General

(1) Furnish nuclear gauges according to CMM 8-15.2.

(2) Furnish nuclear gauges from the department's approved product list at

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/default.aspx

B.3.2 Comparison of Nuclear Gauges

B.3.2.1 Comparison of QC and QV Nuclear Gauges

(1) Compare QC and QV nuclear gauges according to CMM 8-15.7.

B.3.2.2 Comparison Monitoring

(1) Conduct reference site monitoring for both QC and QV gauges according to CMM 8-15.

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

(1) Divide the pavement into lots and sublots for nuclear density testing according to CMM 8-15.10.2.

(2) Determine required number of tests according to CMM 8-15.10.2.1.

(3) Determine random testing locations according to CMM 8-15.10.3.

B.4.1.2 Side Roads, Crossovers, Turn Lanes, Ramps, and Roundabouts

(1) Divide the pavement into lots and sublots for nuclear density testing according to CMM 8-15.10.2.

(2) Determine required number of tests according to CMM 8-15.10.2.2.

(3) Determine random testing locations according to CMM 8-15.10.3.

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

(1) Calculate the average sublot densities using the individual test results in each sublot.

(2) If all sublot averages are no more than one percent below the target density, calculate the daily lot density by averaging the results of each random QC test taken on that day's material.

(3) If any sublot average is more than one percent below the target density, do not include the individual test results from that sublot when computing the lot average density and remove that sublot's tonnage from the daily quantity for incentive. The tonnage from any such sublot is subject to disincentive pay as specified in standard spec 460.5.2.2.

B.4.2.2 Mainline Shoulders

B.4.2.2.1 Width Greater Than 5 Feet

(1) Determine the pavement density as specified in B.4.2.1.

B.4.2.2.2 Width of 5 Feet or Less

(1) If all sublot test results are no more than 3.0 percent below the minimum target density, calculate the daily lot density by averaging all individual test results for the day.

(2) If a sublot test result is more than 3.0 percent below the target density, the engineer may require the unacceptable material to be removed and replaced with acceptable material or allow the nonconforming material to remain in place with a 50 percent pay reduction. Determine the limits of the unacceptable material according to B.4.3.

B.4.2.3 Side Roads, Crossovers, Turn Lanes, Ramps, and Roundabouts

(1) Determine the pavement density as specified in B.4.2.1.

B.4.2.4 Documentation

(1) Document QC density test data as specified in CMM 8.15. Provide the engineer with the data for each lot within 24 hours of completing the QC testing for the lot.

B.4.3 Corrective Action

(1) Notify the engineer immediately when an individual test is more than 3.0 percent below the specified minimum in standard spec 460.3.3.1. Investigate and determine the cause of the unacceptable test result.

(2) The engineer may require unacceptable material specified in B.4.3(1) to be removed and replaced with acceptable material or allow the nonconforming material to remain in place with a 50 percent pay reduction. Determine limits of the unacceptable area by measuring density of the layer at 50-foot increments both ahead and behind the point of unacceptable density and at the same offset as the original test site. Continue testing at 50-foot increments until a point of acceptable density is found as specified in standard spec 460.5.2.2(1). Removal and replacement of material may be required if extended testing is in a previously accepted sublot. Testing in a previously accepted sublot will not be used to recalculate a new lot density.

(3) Compute unacceptable pavement area using the product of the longitudinal limits of the unacceptable density and the full sublot width within the traffic lanes or shoulders.

(4) Retesting and acceptance of replaced pavement will be as specified in standard spec 105.3.

(5) Tests indicating density more than 3.0 percent below the specified minimum, and further tests taken to determine the limits of unacceptable area, are excluded from the computations of the sublot and lot densities.

(6) If two consecutive sublot averages within the same paving pass and same target density are more than one percent below the specified target density, notify the engineer and take necessary corrective action. Document the locations of such sublots and the corrective action that was taken.

B.5 Department Testing

B.5.1 Verification Testing

(1) The department will have a HTCP certified technician, or ACT working under a certified technician, perform verification testing. The department will test randomly at locations independent of the contractor's QC work. The department will perform verification testing at a minimum frequency of 10 percent of the sublots and a minimum of one sublot per mix design. The sublots selected will be within the active work zone. The contractor will supply the necessary traffic control for the department's testing activities.

(2) The QV tester will test each selected sublot using the same testing requirements and frequencies as the QC tester.

(3) If the verification sublot average is not more than one percent below the specified minimum target density, use the QC tests for acceptance.

(4) If the verification sublot average is more than one percent below the specified target density, compare the QC and QV sublot averages. If the QV sublot average is within 1.0 lb/ft^3 of the QC sublot average, use the QC tests for acceptance.

(5) If the first QV/QC sublot average comparison shows a difference of more than 1.0 lb/ft^3 each tester will perform an additional set of tests within that sublot. Combine the additional tests with the original set of tests to compute a new sublot average for each tester. If the new QV and QC sublot averages compare to within 1.0 lb/ft^3, use the original QC tests for acceptance.

(6) If the QV and QC sublot averages differ by more than 1.0 lb/ft^3 after a second set of tests, resolve the difference with dispute resolution specified in B.6. The engineer will notify the contractor immediately when density deficiencies or testing precision exceeding the allowable differences are observed.

B.5.2 Independent Assurance Testing

(1) Independent assurance is unbiased testing the department performs to evaluate the department's verification and the contractor's QC sampling and testing including personnel qualifications, procedures, and equipment. The department will perform the independent assurance review according to the department's independent assurance program.

B.6 Dispute Resolution

(1) The testers may perform investigation in the work zone by analyzing the testing, calculation, and documentation procedures. The testers may perform gauge comparison according to B.3.2.1.

(2) The testers may use comparison monitoring according to B.3.2.2 to determine if one of the gauges is out of tolerance. If a gauge is found to be out of tolerance with its reference value, remove the gauge from the project and use the other gauge's test results for acceptance.

(3) If the testing discrepancy cannot be identified, the contractor may elect to accept the QV sublot density test results or retesting of the sublot in dispute within 48 hours of paving. Traffic control costs will be split between the department and the contractor.

(4) If investigation finds that both gauges are in error, the contractor and engineer will reach a decision on resolution through mutual agreement.

B.7 Acceptance

(1) The department will not accept QMP HMA Pavement Nuclear Density if a non-compared gauge is used for contractor QC tests.

C (Vacant)

D (Vacant)

E Payment

E.1 QMP Testing

(1) Costs for all sampling, testing, and documentation required under this special provision are incidental to the work. If the contractor fails to perform the work required under this special provision, the department may reduce the contractor's pay. The department will administer pay reduction under the Non-performance of QMP administrative item.

E.2 Disincentive for HMA Pavement Density

(1) The department will administer density disincentives as specified in standard spec 460.5.2.2.

E.3 Incentive for HMA Pavement Density

(1) The department will administer density incentives as specified in standard spec 460.5.2.3.

stp-460-020 (20181119)

91. Cold Patch, Item 495.1000.S.

A Description

This special provision describes furnishing cold patch and filling potholes and other voids in existing pavement surfaces as the engineer directs.

B Materials

Furnish a mixture of course aggregate, natural sand, and MC-250 bituminous material designed to have a workability range of 15-100º F without heating. Ensure that the mixture:

- Adheres to wet surfaces.
- Resists damage from water, salt, and deicing products.
- Requires no mixing or special handling before use.
- Supports traffic immediately after placement and compaction.

Conform to the following gradation:

SIEVE SIZE	PERCENT PASSING (by weight)
1/2-inch (12.5 mm)	100
3/8-inch (9.5 mm)	90 - 100
No. 4 (4.75 mm)	90 max
No. 8 (2.38 mm)	20 - 65
No. 200 (0.074 mm)	2 - 10
Bitumen	4.8 - 5.4

The department will accept cold patch based primarily on the engineer's visual inspection. The department may also test for gradation.

C Construction

Stockpile cold patch on site on a smooth, firm, well-drained area cleared of vegetation and foreign material. Cover the stockpile and ensure that it is easily accessible. Replenish the stockpile throughout the project duration but limit the size at any given time to 10 tons on site unless the engineer approves otherwise. Dispose of unused material at project completion unless the engineer directs otherwise.

Place cold patch by hand. Remove ponded water and loose debris before placement. Compact flush with a tamper, roller, or vehicle tire after placement.

Refill patched areas as necessary to maintain a flush pavement surface until project completion.

D Measurement

The department will measure Cold Patch by the ton, acceptably stockpiled on site.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
495.1000.S	Cold Patch	TON

Payment for Cold Patch is full compensation for providing and maintaining patches; for furnishing and replenishing stockpiled material on-site; and for disposing of excess material at project completion.

stp-495-010 (20160607)

92. Ice Hot Weather Concreting, Item 501.1000.S.

Conform to standard spec 501.3.8.2 except the department will pay for ice at the contract unit price under the Ice Hot Weather Concreting bid item. This special provision only applies to work done under the following contract bid items:

Concrete Masonry Bridges	Concrete Masonry Retaining Walls
Concrete Masonry Bridges HES	Concrete Masonry Retaining Walls HES
Concrete Masonry Culverts	Concrete Masonry Endwalls
Concrete Masonry Culverts HES	Concrete Masonry Overlay Decks
Concrete Barrier Single-Faced 32-Inch	Concrete Barrier (type)
Concrete Barrier Double-Faced 32-Inch	Concrete Barrier Fixed Object Protection (type)
Concrete Barrier Transition Section 32-Inch	Concrete Barrier Transition (type)

Replace standard spec 501.4 and 501.5 with the following:

501.4 Measurement

(1) The department will measure Ice Hot Weather Concreting by the pound acceptably completed, measured only if the conditions prescribed in standard spec 501.3.8.2 are met.

501.5 Payment

(1) The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
501.1000.S	Ice Hot Weather Concreting	LB

(2) Payment for Ice Hot Weather Concreting is full compensation for ice used to cool concrete placed in hot weather as specified in standard spec 501.3.8.2.

(3) The department will not pay directly for the concrete specified under this section. Concrete is incidental to the various bid items using it. Payment under those bid items includes providing all materials, including aggregates and associated aggregate source testing, cement, fly ash, slag, and admixtures; and for preparing, transporting, storing, protecting and curing concrete.

(4) If required to remove and replace any concrete damaged by lack of proper protection. Perform this work at no expense to the department.

stp-501-010 (20210708)

93. Expansion Device, Item 502.3101.

A Description

This special provision describes furnishing and installing an expansion device as the plans show conforming to standard spec 502 as modified in this special provision.

B Materials

Furnish components for the Expansion Device System from an approved fabricator selected from the department's approved product list of Fabricated Bridge Components – Expansion Devices.

To be eligible for this project, expansion devices from other manufacturers must be pre-approved before the bid closing date. Applications for pre-approval may be submitted at any time. Prepare the application according to the department requirements. If needed, obtain information and assistance with the pre-approval process from the Structures Maintenance Section in the Bureau of Structures, by sending an email to the following address: DOTDLStructuresFabrication@dot.wi.gov

Expansion device strip seal gland size requirement of 4-inches, 5-inches, and 6-inches shall be as the plans show.

The minimum thickness of the polychloroprene strip seal shall be 1/4 inch for non-reinforced elastomeric glands and 1/8 inch for reinforced glands. Furnish the strip seal gland in lengths suitable for a continuous one-piece installation at each individual expansion joint location. Provide preformed polychloroprene strip seals that conform to the requirements ASTM D3542, and have the following physical properties:

Property Requirements	Value	Test Method
Tensile Strength, min.	2000 psi	ASTM D412
Elongation @ Break, min	250%	ASTM D412
Hardness, Type A, Durometer	55 ± 5 pts.	ASTM D2240
Compression Set, 70 hours @212˚F, max.	35%	D395 Method B Modified
Ozone Resistance, after 70 hrs. at 100˚F under 20% Strain with 100 pphm ozone	No Cracks	ASTM D1149 Method A
Mass Change in Oil 3 after 70 hr. 212˚F Mass Change, max.	45%	ASTM D471

Install the elastomeric strip seal gland with tools and a lubricant adhesive recommended by the manufacturer.

Furnish manufacturer's certification for production of polychloroprene represented showing test results for the cured material supplied and certifying that it meets all specified requirements.

The steel extrusion or retainer shall conform to ASTM designation A 709 grade 36 steel. After fabrication, steel shall be galvanized conforming to the requirements ASTM A123.

Manufacturer's certifications for adhesive and steel shall attest that the materials meet the specification requirements.

stp-502-020 (20210113)

94. QMP Drilled Shafts.

A General

Perform this work according to the requirements of standard specs 501, 502, 701, 710 and 715 (conform to QMP Concrete Structures) except as deleted or additionally stipulated herein. This specification applies to all drilled shaft concrete placed under the following bid items:

SPV.0090.4005	Wall Secant Pile 59.06-Inch
SPV.0060.4030	Trial Wall Panel Secant Pile 59.06-Inch

B Materials

B.1 Concrete Mix Physical Requirements

For drilled shaft construction, use high compressive strength concrete, and relatively high cement content in the concrete mix with 590 to 675 pounds of cement per cubic yard. Limit fly ash to 15% of cementitious material. Additives or admixtures, when they are used, shall be clearly indicated. The concrete shall be a flowable, non-segregating concrete mix that does not exhibit rapid slump loss.

Unit Weight of Concrete, AASHTO T 121: Weight must be between 140 to 160 lb/ft^3.

Fine and coarse aggregate shall conform to the requirements of standard spec 501.2.5 except as modified herein.

Fine aggregate shall conform to the following gradation requirements:

Sieve Size	Percent Passing (by weight)
3/8"	100
No. 4	90 – 100
No. 16	45 – 85
No. 50	5 – 30
No. 100	0 – 10
No. 200	0 – 3.5

Coarse aggregates shall conform to the following gradation requirements:

Sieve Size	Percent Passing (by weight)
1/2”	100
3/8”	85 – 100
No. 4	10 – 30
No. 8	0 – 10
No. 16	0 – 5
No. 200	0 – 1.5

Any chemical admixture(s) to be used, other than air-entraining agents or water reducers from the department approved list, must be approved in advance by the engineer and the UPRR engineer and meet the requirements of AASHTO M 194, as documented by independent laboratory test reports.

The adjustment of dosage rates of concrete admixtures will be permitted without requiring a new mix design.

B.2 Slump

The trial mix design for drilled shaft concrete shall include a Slump Loss Graph, or Slump versus Time after Batching. The Slump Loss Graph of a proposed drilled shaft mix design shall illustrate the slump reducing slowly and still exceeding a 5-inch slump two hours after batching. Careful attention to concrete mix designs made with retarders must be exercised. Monitor slump to assure that all concrete placement is completed before any mix begins setting. Operations may need to be adjusted to reduce the number of shafts that are completed during a single pour event.

Adding water to a ready-mix truck is prohibited. In cases in which part of the water of the concrete mix is added at the batch plant and the remaining water is added at the job site, the amount of water to be added at the job site shall be stated on the mix design sheet carried by the ready-mix truck driver. Testing of concrete will then be conducted on the resulting mix, and further water cannot be added at any time to increase the mix slump or to bring the mix to a specific slump. If after all the water permitted in the mix design has been added and the slump is still out of these specifications, the contractor must reject the mix. Repair or replace drilled shafts of questionable concrete design mixes at no additional cost to the department.

The following table presents the ranges for the slump.

	Slump Range in Inches		
	Concrete Placed by Free Falling	Concrete Placed by Tremie	Concrete Placed by Pump
Dry Installation Method			
Uncased or Cased Excavations	7 to 9	8 to 9½	7 to 9½
Wet Installation Method			
Uncased or Cased Excavations	N/A	8 to 9½	7 to 9½

B.3 Slurry

B.3.1 General

Slurry shall be a stable suspension of mineral in potable water or polymer slurry. Maintain a stable suspension at all times. Bentonite slurry shall be mineral slurry of powdered Wyoming or Dakota bentonite, with density, viscosity, and pH as specified in the table below. Polymer slurry shall be a suspension of powdered polyacrylamide or vinyl polymer with the following characteristics:

Property at 60°F Units	Mineral Slurry	Polymer Slurry	Test Method
Density in Fresh Water (lb/ft^3) (a)	85 max (no end bearing) 70 max (w/end bearing)	64 max	ASTM D4380
Viscosity (sec/quart)	26 to 50	40 to 90 (c)	Marsh Funnel API-RPI3B-1, Sect. 2
pH	7 to 12	7 to 12	ASTM D4972
Sand Content (%) (b)	20 max (no end bearing) 4 max (w/end bearing)	1 max	200 Sieve Retain

(a) Test for sand content as determined by the American Petroleum Institute.

(b) Bentonite slurry shall be disposed of offsite in an approved manner as accepted by the WDNR.

(c) Or per manufacturers recommendations and approved by the engineer and the UPRR engineer.

The contractor may adjust the range of slurry properties when field trials and field tests show that modifications are necessary to bring the slurry to specifications.

Obtain slurry samples from the midpoint and bottom of each drilled shaft prior to the placement of the reinforcing steel. Correct the slurry as necessary to meet the specification requirements.

B.3.2 Tests

To ensure that the results are within the ranges stated in the table above, perform the following tests on the mineral slurry supplied to the drilled shaft excavation at different depths within the drilled shaft using a slurry sampler.

B.3.2.1 Wisconsin Method of Test for Density of Slurry (Mud Weight)

Density shall be measured at 68°F. This test is identical to ASTM D 4380 except that the mineral slurry to be tested shall consist of processed attapulgite or bentonite clays, and the temperature of the slurry (using a 0-105°C thermometer) shall be measured and recorded on the drilling Mud Report form.

B.3.2.2 Wisconsin Method of Test for Viscosity of Slurry

The viscosity shall be measured at 68°F or a constant temperature with the Marsh Cone Method.

B.3.2.2.1 Scope

The Marsh Funnel or Marsh Cone is used to measure viscosity of drilling fluids. This test method has been adapted from Section 2 of the American Petroleum Institute (API) Recommended Practice FM8-RP13B-1: Standard Procedure for Field Testing Water-Based Drilling Fluids (FM 8-RP13B-1). Use of a direct-reading viscometer has been eliminated.

B.3.2.2.2 Equipment

Marsh Funnel: A Marsh Funnel is calibrated to out-flow 946 mL (one quart) of fresh water at a temperature of 21 ±3°C (70 ±5°F) in 26 ±0.5 seconds. A graduated cup is used as a receiver.

Specifications:

Funnel Cone Length	305 mm (12.0 in.)
Diameter	152 mm (6.0 in.)
Capacity to bottom of screen	1500 mL
Orifice Length	50.8 mm (2.0 in.)
Inside Diameter	4.7mm (3/16 in.)
Screen	12 mesh

Has 1.6 mm (1/16 in.) openings and is fixed at a level 19.0 mm (3/4 in.)

B.3.2.3 Wisconsin Method of Test for Sand Content of Slurry

B.3.2.3.1 Scope

The sand content of mud is the volume percent of particles larger than 74 microns. It is measured by a sand-screen set. This test method has been adapted from Section 5 of the American Petroleum Institute (API) Recommended Practice 13B-1: standard Procedure for Field Testing Water-Based Drilling Fluids (RP13B-1).

B.3.2.3.2 Equipment

200-mesh sieve, 63.5 mm (2.5 in.) in diameter.

Funnel to fit sieve.

Glass measuring tube marked for the volume of mud to be added. The tube is graduated from 0 to 20 percent in order to read directly the percentage of sand.

B.3.2.3.3 Procedure

Fill the glass measuring tube with mud to the “mud” mark. Add water to the next mark. Close the mouth of the tube and shake vigorously. Pour the mixture onto the clean, wet screen. Discard the liquid passing though the screen. Add more water to the tube, shake, and again pour onto the screen. Repeat until the tube is clean. Wash the sand retained on the screen to free it of any remaining mud.

Put the funnel upside down over the top of the sieve invert. Slowly tip the assembly and insert the tip of the funnel into the mouth of the glass tube. Wash the sand into the tube by playing a fine spray of water through the screen. Allow the sand to settle. From the graduations on the tube, read the volume percent of the sand.

Report the sand content of the mud by percent volume. Report the source of the mud sample, i.e., above shaker, suction pit, etc. Coarse solids other than sand will be retained on the screen (e.g., lost circulation material) and the presence of such solids should be noted.

B.3.2.4 Wisconsin Method of Test for pH of Slurry

pH shall be measured by the Electric pH meter or pH indicator paper strips.

B.3.2.4.1 Scope

Field measurement of drilling fluid (or filtrate) pH and adjustments to the pH are fundamental to drilling fluid control. This test method has been adapted from Section 7 of the American Petroleum Institute (API) Recommended Practice 13B-1: Standard Procedure for Field Testing Water-Based Drilling Fluids (RP 13B-1).

The recommended method for pH measurement of drilling fluid is with a glass electrode pH meter. This method is accurate and gives reliable pH values, being free of interference if a high quality electrode system is used with a properly designed instrument. Rugged pH instruments are available that automatically temperature compensate the slope and are preferred over the manually adjusted instruments.

NOTE: Color matching pH paper and sticks are used for field pH measurements but are not the methods recommended. These methods are reliable only in very simple water muds. Mud solids, dissolved salts and chemicals, and dark-colored liquids cause serious errors in pH paper values. Readability is normally about 0.5 pH unit.

B.3.2.4.2 Equipment

pH meter: millivolt range potentiometer calibrated to show pH units for measuring the potential between a glass-membrane electrode and a standard “reference” electrode. The instrument is (preferred) to be water, shock, and corrosion-resistant and portable. Specifications are:

- pH range: 0 to 14.
- Electronics type: solid state (preferred).
- Power source: batteries (preferred).
- Operating temperature range: 0-66°C (32-150°F).
- Readout: digital (preferred).
- Resolution: 0.1 pH unit.

- Accuracy: ±0.1 pH unit.
- Repeatability: 0.1 pH unit.
- Adjustments.
- “Temperature” compensation of electrode system.
- “Slope” of electrode system (preferred).
- “Calibration” setting of readout. (Instrument with the above internal temperature compensation is preferred.)

Electrode system: A combination system of a glass electrode for sensing H^+ ions and a standard voltage reference electrode, constructed as a single electrode (preferred). Body of this probe should be constructed of durable material. A flat-end probe is preferred for better protection and easier cleaning of the electrode. Waterproof connection to the meter is recommended. Specifications are:

- Glass pH electrode response range: 0 to 14 pH unit.
- Electrodes: a glass electrode and a silver/silver chloride electrode in combination, having a ceramic or a plastic single or double junction.
- Electrolyte in reference electrode: KCl gel.
- Glass composition: suitable for low sodium ion error.
- Sodium ion error: at pH = 13 or at 0.1 mole Na^+ ion, an error less than 0.1 pH unit.
- Buffer solutions: three solutions to calibrate and set slope of pH meter prior to sample measurement.
- pH = 4.0: potassium hydrogen phthalate at 0.05 molar in water. Gives 4.01 pH at 24°C (75°F).
- pH = 7.0: potassium dihydrogen phosphate at 0.02066 molar and disodium hydrogen phosphate at 0.02934 molar in water. Gives 7.00 pH at 24°C (75°F).
- pH = 10.0: sodium carbonate at 0.025 molar and sodium bicarbonate at 0.025 molar in water. Gives 10.01 pH at 24°C (75°F).

NOTE: Buffers may be obtained from supply houses as pre-made solution, dry-powder packages, or a given formula, but must duplicate National Bureau of Standards primary or secondary buffers. Shelf life of all buffers not to exceed six months. Date of preparation of buffer should be shown on bottles used in the field. Bottles should be kept tightly stoppered.

Distilled or deionized water: in spray bottle.

Soft tissues: to blot electrodes.

Thermometer: glass, 0-150°C (32-220°F).

Accessory equipment: Soft-bristle test tube brush: to clean electrode.

Mild liquid detergent: Ivory, or equivalent.

Electrode storage vial: to keep electrode moist.

Sodium hydroxide: 0.1 molar (approximately); to recondition electrode.

Hydrochloric acid: 0.1 molar (approximately); to recondition electrode.

Ammonium bifluoride: 10% solution (approximately); to recondition electrode.

CAUTION: This is a strong and toxic acid.

Hydrofluoric acid: ACS reagent grade.

CAUTION: This is a strong acid.

B.3.2.4.3 Procedure – pH Measurement

Obtain sample of fluid to be tested. Allow it to reach 24±3°C (75±5°F). Allow buffer solution to also reach the same temperature as the fluid to be tested.

NOTE: For accurate pH measurement; the test fluid, buffer solution, and reference electrode must all be at the sample temperature. The pH of the buffer solution indicated on the container label is the correct pH only at 24°C (75°F). If attempting to calibrate at another temperature, the actual pH of the buffer at this temperature must be used. Tables of buffer pH values at various temperatures are available from the suppliers and should be used in the calibration procedure.

Clean electrodes by washing with distilled water and blot dry. Place probe into pH 7.0 buffer.

Turn on meter; wait 60 seconds for reading to stabilize. Measure temperature of pH 7 buffer solution. Set this temperature on “temperature” knob. Set meter reading to “7.0” using “calibration” knob. Rinse probe with distilled water and blot dry.

Repeat operations using either pH 4.0 or pH 10.0 buffer. Use pH 4.0 if “acidic” sample, or pH 10.0 if “alkaline” sample is to be tested. Set meter to number “4.0” or “10.0” respectively, using “slope” adjustment knob. (If no “slope” knob exists, use the “temperature” knob to set “4.0” or “10.0” on meter). Check the meter with pH 7 buffer again. If it has changed, reset to “7.0” with “calibration” knob. Repeat procedures to ensure equipment is properly calibrated.

NOTE: Discard and do not reuse the sample of buffer solutions used in calibration. Meter should be fully calibrated every day using two buffers. Check with pH 7 buffer every three hours. If meter calibrates properly, rinse electrode with distilled water and blot dry. Place electrode in sample to be tested and stir gently. Allow 60 to 90 seconds for reading to stabilize.

Record sample pH to nearest 0.1 pH unit and the temperature of sample tested. Carefully clean the electrode in preparation for next usage. Store in vial of pH 4 buffer. NEVER let the probe tip become dry. Turn meter off and close cover to protect instrument. Avoid storing instrument at extreme temperatures (below 0°C (32°F) or above 49°C (120°F)).

Care of Electrode: Cleaning the electrode will be necessary periodically, especially if oil or clay particles coat the face of the glass electrode or the porous frit of the reference electrode. Clean electrode with a soft-bristle brush and a mild detergent. Reconditioning the electrode may be necessary if plugging becomes sever, as indicated by slow response, drifting of readings, or if “slope” and “calibration” cannot be mutually set. Recondition by soaking electrode for 10 minutes in 0.l M HCl followed by rinsing in water and soaking for 10 minutes in 0.1 M NaOH and rinsing again. Check electrode for response by performing calibration. If electrode continues to perform poorly, soak electrode for two minutes only in 10% $NH_4F \cdot HF$ solution. (CAUTION: This is strong and toxic acid). Replace electrode system if above steps fail to recondition it.

C (Vacant)

D (Vacant)

E Payment

E.1 QMP Drilled Shafts

Costs for all sampling, testing, and documentation required under this special provision and all other associated work are incidental to the work. If the contractor fails to perform the work required under this special provision, the department will reduce the contractor's pay.

95. Bar Steel Reinforcement HS Stainless Structures, Item 505.0800.S.

A Description

This special provision describes furnishing and placing stainless steel reinforcing bars and associated stainless steel bar couplers.

Conform to standard spec 505 as modified in this special provision.

B Materials

B.1 General

Furnish stainless steel reinforcing bars conforming to ASTM A955 and to one of the following Unified Numbering System (UNS) designations: S31653, S31803, S32205, or S32304. Supply grade 60 bars, all of the same UNS designation. Conform to the chemical composition specified for the given UNS designation in ASTM A276 table 1.

Supply bars that are free of dirt, mill scale, oil, and debris by pickling to a bright or uniform light finish. The department may reject bars displaying rust/oxidation, questionable blemishes, or lack of a bright or uniform pickled surface.

Furnish chairs or continuous supports made of stainless steel or recycled plastic to support high-strength stainless bar steel reinforcement subject to the plastic chair restriction stated in standard spec 505.3.4(1).

Furnish couplers made from one of the UNS alloys allowed for bar steel.

Furnish tie wire made from one of the UNS alloys allowed for bar steel or from an engineer-approved plastic or nonmetallic material. Ensure that stainless steel tie wire is dead soft annealed.

B.2 Fabrication

Before fabrication, supply test results from an independent testing agency certifying that the reinforcement meets the requirements of Annex A1 of ASTM A955.

Bend bars conforming to standard spec 505.3.2 and according to ASTM A955. Bend and cut bars using equipment thoroughly cleaned or otherwise modified to prevent contamination from carbon steel or other contaminants. Use tools dedicated solely to working with stainless steel.

B.3 Control of Material

Identify reinforcement bars delivered to the project site with tags bearing the identification symbols used in the plans. Include the UNS designation, heat treat condition, heat number, grade corresponding to minimum yield strength level, and sufficient documentation to track each bar bundle to a mill test report.

Provide samples for department testing and acceptance according to CMM 8-50 Exhibit 1 requirements for concrete masonry reinforcement for uncoated bar steel.

Provide mill test reports for the project that do the following:

1. Verify that sampling and testing procedures and test results conform to ASTM A955, ASTM A276 table 1, and these contract requirements.
2. Include a chemical analysis with the UNS designation, heat lot identification, and the source of the metal.
3. Include tensile strength, yield strength, and elongation tests results conforming to ASTM A955 for each size furnished.
4. Certify that the bars have been pickled to a bright or uniform light finish.

C Construction

C.1 General

Ship, handle, store, and place the stainless steel reinforcing as follows:

1. Separate from regular reinforcement during shipping. Pad points of contact with steel chains or banding, or secure with non-metallic straps.
2. Store on wooden cribbing separated from regular reinforcement. Cover with tarpaulins if stored outside.
3. Handle with non-metallic slings.
4. Do not flame cut or weld. Protect from contamination when cutting, grinding, or welding other steel products above or near the stainless steel during construction.
5. Place on plastic or stainless steel bar chairs. If placing stainless steel chairs on steel beams, use chairs with plastic-coated feet.
6. Tie with stainless steel wire or an engineer-approved plastic or nonmetallic material.

Do not tie stainless steel reinforcing bars to, or allow contact with, uncoated reinforcing bars or galvanized steel. Maintain at least 1 inch clearance between stainless steel bars or dowels and uncoated or galvanized steel. Where 1 inch clearance is not possible, sleeve bars with a continuous polyethylene or nylon tube at least 1/8 inch thick extending at least 1 inch in each direction and bind with nylon or polypropylene cable ties. Sleeves are not required between stainless steel bars and shear studs. Stainless steel bars can be in direct contact with undamaged epoxy-coated bars.

Cut flush with the top flange or remove uncoated fasteners, anchors, lifting loops, or other protrusions into a bridge deck before casting the deck on prestressed concrete beams.

C.2 Splices

Splice as the plans show. Provide stainless steel couplers conforming to the minimum capacity, certification, proof testing, and written approval requirements of standard spec 550.3.3.4. The contractor may substitute stainless steel couplers for lap slices the plans show if the engineer approves in writing.

If increasing or altering the number or type of bar splices the plans show, provide revised plan sheets to the engineer showing the reinforcement layout, type, length, and location of revised bar splices and revised bar lengths. Obtain engineer approval for the location of new lap splices or substitution of mechanical bar couplers before fabrication. Ensure that new lap splices are at least as long as those the plans show.

D Measurement

The department will measure Bar Steel Reinforcement HS Stainless Structures by the pound, acceptably completed, computed from the nominal weights of corresponding sizes for carbon steel deformed bars in AASHTO M31 regardless of stainless steel alloy provided. The department will not measure extra material used if the contractor alters the reinforcement layout as allowed under C.2, extra material for splices or couplers the plans do not show, or the weight of devices used to support or fasten the steel in position.

The department will measure the Bar Couplers Stainless bid items as each individual coupler, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB

Payment for Bar Steel Reinforcement HS Stainless Structures is full compensation for furnishing and placing stainless steel reinforcing bars, including supports. Where the plans specify bar couplers, the department will pay for the length of bars as detailed with no deduction or increase for installation of the coupler.

stp-505-005 (20190618)

96. Fracture Critical Material for Union Pacific Railroad Company Structures.

Supplement standard spec 506.2.2.3 with the following:

(2) For steel members designated FCM (Fracture Critical Material), manufacture using killed fine grain practice.

97. Fabricator Certification for Union Pacific Railroad Company Structures.

Supplement standard spec 506.3.1.1 with the following:

(3) Perform fabrication of structural steel using a fabricator that has completed the AISC Quality Certification Program for Major Steel Bridges (CBR). Provide documentation to the UPRR engineer and the engineer for approval before beginning fabrication.

98. Shop Assembly for Union Pacific Railroad Company Structures.

Supplement standard spec 506.3.7 with the following:

(5) Shop-assemble spans and make available for inspection by the engineer and the UPRR engineer at the fabricator’s plant before the steel is disassembled and shipped to the erection site.

99. Shop and Field Weld Inspection and Testing for Union Pacific Railroad Company Structures.

Supplement standard spec 506.3.19.1 with the following:

(5) Use only AWS prequalified welded joints. Submit all welding sequences and procedures, and alternative joint details to the engineer and the UPRR engineer for review and approval before fabrication. Minimize distortion during welding.

Replace standard spec 506.3.19.4 with the following:

506.3.19.4 Shop and Field Welding Inspection and Testing

(1) Inspect shop and field welding according to AREMA 15-3.5.5 and AWS D 1.5, Clauses 8 and 12, and as follows in subsequent paragraphs in this section. Use an independent welding testing service.

(2) Use the radiographic testing method to inspect 100% of all transverse tension full penetration welds. Additionally, use the ultrasonic testing method to inspect 100% of all transverse tension full penetration welds in fracture-critical members.

(3) Use the ultrasonic testing method to inspect 100% of all bottom flange to web full penetration welds.

(4) Use the ultrasonic testing method to inspect 100% of top flange to web full penetration welds for 10% of the length at each end, and 10% of the remaining length.

(5) Use the magnetic particle testing method to inspect 100% of all flange to web fillet welds and all fillet welds on bearing stiffeners.

(6) Use the radiographic testing method or the magnetic particle testing method to inspect 25% of all other welds. If any defects are found, then increase the testing frequency using either of these methods to 100% inspection of all other welds.

(7) Re-test welds requiring repair after repairs are made.

(8) Furnish the testing results to the engineer and the UPRR engineer. Report the location and amount of inspection in linear feet, location and length of any defects, any re-testing after repairs, any rejected work and the means of repair, and furnish a certification that inspection tests were performed according to these specifications.

100. Sawing Pavement Deck Preparation Areas, Item 509.0310.S.

A Description

This special provision describes sawing around deteriorated areas requiring deck repairs under the Preparation Decks bid items on decks receiving asphalt or polymer overlays and for deck repairs that will not receive an overlay.

B (Vacant)

C Construction

The department will sound and mark areas of deteriorated concrete that require deck preparation. The engineer may identify and mark additional areas as the work is being performed.

Wet cut a minimum of 1 inch deep and at least 2 inches outside of the marked areas. Bound each marked area by providing cuts aligned parallel and perpendicular to the deck centerline.

Remove sawing sludge after completing each area. Do not allow sludge or resulting residue to enter a live lane of traffic, storm sewer, stream, lake, reservoir, marsh, or wetland. Dispose of sludge at an acceptable material disposal site located off the project limits or, if the engineer allows, within the project limits.

D Measurement

The department will measure Sawing Pavement Deck Preparation Areas by the linear foot, acceptably completed, measured as the total linear feet of bounding cuts.

The department will not measure for payment over-cuts or cuts made beyond what is required to bound engineer-marked deterioration limits.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
509.0310.S	Sawing Pavement Deck Preparation Areas	LF

Payment is full compensation for making all saw cuts, and for debris disposal.

stp-509-070 (20180628)

101. Concrete Masonry Deck Repair, Item 509.2100.S.

A Description

This special provision describes providing concrete masonry on the sawed deck preparation areas of the concrete bridge deck and in full depth deck, curb, and joint repair areas. Conform to standard spec 502 and standard spec 509.

B Materials

B.1 Neat Cement

Furnish a neat cement bonding grout. Mix the neat cement in a water-cement ratio approximately equal to 5 gallons of water per 94 pounds of cement.

B.2 Concrete

Furnish grade C or E concrete conforming to standard spec 501 for deck preparation, full-depth deck repair, curb repair and joint repair areas except as follows:

1. The contractor may increase slump of grade E concrete to 3 inches.
2. The contractor may use ready-mixed concrete.

Provide QMP for class II ancillary concrete as specified in standard spec 716.

C Construction

C.1 Neat Cement

Immediately before placing the concrete deck patching, coat the prepared surfaces with a neat cement mixture. Ensure the prepared concrete surfaces are moist without any standing water before coating with the neat cement mixture. Brush the neat cement mixture over the prepared concrete surfaces to ensure that all parts receive an even coating, and do not allow excess neat cement to collect in pockets. Apply the neat cement at a rate that ensures the cement does not dry out before being covered with the new concrete.

C.2 Placing Concrete

Place concrete conforming to standard spec 509. As determined by the engineer, consolidate smaller areas by internal vibration, strike them off, and finish the areas with hand floats to produce plane surfaces that conform to the grade and elevation of the adjoining surfaces. Give all deck patching areas a final hand float finish.

C.3 Curing Concrete

Cure the concrete masonry deck patching conforming to standard spec 502.2.6(1).

D Measurement

The department will measure Concrete Masonry Deck Repair by the cubic yard, acceptably completed.

The department will measure concrete used in deck preparation areas and in full depth deck, curb, and joint repair as part of the Concrete Masonry Deck Repair bid item.

The department will not measure wasted concrete.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
509.2100.S	Concrete Masonry Deck Repair	CY

Payment is full compensation for furnishing, hauling, preparing, placing, finishing, curing, and protecting all materials.

stp-509-060 (20210708)

102. Polymer Overlay, Item 509.5100.S.

A Description

This special provision describes providing two layers of a two-component polymer overlay system to the bridge decks the plans show.

B Materials

B.1 General

Furnish materials specifically designed for use over concrete bridge decks. Furnish polymer liquid binders from the department's approved product list.

B.2 Polymer Resin

Furnish a polymer resin base and hardener composed of two-component, 100 percent solids, 100 percent reactive, thermosetting compound with the following properties:

Property	Requirements	Test Method
Gel Time[1]	15 - 45 minutes @ 73° to 75° F	ASTM C881
Viscosity[1]	7 - 70 poises	ASTM D2393, Brookfield RVT, Spindle No. 3, 20 rpm
Shore D Hardness[2]	60-75	ASTM D2240
Absorption[2]	1% maximum at 24 hr	ASTM D570
Tensile Elongation[2]	30% - 70% @ 7 days	ASTM D638
Tensile Strength[2]	2000 to 5000 psi @ 7 days	ASTM D638
Chloride Permeability[2]	<100 coulombs @ 28 days	AASHTO T277

[1] Uncured, mixed polymer binder

[2] Cured, mixed polymer binder

Ensure that the polymer resin when mixed with aggregate has the following properties:

Property	Requirement[1]	Test Method
Minimum Compressive Strength	1,000 psi @ 8 hrs 5,000 psi @ 24 hrs	ASTM C579 Method B, Modified[2]
Thermal Compatibility	No Delaminations	ASTM C884
Minimum Pull-off Strength	250 psi @ 24 hrs	ASTM C1583

[1] Based on samples cured or aged and tested at 75°F

[2] Plastic inserts that will provide 2-inch by 2-inch cubes shall be placed in the oversized brass molds.

B.3 Aggregates

Furnish natural or synthetic aggregate that is non-polishing; clean; free of surface moisture; fractured or angular in shape; free from silt, clay, asphalt, or other organic materials; and conform to the following:

Aggregate Properties

Property	Requirement	Test Method
Moisture Content[1]	1/2 of the measured aggregate absorption, %	ASTM C566
Hardness	≥6.5	Mohs Scale
Fractured Faces	100% with at least 1 fractured face and 80% with at least 2 fractured faces of material retained on No.16	ASTM D5821
Absorption	≤1%	ASTM C128

[1] Sampled and tested by the department before placement.

Gradation

Sieve Size	% Passing by Weight
No. 4	100
No. 8	30 – 75
No. 16	0 – 5
No. 30	0 – 1

B.4 Approval of Bridge Deck Polymer Overlay System

A minimum of 20 working days before application, submit product data sheets and specifications from the manufacturer, and a certified report of test or analysis from an independent laboratory to the engineer for approval. The department will sample and test the aggregates for gradation and moisture content before placement. If requested, supply the department with samples of the polymer for the purpose of acceptance testing.

B.4.1 Product Data Sheets and Specifications

Product data sheets and specifications from the manufacture consists of literature from the manufacturer showing general instructions, application recommendations/methods, product properties, general instructions, or any other applicable information.

B.4.2 Certified Report of Test or Analysis

Conform to the following:

Polymer Binder: Submit a certified report of test or analysis from an independent laboratory dated less than 3 years before the date of the project letting showing the polymer binder meets the requirements of section B.2.

Aggregates: Submit a certified report of test or analysis from an independent laboratory dated less than 6 months before the date of the project letting showing the aggregates meet the requirements of section B.3.

C Construction

C.1 General

Ensure that the overlay system is 1/4 inch thick or thicker.

Conform to the following:

Field Review: Conduct a field review of the existing deck to identify any possible surface preparation and material compatibility issues.

Pre-Installation Meeting: Conduct a pre-installation meeting with the manufacturer's representative and the engineer before construction. Discuss the field review findings, verification testing of the surface preparation and establish procedures for maintaining optimum working conditions and coordination of work. Furnish the engineer a copy of the recommended procedures and apply the overlay system according to the manufacturer's instructions. Supply for the engineer's use for the duration of the project, a Concrete Surface Profile (CSP) chip set of 10 from the International Concrete Repair Institute (ICRI).

Manufacturer's Representative: An experienced manufacturer's representative familiar with the overlay system installation procedures shall be present at all times during surface preparation and overlay placement to provide quality assurance that the work is being performed properly. This requirement may be reduced at the engineer's discretion.

Material Storage: Store and handle materials according to the manufacturer's recommendations. Store resin materials in their original containers in a dry area. Store all aggregates in a dry environment and protect aggregates from contaminants on the job site.

C.2 Deck Preparation

C.2.1 Deck Repair

Remove all asphaltic patches and unsound or disintegrated areas of the concrete decks as the plans show, or as the engineer directs. Work performed to remove and repair the concrete deck will be paid for under other items.

Use deck patching products that are compatible with the overlay system. Patching materials with magnesium phosphate shall not be used. Place patches after surface is prepared via shot blasting and cleaning as described in Section C.2.2 of this specification. Portland cement concrete patches shall be used for joint repairs and full depth deck repairs with a plan area larger than 4 sf, unless approved otherwise by the Structures Design Section. If rapid-set concrete is used, place patches per the manufacturer's recommendation. If Portland cement concrete is used, place patches per standard spec 509.3.9.1.

Deck patching shall be filled and properly finished prior to overlay placement. Do not place overlay less than 1 hour, or per the manufacturer's recommendation, after placing rapid-set concrete patches in the repair areas. Do not place overlay less than 28 days after placing Portland cement concrete patches in the repair areas.

C.2.2 Surface Preparation

Determine an acceptable shotblasting machine operation (size of shot, flow of shot, forward speed, and/or number of passes) that provides a surface profile meeting CSP 5 (medium-heavy shotblast) according to the ICRI Technical Guideline No. 310.2. If the engineer requires additional verification of the surface preparation, test the tensile bond strength according to ASTM C1593. The surface preparation will be considered acceptable if the tensile bond strength is greater than or equal to 250 psi or the failure area at a depth of 1/4 inches or more is greater than 50 percent of the test area. Continue adjustment of the shotblasting machine and necessary testing until the surface is acceptable to the engineer or a passing test result is obtained.

Prepare the entire deck using the final accepted adjustments to the shotblasting machine as determined above. Thoroughly blast clean with hand-held equipment any areas inaccessible by the shotblasting equipment. Do not perform surface preparation more than 24 hours before the application of the overlay system.

Protect drains, expansion joints, access hatches, or other appurtenances on the deck from damage by the shot and sand blasting operations and from materials adhering and entering. Tape or form all construction joints to provide a clean straight edge.

Before shot blasting, remove pavement markings within the treatment area using an approved mechanical or blasting method.

Prepare the vertical concrete surfaces adjacent to the deck a minimum of 2" above the overlay according to SSPC-SP 13 (free of contaminants, dust, and loose concrete) by sand blasting, using wire wheels, or other approved method.

Just before overlay placement, clean all dust, debris, and concrete fines from the prepared surfaces including the vertical surfaces with compressed air. When using compressed air, the air stream must be free of oil. Any grease, oil, or other foreign matter that rests on or has absorbed into the concrete shall be removed completely. If prepared surfaces (including the first layer of the polymer overlay) are exposed to rain or dew, lightly sandblast (brush/breeze blast) the exposed surfaces.

The engineer may consider alternate surface preparation methods per the overlay system manufacture's recommendations. The engineer will approve the final surface profile and deck cleanliness before the contractor placing the polymer overlay.

C.2.3 Transitional Area

If the plans show, create a transitional area approaching transverse expansion joints and ends of the deck using an approved mechanical or blasting method. Remove 1/4 inch to 5/16 inch of concrete adjacent to the joint or end of deck and taper a distance of 3 feet.

If the plans show, create a transitional area on the approach pavement. Prep and place the first lift 3 feet beyond the end of the deck the same width as the deck. Prep and place the second lift 6 feet beyond the end of the deck the same width as the deck.

C.3 Overlay Application

Perform the handling and mixing of the polymer resin and hardening agent in a safe manner to achieve the desired results according to the manufacturer's instructions. Do not apply the overlay system if any of the following exists:

1. Ambient air temperature is below 50 F or above 100 F.
2. Deck temperature is below 50 F.
3. Moisture content in the deck exceeds 4.5 percent when measured by an electronic moisture meter or shows visible moisture after 2 hours when measured according to ASTM D4263.
4. Rain is forecasted during the minimum curing periods listed under C.5.
5. Materials component temperatures below 65 F or above 99 F.
6. Concrete deck age is less than 28 days.
7. The deck temperature exceeds 100 F.
8. If the gel time is 10 minutes or less at the predicted high air temperature for the day.

After the deck has been shotblasted or during the overlay curing period, only necessary surface preparation and overlay application equipment will be allowed on the deck. Provide appropriate protective measures to prevent contamination from equipment allowed on the deck during preparation and application operations. Begin overlay placement as soon as possible after surface preparation operations.

The polymer overlay shall consist of a two-course application of polymer and aggregate. Each of the two courses shall consist of a layer of polymer covered with a layer of aggregate in sufficient quantity to completely cover the polymer. Apply the polymer and aggregate according to the manufacturer's requirements. Apply the overlay using equipment designed for this purpose. The application machine shall feature positive displacement volumetric metering and be capable of storing and mixing the polymer resins at the proper mix ratio. Disperse the aggregate using a method that provides a uniform, consistent coverage of aggregate and minimizes aggregate rolling or bouncing into final position. First course applications that do not receive enough aggregate before the polymer gels shall be removed and replaced. A second course applied with insufficient aggregate may be left in place but will require additional applications before opening to traffic.

After completion of each course, cure the overlay according to the manufacturer's instructions. Follow the minimum cure times listed under C.5 or as prescribed by the manufacturer. Remove the excess aggregate from the surface treatment by sweeping, blowing, or vacuuming without tearing or damaging the surface; the material may be re-used if approved by the engineer and manufacturer. Apply all courses of the overlay system before opening the area to traffic. Do not allow equipment or traffic on the treated area until directed by the engineer.

After the first layer of coating has cured to the point where the aggregate cannot be pulled out, apply the second layer. Before applying the second layer, broom and blow off the first layer with compressed air to remove all loose excess aggregate.

Before opening to traffic, clean expansion joints and joint seals of all debris and polymer. A minimum of 3 days following opening to traffic, remove loosened aggregates from the deck, expansion joints, and approach pavement.

C.4 Application Rates

Apply the polymer overlay in two separate courses according to the manufacturer's instructions, but not less than the following rate of application.

Course	Minimum Polymer Rate[1] (GAL/100 SF)	Aggregate[2] (LBS/SY)
1	2.5	10+
2	5.0	14+

[1] The minimum total applications rate is 7.5 GAL/100 SF.

[2] Application of aggregate shall be of sufficient quantity to completely cover the polymer.

C.5 Minimum Curing Periods

As a minimum, cure the coating as follows:

	Average temperature of deck, polymer and aggregate components in degrees F							
Course	**50-54**	**55-59**	**60-64**	**65-69**	**70-74**	**75-79**	**80-84**	**85-99**
1	6 hrs.	5 hrs.	4 hrs.	3 hrs.	2.5 hrs	2 hrs	1.5 hrs.	1 hr.
2	8 hrs.	6.5 hrs.	6.5 hrs.	5 hrs.	4 hrs.	3 hrs.	3 hrs.	3 hrs.

If faster cure times are desired and achievable, submit to the engineer a certified test report from an independent laboratory showing the material is able to reach a compressive strength of 1000 psi as tested per ASTM C 579 Method B within the temperature ranges and cure times for which the product is proposed to be placed. Establish ambient air, material, and substrate temperatures from the manufacturer for field applications. Field applications will not be allowed below the documented temperatures.

C.6 Repair of Polymer Overlay

Repair all areas of unbonded, uncured, or damaged polymer overlay for no additional compensation. Submit repair procedures from the manufacturer to the engineer for approval. Absent a manufacturer's repair procedures and with the approval of the engineer, complete repairs according to the following: Saw cut the limits of the area to the top of the concrete; remove the overlay by scarifying, grinding, or other approved methods; shot blast or sand blast and air blast the concrete before placement of polymer overlay; and place the polymer overlay according to section C.3.

D Measurement

The department will measure Polymer Overlay by the square yard, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
509.5100.S	Polymer Overlay	SY

Payment is full compensation for preparing the surface; for tensile bond testing; for creating the transitional area; for providing the overlay; for cleanup; and for sweeping/vacuuming and disposing of excess materials.

The department will pay separately for deck repairs.

stp-509-030 (20200629)

103. Removing Asphaltic Concrete Deck Overlay B-40-577, Item 509.9010.S.0001; Removing Asphaltic Concrete Deck Overlay B-40-578, Item 509.9010.S.0002.

A Description

This special provision describes removing asphalt bridge deck overlays with or without a waterproofing membrane by milling the entire bridge deck as the plans show.

Conform to standard spec 204 as modified in this special provision.

B (Vacant)

C Construction

C.1 Milling

Use a self-propelled milling machine that is specially designed and constructed for milling bridge decks. It shall mill without tearing or gouging the concrete masonry underlying the existing overlay. The machine shall consist of a cutting drum with carbide or diamond tip teeth. Space the teeth on the drum to mill a surface finish that is acceptable to the engineer.

Shroud the machine to prevent discharge of any loosened material into adjacent work areas or live traffic lanes. Equip the machine with electronic devices that provide accurate depth, grade and slope control, and an acceptable dust control system.

Perform milling in a manner that precludes damage to the bridge floor and results in a uniform textured finish that:

1. Is free of sharp protrusions;
2. Removes a minimum of 1/4 inch of the original concrete deck or slab, or to a depth the plans show;
3. Has uniform transverse grooves that measure up to 1/4 inch vertically and transversely; and
4. If applicable, is acceptable to the manufacturer of the sheet waterproof membrane.

Windrowing or storing of the removed milled asphaltic concrete on the bridge is only permitted in connection with the continuous removal and pick-up operation. During nonworking hours, clear the bridge of all materials and equipment.

D Measurement

The department will measure Removing Asphaltic Concrete Deck Overlay by the square yard, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
509.9010.S.0001	Removing Asphaltic Concrete Deck Overlay B-40-577	SY
509.9010.S.0002	Removing Asphaltic Concrete Deck Overlay B-40-578	SY

Payment is full compensation for removing the asphaltic concrete with or without a waterproofing membrane; removing the underlying concrete as the spec or plans show; and for properly disposing of all materials.

stp-509-010 (20210113)

104. Floor Drains, Deck Drains, and Downspouts UPRR.

Replace subsection 514.3.3(2) of the standard specifications with the following:

(2) Set the deck drains, conforming to the shop drawings and as the plans show, on the spray-applied membrane waterproofing system of the railroad bridge deck. Ensure that the pipe perforations are not plugged with any of the membrane waterproofing system. Clear plugged holes without exposing bare metal, using approved methods by the engineer and the UPRR engineer.

105. Sheet Membrane Waterproofing, Item 516.0600.S.

A Description

This special provision describes preparing the surface, furnishing and installing a primer, waterproofing membrane, and hot rubberized sealer or mastic, or both, on the bridge decks or box culverts to be overlaid with asphaltic overlay as the plans show.

B Materials

B.1 Waterproofing System

For bridge decks to be overlaid with asphaltic overlay or buried structures with a minimum earth cover of less than 6” between the waterproofing membrane and the asphaltic overlay, select a membrane from the Sheet Membrane Waterproofing for Asphalt Overlay Applications Approved Product List (APL), or furnish a waterproofing system meeting the requirements as defined in the table.

Provide a material in the waterproofing system that is specifically designed for use with an asphaltic overlay. The membrane shall consist of a cold-applied, self-adhering membrane incorporating a heat resistant woven or non-woven fabric or fiberglass reinforcing laminated in between layers of polymer modified bitumen or SBS modified rubberized asphalt. The membrane shall have a release film, polyester or polyethylene on the down side and may have a thin spun bonded open weave polyester fabric on the up side that will bond with the asphaltic overlay; yet will permit driving rubber-tired trucks, pavers and other construction vehicles on the membrane covered bridge deck or box culvert top slab. Provide a composite sheet membrane with the following properties:

Property	Test Method	Specific Value
Width		36 inch min.
Tensile Strength	ASTM D 412, ASTM D882, or ASTM 1000	50 lb/in or 700 psi min.
Thickness		60 mils to 80 mils
Puncture Resistance	ASTM E 154	40 lb. min.
Permeance	ASTM E 96, Method B	0.05 US Perms max.
Low Temperature Pliability	ASTM D 146, 1-inch Mandrel @ -25° F Or ASTM D1970	Unaffected
Water Absorption	ASTM D570, 72 hr.	0.25% max.
Peel Adhesion	ASTM D 903	5 lb/in width min.
Compound Softening Point	ASTM D 36	210° F ± 20° F

Provide rubberized asphalt compound containing not more than 15% inorganic residue or filler material.

Provide primer, mastic and/or hot rubberized asphalt sealer conforming to the specified properties required by the manufacturer of the waterproofing membrane.

B.2 Materials Certification for Product Not on APL

Waterproofing products not on the APL are required to provide material certification.

Before membrane approval for initial submittals and/or upon reformulation of membrane material compounds, submit to the engineer a notarized certification by an independent test laboratory stating that the materials conform to the requirements of these specifications. The certification shall include or have attached specific results of tests performed on the material supplied. Samples of any material for testing may be required by the engineer.

C Construction

C.1 Application Methods

Apply materials in strict accordance with the manufacturer's instructions. In order to install the waterproofing membrane, the deck or buried structure temperature shall be a minimum of 45° F and rising. Before applying the system, become acquainted with the materials specified and their handling characteristics and become thoroughly familiar with the construction procedures recommended by the manufacturer. Furnish a copy of the recommended procedures to the engineer. To establish procedures for maintaining optimum working conditions and to coordinate work related to adjacent construction, hold a pre-installation conference with a manufacturer's representative, the engineer, and other affected contractors before starting construction. To provide quality assurance that the membrane has been properly installed, a manufacturer's representative familiar with the membrane installation procedures shall be present during placement of the membrane.

Clean and make free of asphaltic patches, fast setting concrete patches, and all spalled, unsound or disintegrated areas of concrete the entire deck area of the structures being overlaid including curbs and parapets. Provide a minimum cure time of three days for repaired areas before resuming construction operations on the deck, and provide a minimum cure time of seven days before placing the primer. Repairing these areas with concrete masonry deck patching, concrete surface repair or curb repair will be paid for separately. Before placing the primer prepare the surface of the entire deck surface areas of the structures by shot blast cleaning.

The shot blast cleaning shall include the vertical face of the curbs or parapets to the height of the specified finish pavement surface and elevation. The shot blasting machine used for this procedure shall be capable of propelling steel shot against the deck surface in a uniform method to remove all foreign material and loose concrete. The shot blasting operation shall include collection and disposal of used steel shot and dust. As per manufacturer's recommendations, all pavement-marking lines within the cleaning area shall be sufficiently removed to prevent bleeding through the primer. After shot blasting operations, remove by sweeping, compressed air blasting, pressure washing with water or by other satisfactory means any foreign material remaining on the concrete deck. The deck shall be clean, dry and free from mud, dirt, sand, oil or grease and any other contaminants before application of the primer. No

vehicles or equipment will be permitted on the concrete deck after surface preparation except those necessary for the installation of the waterproofing membrane. The engineer will inspect the concrete deck before the application of the primer. Do not begin application of either the primer or membrane until after the engineer grants approval.

To coat all surfaces of the deck, curb and/or parapet that will be covered with the membrane, apply primer uniformly as recommended by the manufacturer. Use roller, brush or spray to apply primer to the surfaces. If spraying is used, an approved method of protecting the environment is required.

Allow the primer to dry until tack free (approximately forty-five minutes) before applying the membrane. Apply primer only to an area that will be covered with the membrane within the same calendar day. If the surface of the concrete deck becomes contaminated, clean and reprime the area.

Apply primer on the curb faces, raised deck drains and expansion joints to the top of the proposed asphaltic overlay. Take care to ensure that all inside corners are coated with primer.

After the primer has dried to a tack free condition, apply one layer of membrane to the deck starting on the low side edge.

To form a bond with the primed deck, remove the release film from the membrane on the tacky side while the membrane is rolled face down. Apply the membrane by hand methods or by using mechanical applicators. Overlap a minimum of 2.5 inches at the edges of each strip and overlap the membrane in such a manner to provide a shingling effect toward the low side of the deck cross section. Overlap a minimum of 5 inches at the ends of each strip of membrane and overlap the membrane in such a manner to provide a shingling effect toward the lower side of the deck profile. Roll the entire membrane surface with a rubber tire roller to ensure firm and uniform contact with the primed surface. Use special care to ensure that the membrane is uniformly adhered to the concrete and that the entire membrane is free of wrinkles, air bubbles, and other placement defects. In the event bubbles or blisters do form under the membrane, puncture the bubbles or blisters with a sharp pointed instrument such as an awl and press the membrane firmly into contact with the deck. Repair any membrane punctures, tears, holes, and misaligned or inadequate seams with a patch of waterproofing membrane sized as required to ensure that the membrane is watertight. Apply membrane flashing to raised deck drains and expansion joints and cut, fit and seal the membrane flashing with mastic or by heat sealing.

Apply the primer and membrane to an area at least 6 inches wider than will be paved with asphalt to provide a lap with subsequent application of primer and membrane when required in order to accommodate traffic control staging. Cover the inside corners of curbs or parapets and all other perimeter edges with narrow strips (flashing strips of approximately 12 inches), hot rubberized sealer, or mastic according to the manufacturer’s guidelines. As an additional method of ensuring a watertight bond, all terminating edges, transverse overlaps and longitudinal overlaps may be heated with a propane torch to soften the top mat and fuse the surfaces together.

The applicator foreman or leadworker shall be certified by the manufacturer of the waterproofing membrane as approved applicators, and shall be present during all applications.

C.2 Overlaying the Membrane with Asphaltic Overlay

Construct the asphaltic overlay according to scheduling requirements elsewhere in the contract. Cover all exposed membrane with the specified asphaltic mix within five days after installation. Only rubber-tired construction vehicles shall be permitted on the membrane. Use caution not to turn the tires when a vehicle is stationary. To prevent tearing the membrane, avoid sudden starts, stops, accelerations, or decelerations. Chemical solvents, gasoline, diesel fuel, mineral spirits, etc. or other deleterious substances shall not be spilled or leaked onto the membrane. Before covering the membrane with asphaltic overlay, clean the membrane of mud, dirt, sand, oil, grease, or any other contaminants, and dry the membrane. Patch contaminated areas as required by the engineer. When required to accommodate traffic control staging, the construction of the asphaltic overlay shall stay at least 6 inches away from the terminating edge of the membrane to provide for overlap.

The placement temperature of the asphaltic overlay shall be between 300° F and 350° F. Do not place asphaltic overlay on the membrane outside of this temperature range. The temperature of the uncompacted mat of asphaltic concrete shall not fall below 280° F before rolling. The thickness of the asphaltic overlay layers shall be as the plans show; the initial layer shall have a minimum compacted thickness of 1½ inches. The membrane applicator contractor shall have a minimum of one employee present during all asphaltic overlay paving operations to ensure that all necessary membrane repairs will be accomplished.

D Measurement

The department will measure Sheet Membrane Waterproofing, installed according to the contract and accepted, in area by the square yard. Measurement shall be based on the horizontal distance between the face of the curbs or parapets and the horizontal length of membrane installed. Any material specified to be applied up the face of the curb or parapet shall not be included in the measured quantity.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
516.0600.S	Sheet Membrane Waterproofing	SY

Payment is full compensation for furnishing and placing the primer, membrane, mastic, and hot rubberized asphalt sealer, for preparing the surface, and placing all strips of membranes.

106. Structure Repainting General.

A General

A.1 Inspection

On all structures in this contract, notify the engineer of any missing or broken bolts or nuts, any missing or broken rivets, or of any cracks or flaws in the steel members while cleaning or painting.

A.2 Date Painted

At the completion of all painting work, stencil in black paint or contrasting color paint the date of painting the bridge. The numbers shall be 3 inches (75 mm) in height and shall show the month and year in which the painting was completed: e.g., 11-95 (November 1995). On each bridge painted, stencil the date at two locations. On truss bridges, stencil the date on the cover plates of end posts near and above the top of the railings at the oncoming traffic end. On steel girder bridges, stencil the date on the inside of the outside stringers at the abutments. The date on grade separation bridges shall be readable when going under the structure or at some equally visible surface near the ends of the bridge, as designated by the engineer.

A.3 Graffiti Removal

Remove any graffiti on concrete abutments, piers, pier caps, parapet railings, slope paving or any other location at the direction of the engineer. Use a brush sandblast to remove graffiti.

The above work will not be measured and paid for separately but will be considered incidental to other items in the contract.

B (Vacant)

C Construction

C.1 Repainting Methods

Do not perform blasting, cleaning and painting on days of high winds. Prevailing winds in excess of 15 mph (25 km/hr) shall be considered high winds.

Place the final field coat of paint on the exterior of the exterior beams as a continuous painting operation. Stop at splices, vertical stiffeners or other appropriate locations so that lap marks are not evident or noticeable.

Completely clean and remove spent abrasive and other waste materials resulting from the contractor's operation from bridge deck surfaces, gutter lines, drains, curbs, bridge seats, pier caps, slope paving, roadway below, and all structural members and assemblies.

C.2 Inspection

Add the following to standard spec 105.9:

Furnish, erect and move scaffolding and other equipment to allow the inspector to closely observe all affected surfaces. The scaffolding, with appropriate safety devices, shall meet the approval of the engineer.

stp-517-005 (20150630)

107. Preparation and Coating of Top Flanges B-40-732, Item 517.0901.S.0003; Preparation and Coating of Top Flanges B-40-733, Item 517.0901.S.0004; Preparation and Coating of Top Flanges B-40-734, Item 517.0901.S.0005; Preparation and Coating of Top Flanges B-40-735, Item 517.0901.S.0006.

A Description

This special provision describes thoroughly cleaning and coating the top surface and edges of the top flanges, removing loose paint, rust, mill scale, dirt, oil, grease, or other foreign substances until the specified finish is obtained.

B (Vacant)

C Construction

For top flanges and edges that have no paint on them and according to the department's Pre-Qualified Paint Systems for Structure Overcoating Cleaning and Priming, clean the top surface and edges of the top flanges and paint them with one coat of an approved zinc rich primer. Paint for Solvent Cleaning for Overcoat-minimum Cleaning (SP-1) is not allowed.

For top flanges and edges that have paint on them and according to the department's Pre-Qualified Paint Systems for Structure Overcoating Cleaning and Priming, clean all areas of rust and loose paint on the top surface and edges of the top flanges. Wash the top surface and edges of the top flanges and paint them with one coat of an approved zinc-rich primer according to paint manufacture's recommendations. If flash rusting occurs before the application of the primer, stop painting application, remove the flash rusting and paint cleaned surface. Paint for Solvent Cleaning for Overcoat-minimum Cleaning (SP-1) is not allowed.

Where plans call for the cleaning of other painted structural steel including hanger assemblies, bearings, field splices, and connections, clean areas of loose paint and rust according to the department's Pre-Qualified Paint Systems for Structure Overcoating Cleaning and Priming, or and according to paint manufacture's cleaning recommendations. Sound paint need not be removed with the exception of an area 12 inch on either side of hanger assembly centerlines. Clean this area to base metal according to the paint manufacture's cleaning recommendations and paint them one coat of an approved zinc-rich primer according to paint manufacture's recommendations. Paint for Solvent Cleaning for Overcoat-minimum Cleaning (SP-1) is not allowed.

For areas of exposed steel members that are to be imbedded in new concrete and according to the department's Pre-Qualified Paint Systems for Structure Overcoating Cleaning and Priming, thoroughly clean the surface area of exposed steel members that are to be imbedded in the new concrete and solvent wash and paint one coat of an approved zinc rich primer according to paint manufacture's recommendations to these areas. Paint for Solvent Cleaning for Overcoat-minimum Cleaning (SP-1) is not allowed.

According to the approved project specific hazardous material containment plan, furnish and erect tarpaulins or other materials to collect all of the spent paint containing material resulting from blasting or hand and power tool cleaning and coating. Minimize dust during all clean-up activities. Collect and store waste material at the end of each work day or more often if needed. Store waste materials in the hazardous waste containers provided. Lock and secure all waste containers at the end of each work day. Cover containers at all times except when adding or removing waste material. Store the containers in an accessible and secured area, not located in a storm water runoff course, flood plain or exposed to standing water. Transportation and disposal of such waste material will be the responsibility of the department.

Damage to existing painted surfaces as a result of construction operations, shall be restored to the approval of the engineer at the contractor's expense.

D Measurement

The department will measure Preparation and Coating of Top Flanges (Structure #) as a single unit for each structure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.0901.S.0003	Preparation and Coating of Top Flanges B-40-732	EACH
517.0901.S.0004	Preparation and Coating of Top Flanges B-40-733	EACH
517.0901.S.0005	Preparation and Coating of Top Flanges B-40-734	EACH
517.0901.S.0006	Preparation and Coating of Top Flanges B-40-735	EACH

Payment is full compensation for preparing and cleaning the designated surfaces; and for furnishing and applying the coating.

stp-517-010 (20210708)

108. Structure Repainting Recycled Abrasive B-40-577, Item 517.1801.S.0001; Structure Repainting Recycled Abrasive B-40-578, Item 517.1801.S.0002.

A Description

This special provision describes surface preparation and painting of the metal surfaces according to the manufacturer's recommendations as modified in this special provision.

A.1 Areas to be Cleaned and Painted

All structural metal surfaces of:

1. Structure B-40-577 9,159 SF.
2. Structure B-40-578 9,192 SF.

Areas are approximate and given for informational purposes only.

B Materials

B.1 Coating System

Furnish a complete coating system from the department's approved list for "Structure Repainting Recycle Abrasive Structure". The color for the finish coating material shall match the color number the plans show according to Federal Standard Number 595. Supply the engineer with the product data sheets for approval before any coating is applied. The product data sheets shall indicate the mixing and thinning directions, the recommended spray nozzles and pressures, and the minimum drying time between coats.

The color of the primer must be such that a definite contrast between it and the color of the blasted steel is readily apparent. There shall be a color contrast between all subsequent coats for the paint system selected. Submit color samples of the primer and all coats to the engineer for approval before any application of paint.

C Construction

C.1 Surface Preparation

Before blast cleaning, solvent clean all surfaces to be coated according to SSPC-SP1.

All metal surfaces must be blast cleaned according to SSPC-SP10 and verified before painting.

Upon completion of surface preparation, test representative surfaces, which were previously rusted (i.e. pitted steel) for the presence of residual chloride. Perform Surface Contamination Tests (SCAT) according to the manufacturer's recommendations. The tests must be witnessed by the engineer. If chlorides are detected at levels greater than 7ug/cm^2, continue to clean the affected areas until results are below the specified limit. Submit anticipated testing frequencies and chloride remediation methods to the engineer for review and approval.

Apply the prime coat the same day that the metal surfaces receive the No. 10 blast or re-blast before application. Cleaned surfaces shall be of the specified condition immediately before paint application. If rust bloom occurs before applying the primer, stop the painting operation in the area of the rust bloom and re-blast and clean the area to SSPC SP-10 before applying the primer.

The steel grit and any associated equipment brought to the site and used for blast cleaning shall be clean. Remove immediately dirty grit or equipment brought to the site at no expense to the department.

Furnish an abrasive that has a gradation such that it will produce a uniform surface profile between 1 to 3 mils on the steel surface, as measured according to ISO 8503-5.

The abrasive blasting and recovery system shall be a completely integrated self-contained system for abrasive blasting and recovery. It shall be an open blast and recovery system that will allow no emissions from the recovery operation. The recovery equipment shall be such that the amount of contaminants in the clean recycled steel grit shall be less than 1 percent by weight as per SSPC AB-2.

Remove by grinding all fins, tears, slivers, and burred or sharp edges that are present on any steel member, or that appear during the blasting operation, and re-blast the area to give a 1 to 3 mils surface profile.

Remove all spent material and paint residue from steel surfaces with a good commercial grade vacuum cleaner equipped with a brush-type cleaning tool, and test cleanliness according to ASTM D4285. The airline used for surface preparation shall have an in-line water trap and the air shall be free of oil and water as it leaves the airline.

Take care to protect freshly coated surfaces from subsequent blast cleaning operations. Thoroughly wire brush damaged primed surfaces with a non-rusting tool, or if visible rust occurs, re-blast to a near white condition. Clean and re-prime the brushed or blast cleaned surfaces according to this specification.

C.2 Coating Application

Apply paint according to the manufacturer’s recommendations in a neat workmanlike manner. Paint application shall normally be by airless spray or inaccessible areas by brush, roller or other methods approved by the engineer.

The engineer may allow the use of conventional spray equipment after satisfactory demonstration by the contractor of the proper application technique and handling of that equipment.

Mix the paint or coatings according to the manufacturer’s directions to a smooth lump-free consistency. Keep paint thoroughly mixed during the painting application.

After the inspector approves the entire cleaned surface to be coated, apply a prime coat uniformly to the entire surface. Either before or after applying the prime coat, brush or spray a stripe coat of primer on all plate edges, bolt heads, nuts, and washers. Apply succeeding coats as the product data sheet shows.

Remove all dry spray by vacuuming, wiping, or sanding if necessary.

If the application of the coating at the required thickness in one coat produces runs, bubbles, or sags; apply a "mist-coating" in multiple passes of the spray gun; separate the passes by several minutes. Where excessive coating thickness produces "mud-cracking", remove such coating back to soundly bonded coating and re-coat the area to the required thickness.

The resultant paint film shall be smooth and uniform, without skips or areas of excessive paint according to SSPC PA1.

The coating is supplied for normal use without thinning. If in cool weather it is necessary to thin the coating for proper application, thin according to the manufacturer’s recommendations.

During surface preparation and coating application the ambient and steel temperature shall be between 39 degrees F and 100 degrees F. The steel temperature shall be at least 5 degrees F above the dew point temperature. (This requires the steel to be dry and free of any condensation or ice regardless of the actual temperature of the steel.) The relative humidity shall not exceed 85%. The manufacturer’s ambient condition requirements must be followed if they are more stringent.

Paint thickness shall be within the requirements for a three coat paint system listed in the department’s approved list for Structure Repainting Recycle Abrasive Structure and the paint system being used.

Time to recoat shall be according to the manufacturer’s recommendations.

The dry film thickness will be determined by use of a magnetic film thickness gage. The gage shall be calibrated for dry film thickness measurement according to SSPC-PA 2. Dry film thickness in each area measured will be based on an average of three gage readings, after calibration of the gage to account for surface profile of the bare steel as a result of surface preparation.

D Measurement

The department will measure Structure Repainting Recycled Abrasive (Structure #) as a single unit for each structure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.1801.S.0001	Structure Repainting Recycled Abrasive B-40-577	EACH
517.1801.S.0002	Structure Repainting Recycled Abrasive B-40-578	EACH

Payment is full compensation for preparing and cleaning the designated surfaces; furnishing and applying the paint; and for providing the listed equipment.

stp-517-050 (20210708)

109. Negative Pressure Containment and Collection of Waste Materials, B-40-577, Item 517.4501.S.0001; Negative Pressure Containment and Collection of Waste Materials, B-40-578, Item 517.4501.S.0002.

A Description

This special provision describes providing a dust collector to maintain a negative air pressure in the enclosure; furnishing and erecting enclosures as required to contain, collect and store waste material resulting from the preparation of steel surfaces for painting, and repainting, including collection of such waste material, and labeling and storing waste material in approved hazardous waste containers.

B (Vacant)

C Construction

Erect an enclosure to completely enclose (surround) the blasting operations. The ground, slope paving, or roadway cannot be used as the bottom of the enclosure unless covered by approved containment materials. So that there are no visible emissions to the air or ground or water, design, erect, operate, maintain and disassemble the enclosures in such a manner to effectively contain and collect dust and waste materials resulting from surface preparation and paint over spray. Suspend all enclosures over water from the structure or as approved by the engineer.

Construct the enclosure of flexible materials such as tarpaulins or of rigid materials such as plywood, or of a combination of flexible and rigid materials and meet SSPC Guide 6 requirements with Level 1 emissions. Systems manufactured and provided by Eagle Industries, Detroit Tarps, or equal, are preferred. The tarpaulins shall be a non-permeable material, either as part of the tarp system or have a separate non-permeable lining. Maintain all materials free of tears, cuts or holes. The vertical sides of the enclosure shall extend from the bottom of the deck down to the level of the covered work platform or covered barge where used for structures over water and shall be fastened securely to those levels to prevent the wind from lifting them. Bulkheads are required between beams to enclose the blasting area as approved by the engineer. Where bulkheads are required, construct them of plywood and properly seal them. To prevent spent materials and paint over spray from escaping the enclosed area, overlap and fasten together all seams. Place groundcovers under all equipment before operations or as approved by the engineer.

To allow proper cleaning, inspection of structures or equipment, and painting, provide safe adequate artificial lighting in areas where natural light is inadequate.

Provide a dust collector so that there are no visible emissions outside of the enclosure and so that a negative air pressure inside the enclosure is maintained. The dust collector shall be sized to maintain the minimum air flow based on the cross-sectional area of the enclosure.

A combination of positive air input and negative air pressure may be needed to maintain the minimum airflow within the enclosure.

Filter all air exhausted from the enclosure to create a negative pressure within the enclosure so as to remove all hazardous and other particulate matter.

After all debris has been removed and all painting has been approved in the containment area is complete, remove containment according to SSPC Guide 6.

As a safety factor for structures over water, provide for scum control. Provide a plan for corrective measures to mitigate scum forming and list the procedures, labor and equipment needed to assure compliance. Effectively contain the scum that forms on the water and does not sink in place from moving upstream or downstream by the use of floating boom devices.

If in the use of floating boom devices, the scum tends to collect at the devices, contain, collect, store the scum, and do not allow it to travel upstream or downstream beyond the devices. Remove the scum at least once a day or more often if needed.

Collect and store at the bridge site for disposal all waste material or scum collected by this operation, or any that may have fallen onto the ground tarps. Collect and store all waste material and scum at the end of each workday or more often if needed. Storage shall be in provided hazardous waste containers. Label each container as it is filled, using the labels provided by the Hazardous Waste Disposal contractor. Check the label and ensure that the project ID, bridge number and EPA ID match the structure. Fill in the generation date when the first material is placed in the container. Secure all containers at the end of each workday. Keep the containers covered at all times except to add or remove waste material. Store the containers in an accessible and secured area, not located in a storm water runoff course, flood plain, or exposed to standing water.

In a separate operation, recover the recyclable abrasive for future application, and collect the paint and/or corrosion particles for disposal.

D Measurement

The department will measure Negative Pressure Containment and Collection of Waste Materials (Structure #) as a single unit for each structure, acceptably completed

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.4501.S.0001	Negative Pressure Containment and Collection of Waste Materials B-40-577	EACH
517.4501.S.0002	Negative Pressure Containment and Collection of Waste Materials B-40-587	EACH

Payment is full compensation for designing, erecting, operating, maintaining, and disassembling the containment devices; providing negative pressure exhaust ventilation; collecting, labeling, and for storing spent materials in provided hazardous waste containers.

stp-517-065 (20210708)

110. Labeling and Disposal of Waste Material.

The EPA ID number for Structure pair B-40-577 and B-40-578 is WIR000178798.

The state has an exclusive mandatory use contract with a private waste management contractor to transport and dispose of hazardous waste.

The state's waste management contractor shall furnish and deliver appropriate hazardous waste containers and site-specific labels to each bridge site. The provided containers shall be placed at pre-selected drop-off and pick-up points at each bridge site, and these locations shall be determined at the preconstruction conference. The custody of the containers and labels shall be the responsibility of the painting contractor while they are at the job site.

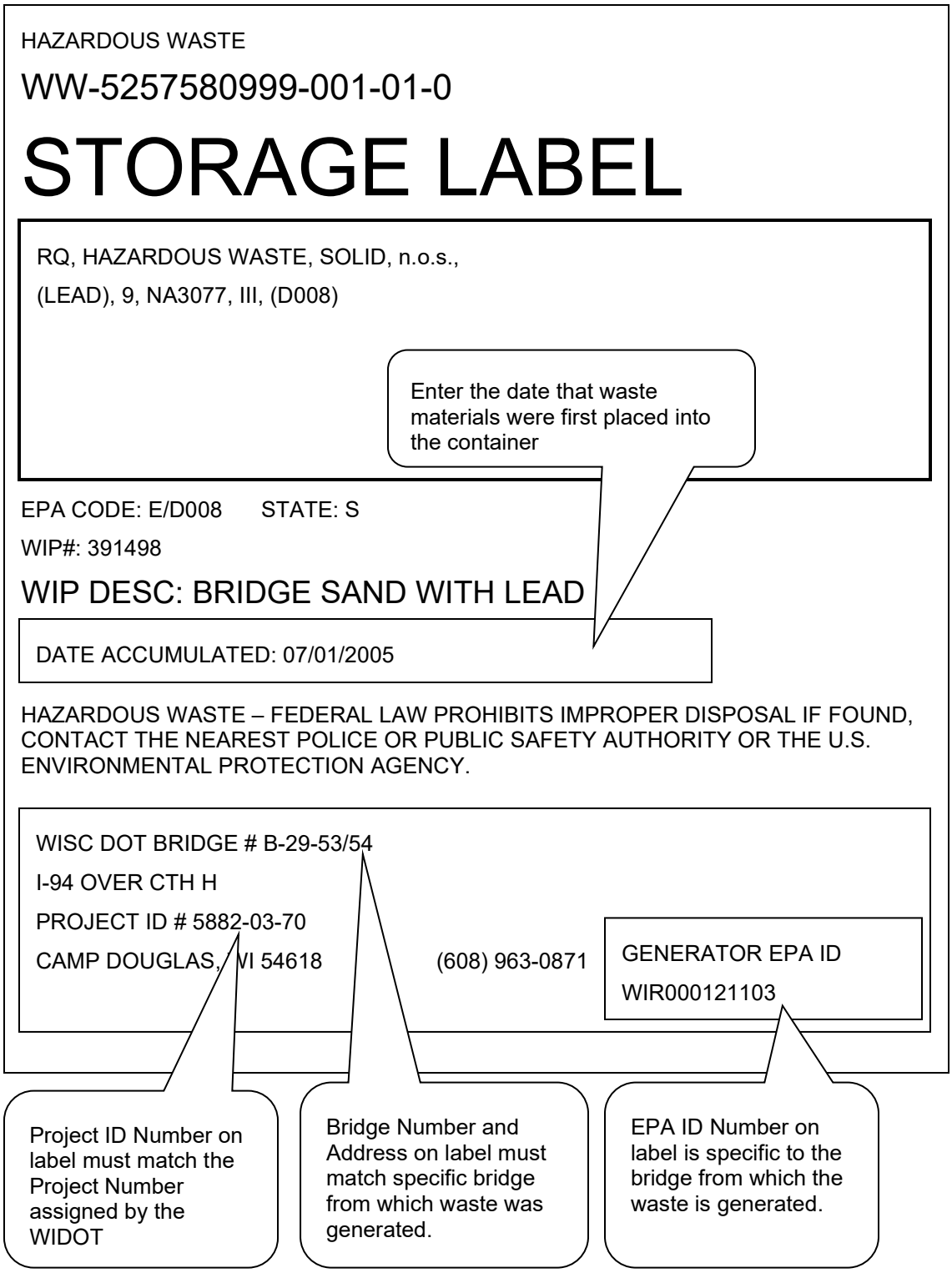
Contact the waste management contractor a minimum of 10 working days in advance to request container drop-off or pickup. Provide the waste management contractor with the project ID, structure number, EPA ID, and the agreed-upon location for container staging. Contact information for the waste management contractor is located on the WisDOT Internet site at https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/environment/hazwaste-contacts.pdf

Report all reportable spills and discharges according to the contingency plan.

Labels are site-specific. Check the labels to ensure that the project ID, structure number, and EPA ID match the structure generating the waste. Apply a label to each drum when it is opened for the first time. Fill in the date on the label the first day material is accumulated in the drum. The following page is an example of a properly filled-in label.

During paint removal operations, continuously monitor and notify the project inspector of the status of waste generation and quantity stored so that timely disposal can be arranged.

stp-517-055 (20190618)



111. Portable Decontamination Facility, Item 517.6001.S.

A Description

This special provision describes furnishing and maintaining weekly, or more often if needed, a single unit portable decontamination facility.

B Materials

Supply and operate all equipment according to OSHA.

Supply adequate heating equipment with the necessary fuel to maintain a minimum temperature of 68° F in the facility.

The portable decontamination facility shall consist of a separate "Dirty Room", "Shower Room" and "Clean Room". The facility shall be constructed so as to permit use by either sex. The facility shall have adequate ventilation.

The "Dirty Room" shall have appropriately marked containers for disposable garments, clothing that requires laundering, worker shoes, and any other related equipment. Each container shall be lined with poly bags for transporting clothing, or for disposal. Benches shall be provided for personnel.

The "Shower Room" shall include self-contained individual showering stalls that are stable and well secured to the facility. Provide showers with a continuous supply of potable hot and cold water. The wastewater must be retained for filtration, treatment, and/or for proper disposal.

The "Clean Room" shall be equipped with secure storage facilities for street clothes and separate storage facilities for protective clothing. The lockers shall be sized to store clothing, valuables and other personal belongings for each worker. Benches shall be provided for personnel.

Supply a separate hand wash facility, either attached to the decontamination facility or outside the containment.

C Construction

Properly contain, store, and dispose of the wastewater.

D Measurement

The department will measure Portable Decontamination Facility by each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.6001.S	Portable Decontamination Facility	EACH

Payment is full compensation for furnishing and maintaining a portable decontamination facility.

stp-517-060 (20140630)

112. Noise Barriers Double-Sided Sound Absorptive N-40-99, Item 541.0300.S.0301; Noise Barriers Double-Sided Sound Absorptive N-40-100, Item 541.0300.S.0302; Noise Barriers Double-Sided Sound Absorptive N-40-102, Item 541.0300.S.0303; Noise Barriers Double-Sided Sound Absorptive N-40-103, Item 541.0300.S.0304.

A Description

This special provision describes designing, fabricating, transporting, and erecting composite concrete double-sided sound absorptive noise barriers as the plans show and conforming to department-approved installation specifications.

B Noise Wall System

B.1 System Pre-Qualification and Selection

The noise wall system supplied must be pre-qualified by the department. The department maintains a list of pre-qualified systems which can be viewed online at:

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/default.aspx

Systems eligible for use on this project shall be pre-qualified before the award of this contract.

Provide the name of the selected system, and the intended fabricator to the engineer within 25 days after award of the contract. Schedule a pre-design meeting with the engineer subsequent to award of the contract and before beginning design of the noise barrier. A representative of the fabricator of the noise barrier components shall attend this meeting.

B.2 Design

B.2.1 Structural and Foundation Design

The structural and foundation design of the noise barrier system shall conform to the current edition of "AASHTO LRFD Bridge Design Specifications" published by the American Association of State Highway and Transportation Officials (AASHTO), 444 North Capitol Street, NW, Suite 225, Washington, DC 20001, with the following exceptions:

The minimum design wind pressure shall be 35 pounds per square foot (Strength III) for ground mounted noise barriers and 40 pounds per square foot (Strength III) for structure mounted noise barriers, unless specified otherwise on the plans. For ground and structure mounted noise barriers, the minimum Service I design wind pressure shall be 15 pounds per square foot. All wind loads shall be applied perpendicular to the barrier, alternately in each direction.

Design drilled shaft foundations using the Broms Method. Ignore the top 1 foot of supporting soil in the design of ground-mounted barrier foundations.

In addition to wind loads, design the bottom noise barrier panel to support the dead load (weight) of the panels directly above it and its own dead load. Assume this dead load to be distributed uniformly across the bottom panel acting as a simple beam supported at the posts.

Bottom noise barrier panels shall have a minimum amount of perimeter reinforcement of a #4 bar which shall be continuous around the corners. Reinforcing steel in the concrete core of noise barrier panels shall have a minimum clear cover of 1 inch. Clear cover does not include sound absorptive material. Design the reinforced concrete core to resist the loads without considering any composite action from other material in the panel.

Provide a neoprene bearing pad or equivalent material of 1/4 inch minimum thickness between the foundation and the bottom panels. The allowable bearing stress shall not exceed 900 psi. Precast concrete pedestals placed between the foundation and bottom panels shall be reinforced if over 1’-0" high. The bearing pads shall be preformed EPDM rubber conforming to ASTM D-2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80.

B.2.2 Fire Hose Access Openings

Design fire hose access openings, at locations the plans show, with additional reinforcement and clear cover around the opening as necessary to maintain structural integrity. Detail drawings shall show the additional reinforcement and method for attaching the Fire Hydrant Location Signs to the barrier panel.

B.2.3 Barrier Profile

Unless the plans show or the engineer approves otherwise, design the top of the noise barrier to be horizontal and at or above the acoustic elevation line the plans show. The bottom elevation of the noise barrier shall be as the plans show. Changes in elevation shall be accomplished by stepping sections at posts. Steps shall not exceed 3-feet in height. All joints shall be horizontal or vertical and shall be aligned with the adjacent panels.

B.2.4 Panel Orientation

Design the panels to prevent entrapment and ponding of water. Avoid inadvertently providing areas for perching, nesting of birds or collecting of dirt and debris in the design of the noise barrier system.

B.2.5 Sound Transmission Loss (TL)

Design the noise barrier panel material to achieve a transmission loss equal to or greater than 20 decibels in all test frequency bands, as referenced in ASTM E90.

B.2.6 Noise Reduction Coefficient (NRC)

Design the noise barrier system so that the highway sides of the noise barrier panels have a minimum NRC of 0.80 and the residential sides have a minimum NRC of 0.70 as referenced in ASTM C423.

B.2.7 Design Coordination

Design the noise barrier post spacing so as not to interfere with the existing utility and drainage facilities.

Design the noise barrier post spacing so as not to interfere with proposed utility and drainage facilities the plans show. This includes proposed roadway lighting and ITS facilities.

For noise barriers mounted behind or near proposed retaining walls, coordinate and design the noise barrier post spacing so as to not interfere with embedded portion of the proposed retaining walls, including MSE wall soil reinforcement and tieback anchors on soldier pile and timber lagging retaining walls.

For noise barriers mounted on proposed bridges and retaining walls, coordinate and design the noise barrier post spacing to coincide with noise barrier post and embedded noise barrier anchor assembly spacing shown on the bridge and retaining wall plans. Coordinate any required changes to the noise barrier post spacing and embedded noise barrier anchor assembly locations shown on the bridge and retaining wall plans, if required for the design of the noise barrier.

B.2.8 Weep Hole Openings

Design panels such that weep hole openings in noise wall to allow water to drain can be field installed per C.3 at locations the plans show.

B.2.9 Maintenance Doors

Design maintenance doors and door portals in noise walls, at locations the plans show, with additional reinforcement and clear cover around the opening as necessary to maintain structural integrity per B.2.1.

B.3 Materials

Required material certifications and testing are the responsibility of the contractor. All certifications and test reports shall carry the name and address of the fabrication facility where the specific material was produced.

B.3.1 Concrete Masonry

Provide grade A concrete conforming to standard spec 501 as modified in standard spec 716 for concrete posts and the core component of composite concrete sound absorbing panels. Provide QMP for class II ancillary concrete as specified in standard spec 716.

B.3.2 Materials Testing General

All test reports shall carry the name and address of the laboratory where testing was performed, and the name of the person in responsible charge of the specific tests for which data is presented. Materials tested shall be representative of materials manufactured for this specific contract. Panels tested or from which samples will be taken will be selected and appropriately marked by the engineer either at the manufacturer's plant or from panels delivered to the project at the engineer's option.

Testing as detailed below is required for each lot of material not to exceed 100,000 SF of noise barrier produced. Conduct testing on panels within the first 30,000 SF of production of each lot not exceeding 100,000 SF. For projects that do not exceed 100,000 SF, a minimum of two lots of material will represent the project, each lot representing equivalent square footage. The first set of tests conducted for projects that do not exceed 100,000 SF shall be within the first third of the total square footage of the project. Provide the shipping record of the samples to the laboratory within five days of sampling. Begin testing as soon as practicable after sampling.

Test all materials as fabricated, including any specified finishing.

B.3.2.1 Noise Reduction Coefficient (NRC)

Test noise barrier panels according to ASTM C423, and placed according to ASTM E795, mounting type A, to determine the noise reduction coefficient (NRC) of the material. Submit to the engineer an independent laboratory test report that shows that the noise barrier panels achieve an NRC as specified in B.2.6 for the highway side of the barrier.

B.3.2.2 Long-term Durability

Test all sound absorbing composite concrete and composite concrete components for long-term durability according to ASTM C672 and the following modifications and/or requirements:

B.3.2.2.1 Test Specimens

Three specimens of a full cross section of the composite panel at least 144 square inches in face area will be selected at random from the provided composite panel as defined in B.3. Sample specimens shall be representative of the manufacturer's continuous production operation, as selected and marked by the engineer. Specimens shall be 2D-symmetric and shaped according to the testing laboratory's accommodations.

Prepare the surfaces of the sample specimens for testing as follows. Brush the surfaces of the sample to remove any loose particles. Before testing, submerge the test specimens be submerged in water for a period of 24 hours before testing. Immediately following this, cover the specimens with the sodium chloride solution as stated below.

B.3.2.2.2 Test Procedure

Place samples in a 5 sided water tight container, fully submerged in a solution of sodium chloride (concentration 3% by mass). Maintain 1/4 inch of sodium chloride solution above the top surface of the fully submerged specimen within the container.

Subject the submerged specimens to continuous freeze-thaw cycles as follows:

After each five cycles, remove the salt solution and particles of deteriorated concrete from the slab and collect in a watertight container. The operation is best accomplished by tilting the slab in a funnel approximately 20 inches in diameter and washing the surface of the slab with a 3% sodium chloride solution. Continue this washing until all loose particles are removed from the sample. Strain the solution through a filter and dry the residue at 221 degrees Fahrenheit to a constant mass condition. Cumulatively weigh the residue after each five cycles. The dry residue is defined as the loss of mass. Calculate the loss of mass to the nearest 0.01 pounds per square foot, not including the exposed surface of any core material on the cast or cut edges. Visually rate the surfaces according to 10.1.5 of ASTM C672 including any delamination of the sound absorbing material from the concrete core for composite concrete materials. After each washing of each sample, re-establish the initial submerged condition with a new solution of 3% sodium chloride before continuing with freeze-thaw cycling.

Continue the test until 30 freeze-thaw cycles have been completed.

During the test position and support each specimen to allow free circulation of the test solution under, around, and over test pieces. Support the bottom of the specimens on blocks in a manner to facilitate movement of moisture through and around the test specimens.

B.3.2.2.3 Test Report

Submit to the engineer an independent testing laboratory test report which shows that all solid and composite concrete products meet or exceed the following criteria:

1. After 30 freeze-thaw cycles the test specimens shall not exhibit excessive deterioration in the form of cracks, spalls, aggregate disintegration, delamination or other objectionable features.
2. Compliance with the test requirements is based upon a loss of mass of not more than 0.2 pounds per square foot from the surface after 30 cycles of freezing and thawing.
3. The report shall include the following:
    - 3.1. Name of manufacturer.
    - 3.2. Location of production.
    - 3.3. Production description.
    - 3.4. Date product sample was cast.
    - 3.5. Date testing began.
    - 3.6. Specimen identification.
    - 3.7. 5x7-inch color photographs of the test specimens before and after the 30 cycles of freeze-thaw test showing both sound absorbing faces and at least one representative side view of a cut (not cast) face, and any defects.
    - 3.8. A graph of the cumulative mass loss of each specimen plotted against the number of freeze-thaw cycles for 5, 10, 15, 20, 25, and 30 freeze-thaw cycles.
    - 3.9. Visual rating according to ASTM C672 Section 10.1.5, including report of any delamination of the sound absorbing material from the concrete core for composite concrete components.

B.3.3 Materials Certification - General

Provide certification of compliance or sample fabrications as noted below. All material certifications shall reference the specific facility manufacturing the material and this contract. Certification is required for each lot of material not to exceed 100,000 SF of noise barrier produced and shall include dates of fabrication for the lot being certified. For projects that do not exceed 100,000 SF, a minimum of two lots of material will represent the project, each lot representing equivalent square footage.

B.3.3.1 Color and Surface Texture

Supply and deliver to the engineer a 3 foot x 5 foot minimum test panel for each panel type with the specified pattern and colors. Obtain the engineer's acceptance of the panel's pattern and color before production of the panels required for the contract. The accepted pattern and color test panels shall remain on the project site in a readily accessible location for the duration of the project. The accepted pattern and color sample panels will be the standard for all noise barriers on the project.

Manufacture noise barrier posts of the same materials throughout the project. Shop apply coating and coloring of the post and panels.

Unless otherwise shown and provided for in the plans, wall pattern shall contain textures with relief features of sufficient depth and quantity to be distinguishable at an observation distance of 500-feet. The colors and textures chosen will be within the following parameters; however, at the discretion of the engineer, a single color and/or a single texture may be selected for either side of the noise barrier.

	FREEWAY SIDE	RESIDENTIAL SIDE
Number of colors	2	2
In the proportion of	75:25 (+/- 5%)	75:25 (+/-5%)
Number of textures	2	2
In the proportion of	75:25 (+/- 5%)	75:25 (+/- 5%)

N-40-99, N-40-100, and N-40-103 noise barrier wall panels are to be plain concrete with no stain or paint.

Noise barrier panels on the highway side of N-40-102 are to be plain concrete with no stain or paint.

The final color of the noise barrier panels on the residential side of N-40-102 shall be as shown on the plans and match the Federal Standard color system. Coating and coloring of the panels shall be shop applied.

The final color of the posts for all noise barrier wall structures shall be as shown on the plans and match the Federal Standard color system. Coating and coloring of the posts shall be shop applied.

The engineer will visually inspect panels for color consistency upon arrival at the project. The panels shall have no substantial variation in color from the accepted sample panel submitted for the project. All panels with substantial color variation will be rejected and shall be removed from the project.

B.3.3.2 Structural Steel

Submit to the engineer certification of compliance, including mill certifications and heat numbers, that structural steel conforms to the properties required on the plans and shop drawings, and is galvanized after fabrication by the hot-dip process according to ASTM A123. Galvanize all steel hardware and threaded fasteners, bolts, nuts, and washers according to ASTM A153.

Shop coat all steel galvanized surfaces exposed to view with a department-approved paint system. Clean galvanizing surfaces to be painted according to SSPC-SP1 to remove, chlorides, sulfates zinc salts, oil, dirt, organic matter and other contaminants. Brush Blast clean the surfaces according to SSPC-SP7 to create a slight angular surface profile (1.0 – 1.5 mils suggested) for adhesion. Do not fracture the galvanized finish or remove any dry film thickness during these processes.

After cleaning, provide a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface. The tie coat shall etch the galvanized surface and prepare the surface for the top coat. Apply a top coat matching the finished color specified in B.3.2. Use a pre-approved top coat that is resistant to the effects of the sun, and is suitable for use in a marine environment. Exercise care so as not to damage the painted surfaces during shipment and erection of the noise barriers.

Use one of the qualified paint sources and products given below. An equivalent system may be used with the written approval of the engineer. Supply the engineer with the product data sheets before applying any coating. The product data sheets shall indicate the mixing and thinning directions, the recommended spray nozzles and pressures, the minimum drying time for shop applied coats, and the recommended procedures for coating galvanized bolts, nuts, and washers.

Producer	Coat	Products	Dry Film Minimum Thickness (mils)	Minimum Time Between Coats (hours)
Sherwin Williams Co. (847) 330-1250	Tie	Recoatable Epoxy Primer B67-5 Series/B67V5	2.0 to 4.0	6
	Top	Acrolon 218 HS Polyurethane, B65-650	2.0 to 4.0	NA
Carboline Co. (314) 644-1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Top	Carboline 133 LH	4	NA
Wasser Corp. (253) 850-2967	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA

B.3.3.3 Sound Transmission Loss (TL)

Submit to the engineer certification of compliance that the sound transmission loss of the panel material, when tested according to ASTM Standard E90, achieves a transmission loss as specified in B.2.5.

B.3.3.4 Accelerated Weathering

Submit to the engineer certification of compliance that all coatings on barrier components, with the exception of structural steel and wood components comply with the following requirements when tested according to ASTM Standard G155, G153, or G152 after 2400 hours of exposure on a cement based test specimens:

1. No checking when rated according to ASTM D660.
2. No cracking when rated according to ASTM D661.
3. No blistering when rated according to ASTM D714.
4. No difference in adhesion between the unexposed control sample and an exposed sample when tested according to ASTM D3359, Method A.
5. No chalking less than #7 rating when rated according to ASTM D4214.
6. No color change greater than 5 NBS units when measured according to ASTM D2244, using illuminant D65 and the 1964 10-degree standard observer.

B.3.3.5 Corrosion Resistance (Salt Fog Exposure)

Submit to the engineer certification of compliance that all coated steel components, with the exception of structural steel, has a coating system that has been tested for corrosion resistance according to ASTM B117 and comply with the following requirements:

1. No checking when rated according to ASTM D660.
2. No blistering when rated according to ASTM D714.
3. No loss of adhesion when tested according to ASTM D3359 with no evidence of corrosion along the edges of the samples or along the score lines, or both, or other defects.

B.4 Project Submittal Requirements

Furnish required submittals according to the following:

B.4.1 Pre-Construction Submittals

A minimum of 14 days before beginning any shop or field work, submit the following documents to the engineer conforming to standard spec 105.2 with electronic submittal to the fabrication library under standard spec 105.2.2.

1. Structural and foundation design calculations

   Design calculations shall be on 8 1/2 x 11-inch sheets, neatly bound with a title sheet listing the complete project identification number and sound barrier designation. Structural and foundation calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

2. Detailed design/shop drawings

   Design/shop drawings shall conform to the contract plans and the requirements of these special provisions. The design/shop drawings shall consist of plan and profile sheets, details, explanatory notes, erection diagrams, aesthetic treatments, and other working plans. All dimensions, sizes of material, material information and other information necessary for the complete fabrication and construction of the noise barrier shall be designated on the appropriate sheets. The design/shop drawings shall be drawn to an appropriate scale on reproducible sheets 11 x 17 inches including borders. Each sheet shall carry the complete project identification number and noise barrier designation. Design/shop drawings shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

3. Specifications regarding installation requirements and sequence of construction, including a detailed bill of materials.
4. Detailed color plan of the aesthetic treatments and finishes for the entire noise barrier.
5. Shipping, handling, and storage plan identifying methods or practices to limit post production damage.

Department review does not relieve the contractor from responsibility for errors or omissions on shop drawings.

B.4.2 Pre-Installation Submittals

Supply and deliver to the engineer the sample panel required under Section B.3.3.1 at least 14 calendar days before beginning production and/or installation of job materials. Acceptance of the sample panel will be by: Ken Kiepczynski at (414) 659-3055. If the panel is not acceptable, a second panel shall be produced and submitted for acceptance. Sample panel to be representative of quality for precast panel work after acceptance. Deliver test panels to project's construction field office, for comparison purposes during production of project panels.

B.4.3 Payment Submittals

Submit certifications and test data as required under B.3 for all materials, including trade name of the products along with the name and address of the manufacturers.

B.4.4 Submittal Review

The engineer's review and acceptance of the drawings, calculations, and related material, submitted by the contractor, is for compliance with design intent only, and does not relieve the contractor from responsibility in regard to errors or omissions on said submittals.

The final accepted design documents and/or shop drawings will become a part of the contract. Any substitution of materials or dimensions contemplated by the contractor's submitted documents, different from materials or dimensions shown on the contract plans, shall be made only when approved by the engineer, and in such case, additional costs resulting from such substitution shall be borne by the contractor.

Ordering materials before department acceptance of submittals is at the contractor's risk.

C Construction

C.1 General

Construct the noise barriers at the locations the plans show, according to the contract specifications and design drawings and/or as the engineer directs. Deliver all sound absorbing composite concrete components to the project site as a finished component. A sound absorbing composite concrete system, which has the sound absorbing material glue-laminated or alternately affixed by a secondary adhesion method on the project site, will not be allowed.

Provide a minimum 10 day notice to the engineer of the date that the fabrication of the noise barrier material will begin.

Inspect all materials delivered to the construction site for proper dimensions, honeycombing, cracks, voids, surface defects, consistency in color and texture, and any other damage or imperfections, before installation.

If any part of the noise barrier material fails to comply with any requirements of the contract specification, the component shall either be corrected, permanently marked as unacceptable and be disposed of by the contractor or accepted at a reduced price. The decision will be made by the engineer and is dependent on the severity of the specification deviation.

Erect noise barriers to avoid conflict with any existing facilities or utilities to remain in place. Any damage caused by construction activities shall be repaired by the contractor at no cost to the department.

C.2 Fire Hydrant Location Signs

Attach fire hydrant location signs to the noise barrier at each location the plans show by a method the department's approved drawings show. The signs shall conform and be of the type specified in the department's sign plate book, plate D9-54 and/or D9-54A.

Compensation for furnishing and placing the fire hydrant location signs shall be included in the contract price for Noise Barriers Double-Sided Sound Absorptive and no additional compensation therefore will be allowed.

C.3 Weep Hole Openings

Provide weep hole openings for drainage at the locations and sized as noted on the plan. Install weep holes by drilling through the wall after erection of the noise barrier. Use 6" PVC Schedule 40 pipe sleeve conforming to ASTM D-1785. Epoxy 6" PVC Schedule 40 pipe sleeve into bored weep hole. PVC pipe sleeve shall fit snugly in cored hole through wall. Epoxy PVC pipe sleeve into bored weep hole in noise barrier. Locate and construct weep holes according to the plans and as the engineer directs. Place weep holes at locations the plans show unless the engineer approves adjusting locations to fit field conditions. The engineer will field verify the height and location of the weep hole for positive drainage.

C.4 Name Plates

Provide name plates conforming to the requirements of standard spec 506.2.4. Install one name plate on each noise barrier at the location the plans show. Rigidly attach each plate to the barrier by a means approved by the engineer.

Compensation for furnishing and placing of name plates shall be included in the contract price for Noise Barriers, Double-Sided Sound Absorptive Structure and no additional compensation therefore will be allowed.

C.5 Structure Mounted Noise Barriers

Do not erect noise barriers mounted to bridge or retaining wall structures until after the concrete for bridge decks and parapets or retaining wall moment slabs and parapets have attained their specified 28-day strength.

For noise barriers mounted to moment slabs and parapets on top of MSE retaining walls, erection of the noise barrier is limited to two-thirds the height of the noise barrier acoustical line the plans show before placement of earth fill or pavement over the top of the moment slab as the plans show. Erection of the noise barrier in excess of two-thirds its height to the full height of the noise barrier acoustical line the plans show may not occur until after the earth fill or pavement structure over the top of the moment slab the plans show is complete.

C.6 Construction Tolerances

Install the posts and panels comprising the noise barrier plumb within 1/2 inch in 15-feet. Locate the posts to the line and grades as the plans show to within +/- 3/4 inch. Align horizontal joints of adjacent panels to a vertical tolerance of 1/4 inch. Where vertical adjustments are required for alignment, use a mortar base or steel shims. Galvanize and prime coat steel shims according to B.3.3.2.

D Measurement

The department will measure Noise Barriers Double-Sided Sound Absorptive (Structure #) by the square foot, acceptably completed, as the area the original plans show plus engineer-approved modifications to the plan quantity caused by plan corrections or revisions.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
541.0300.S.0301	Noise Barriers Double-Sided Sound Absorptive N-40-99	SF
541.0300.S.0302	Noise Barriers Double-Sided Sound Absorptive N-40-100	SF
541.0300.S.0303	Noise Barriers Double-Sided Sound Absorptive N-40-102	SF
541.0300.S.0304	Noise Barriers Double-Sided Sound Absorptive N-40-103	SF

Payment is full compensation for providing noise barrier including coloring and aesthetic treatment on panels, preparing the design drawings and calculations, furnishing and delivering sample and test panels, materials testing, furnishing materials test reports and certifications, excavation, preparing the site, constructing foundations, erecting posts and panels, and disposing of waste materials.

stp-541-010 (20210708)

113. Driven Piles Using Pile Dynamic Analyzer.

Where indicated in the structure plans, replace standard spec 550.3.6 with the following:

550.3.6 Driving Capacity

(1) Drive piles to the depths necessary to obtain the required driving capacity per the driving capacity determination method called for in the plans.

(2) Driving capacity will be developed by the engineer, or UPRR engineer if applicable, from Pile Dynamic Analyzer (PDA) testing performed on the designated piles at each substructure unit as shown on the plans. The driving criteria will be given as blows per foot with hammer stroke and minimum penetration of the pile or as directed by the engineer, or UPRR engineer if applicable.

The PDA test piles at each substructure unit are designated on the plans and will be monitored using a PDA. Pile installation for these test piles will be controlled by the PDA testing and the engineer, or UPRR engineer if applicable, per the Pile Dynamic Analyzer (PDA) Testing and Restrike Special Provision within this contract.

For the PDA driving capacity determination method, pile restrikes will be required per the PDA Testing and Restrike Special Provision, or as directed by the engineer, or UPRR engineer if applicable. Accommodate a time delay in the pile driving sequence as defined in the PDA Testing Special Provision to allow the engineer, or UPRR engineer if applicable, time to develop the production pile driving criteria.

(3) If the required driving capacity is not met at the minimum tip elevation, driving shall continue until it is achieved. If the required driving capacity is achieved above the minimum tip elevation, driving shall continue until both the minimum tip elevation and required driving capacity criteria are met. If practical pile refusal is encountered prior to the minimum tip elevation, the engineer, or UPRR engineer if applicable, will determine if driving can be halted.

Where indicated in the structure plans, delete standard spec. 550.3.7.

114. Catch Basins, Manholes, and Inlets.

Supplement standard spec 611.3.1 with the following:

Use a Grade "A" concrete for final adjustment of manhole cover. Provide a butyl rubber gasket or butyl rubber rope for joints of precast reinforced concrete manhole sections. Butyl Rubber gasket joint used for manholes conforms to 8.41.6 of the Standard Specification for Sewer and Water Construction in Wisconsin, latest Edition. Provide non-rocking covers for all drainage structures subject to traffic loading.

Submit shop drawings for all drainage structures. For structures where WisDOT standard detail drawings are not available, provide shop drawings prepared, verified and stamped by a professional engineer currently registered in the State of Wisconsin. Submit one electronic copy of shop drawings in portable document format for engineer’s review two weeks before fabrication. Show clearly on shop drawings information for all pipe connections to the structure. The contractor is responsible for all errors of detailing and fabrication. The omission from the shop drawings of any pipe connection shall not relieve contractor

of the responsibility of providing such materials, even though the shop drawings may have been reviewed and accepted by the engineer.

Supplement standard spec 611.3.2 with the following:

Conform to storm sewer structural concrete collar detail for storm sewer pipes to structure connections as the plans show.

Supplement standard spec 611.3.3 with the following:

Use monolithic concrete shimming as the plan shows for final adjustment of drainage structures located within the concrete pavement, concrete shoulders, concrete curb and gutter and concrete barrier wall.

Supplement standard spec 611.3.7 with the following:

Construct height adjustments of 4-inches or more with concrete grade rings. Never use grade rings less than 2-inches thick.

Replace standard spec 611.5.2 (1) with the following:

Payment for Catch Basins, Manholes, and Inlets bid items is full compensation for providing all submittals; materials, including all masonry, and concrete bricks, for Grade “A” concrete adjustments and monolithic concrete shimming; adjusting rings; conduit and sewer connections, steps, and other fittings; for providing and installing butyl rubber joints; for furnishing backfill, backfilling; all excavating, disposing of surplus material, and for cleaning out and restoring the work site; except that the department will pay for covers, including frames, grates and lids separately.

Cost of non-rocking covers for all drainage structures subject to traffic loading is incidental to new cover on proposed structure or reconstructing/adjusting manholes or inlets on existing structure.

115. Adjusting Manhole Covers, Item 611.8110.

This special provision describes adjusting manhole covers conforming to standard spec 611 as modified in this special provision.

Adjust manhole covers located in pavement areas in two separate operations. Initially, remove designated manhole covers along with sufficient pavement to permit installation of temporary cover plate over the opening. Fill the excavated area with asphaltic pavement mixture, which shall remain in place until contract milling and paving operations permit setting the manhole frames to grade. During the second phase, remove the asphaltic pavement mixture surrounding the manhole plus the temporary cover plate, and set the manhole cover to final grade. The department will measure and pay for the items of asphaltic pavement mixture, temporary cover plate, milling, and paving separately.

Supplement standard spec 611.3.7 with the following:

Set the manhole frames so that they comply with the surface requirements of standard spec 450.3.2.9. At the completion of the paving, a 6-foot straightedge shall be placed over the centerline of each manhole frame parallel to the direction of traffic. A measurement shall be made at each side of the frame. The two measurements shall be averaged. If this average is greater than 5/8 inches, reset the manhole frame to the correct plane and elevation. If this average is 5/8 inches or less but greater than 3/8 inches, the manhole frame shall be allowed to remain in place but shall be paid for at 50 percent of the contract unit price.

If the manhole frame is higher than the adjacent pavement, the two measurements shall be made at each end of the straightedge. These two measurements shall be averaged. The same criteria for acceptance and payment as above, shall apply.

stp-611-005 (20200629)

116. Cover Plates Temporary, Item 611.8120.S.

A Description

This special provision describes providing and removing steel plates to cover and support asphaltic pavement and traffic loading at manholes, inlets and similar structures during milling and paving operations.

B Materials

Provide a 0.25 inch minimum thickness steel plate that extends to the outside edge of the existing masonry.

C (Vacant)

D Measurement

The department will measure Cover Plates Temporary as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
611.8120.S	Cover Plates Temporary	EACH

Payment is full compensation for furnishing, installing, and removing the cover plates.

The steel plates shall become the property of the contractor when no longer needed in the contract work.

stp-611-006 (20151210)

117. Pipe Grates, Item 611.9800.S.

A Description

This special provision describes providing pipe grates on the ends of pipes.

B Materials

Furnish steel conforming to the requirements of standard spec 506.2.2.1. Furnish steel pipe conforming to the requirements of standard spec 506.2.3.6.

Furnish pipe grates galvanized according to ASTM A123.

Furnish angles and brackets galvanized according to ASTM A123.

Furnish required hardware galvanized according to ASTM A153.

C Construction

Repair pipes, rods, angles and brackets on which the galvanized coating has been damaged according to the requirements of AASHTO M36M.

D Measurement

The department will measure Pipe Grates in units of work, where one unit is one grate, completed and accepted.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
611.9800.S	Pipe Grates	EACH

Payment is full compensation for furnishing and installing all materials; and for drilling and connecting grates to pipes.

stp-611-010 (20030820)

118. Salvaged Rail and Guardrail End Treatments.

Do not cut sections of guardrail. Give three days advance notice to engineer and contact person below before starting the Salvaged Rail and Salvaged Guardrail End Treatments work to coordinate pickup arrangements. Contact Kevin Peiffer, WisDOT SE Region Maintenance, at (414) 750-1408 and kevin.peiffer@dot.wi.gov.

119. Fence Safety, Item 616.0700.S.

A Description

This special provision describes providing plastic fence at locations the plans show.

B Materials

Furnish notched conventional metal "T" or "U" shaped fence posts.

Furnish fence fabric meeting the following requirements.

Color:	International orange (UV stabilized)
Roll Height:	4 feet
Mesh Opening:	1 inch min to 3 inch max
Resin/Construction:	High density polyethylene mesh
Tensile Yield:	Avg. 2000 lb per 4 ft. width (ASTM D638)
Ultimate Tensile Strength:	Avg. 3000 lb per 4 ft. width (ASTM D638)
Elongation at Break (%):	Greater than 100% (ASTM D638)
Chemical Resistance:	Inert to most chemicals and acids

C Construction

Drive posts into the ground 12 to 18 inches. Space posts at 7 feet.

Use a minimum of three wire ties to secure the fence at each post. Weave tension wire through the top row of strands to provide a top stringer that prevents sagging.

Overlap two rolls at a post and secure with wire ties.

D Measurement

The department will measure Fence Safety by the linear foot along the base of the fence, center-to-center of posts, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
616.0700.S	Fence Safety	LF

Payment is full compensation for furnishing and installing fence and posts; maintaining the fence and posts in satisfactory condition; and for removing and disposing of fence and posts at project completion.

stp-616-030 (20160607)

120. Silt Fence Heavy Duty, Item 628.1530.S; Silt Fence Heavy Duty Maintenance, Item 628.1535.S.

A Description

This special provision describes furnishing, installing, maintaining, repairing, and removing heavy duty silt fence as the plans show, as directed by the engineer, and as hereinafter described.

B Materials

Provide Silt Fence Heavy Duty consisting of a composite of fence posts, fence fabric, geotextile fabric, sand bags or rock bags, and fasteners to be assembled by the contractor.

Furnish new or salvaged notched conventional metal “T” or “U” shaped fence posts with a length of 8 feet and minimum weight of 1.25 lb/ft.

Furnish new fence fabric, or salvaged fence fabric that is free of rust or other structural defects, conforming to standard spec 616.2.2.1 or 616.2.3.2, or one of the following alternatives:

- Woven wire fence - Standard field fence type, minimum 14-½ gauge wire, maximum mesh spacing of 6 inches, and a height of 4 feet.
- Chain link fence – minimum 12-½ gauge, maximum 2.5-inch diamond pattern, and a height of 4 feet.
- Welded wire fence – minimum 14 gauge, maximum mesh spacing of 4 inches, and a height of 4 feet.

Furnish Geotextile Fabric Type HR according to standard spec 645.2.2.7.

Furnish sand bags according to standard spec 628.2.8 or rock bags according to standard spec 628.2.13.

Furnish wire ties, nylon zip ties, or other engineer approved materials.

C Construction

Complete the installation prior to any ground disturbing activities within the drainage area adjacent to the required location. Construct according to the plan details and as described below.

Install posts with a minimum embedment of two feet and as necessary to provide a stable fence system.

Attach fence fabric to posts with at least three ties on each post (top, middle, bottom).

Attach geotextile fabric to fence fabric and/or posts at a maximum spacing of every two feet along the top and additionally as necessary to prevent displacement or damage by wind and wave actions. Overlap joints in the geotextile fabric by a minimum of 12 inches. Excess geotextile fabric may be cut or draped over the backside of the fence system.

Secure the bottom of the geotextile fabric by either of the following methods:

- For installation in wet conditions, anchor the lower flap of the geotextile fabric to the ground using a continuous line of sand bags or rock bags. The lower flap shall be a minimum width of 1 foot.
- For installation in dry conditions, bury the bottom edge in a trench that is a minimum of 4 inches wide and 6 inches deep. Fold material to fit trench and backfill and compact trench with excavated soil.

Maintain the fence throughout construction and until removal. Repair or replace fence materials as necessary. Remove sediment whenever it accumulates to approximately one-half the original fence height and as directed by the engineer. Remove all sediment prior to final stabilization.

Keep system in place until the site is permanently vegetated and is ordered for removal by the engineer. Clean up and restore the surface after removal.

D Measurement

The department will measure Silt Fence Heavy Duty by the linear foot, acceptably completed, measured along the base of the fence, center-to-center of end post, for each section of fence.

The department will measure Silt Fence Heavy Duty Maintenance by the linear foot, acceptably completed, measured along the base of the fence, end-to-end of the section maintained, for each time a section of fence is cleaned and repaired.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
628.1530.S	Silt Fence Heavy Duty	LF
628.1535.S	Silt Fence Heavy Duty Maintenance	LF

Payment for Silt Fence Heavy Duty is full compensation for erecting fence, including excavating or trenching; posts, geotextile fabric, sand bags or rock bags, backfilling, removal, restoration, and disposal.

Payment for Silt Fence Heavy Duty Maintenance is full compensation for required cleaning and repairing; for removing and disposing sediment or spreading accumulated sediment to form a surface suitable for seeding; and for replacing fence and damages caused by overloading sediment material or ponding water adjacent to fence.

121. Stone Ditch Checks, Item 628.7515.S.

A Description

This special provision describes furnishing, installing, maintaining, and removing stone ditch checks, either temporary or permanent, as the plans show or as the engineer directs.

B Materials

Furnish materials conforming to the requirements for Riprap Extra Light according to standard spec 606.2.1.

C Construction

Place stone ditch checks immediately after shaping of the ditches is completed. Place stone ditch checks perpendicular to the direction of flow. Construct according to the plan details.

During construction, maintain stone ditch checks by removing sediment whenever it accumulates to one half of the original ditch check height. Remove all accumulated sediment prior to final stabilization.

For temporary installations, remove all materials incorporated into the work when directed by the engineer. Restore areas with topsoil, seed, fertilizer, and other erosion control items as directed by the engineer.

D Measurement

The department will measure Stone Ditch Checks by the cubic yard of material, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
628.7515.S	Stone Ditch Checks	CY

Payment is full compensation for excavating, furnishing, placing, and shaping Stone Ditch Checks.

Removal of sediment and removal of temporary stone ditch checks will be paid under the Excavation Common bid item by multiplying the measured removal quantity by a factor of ten.

The department will pay separately for restoration and erosion control items under the appropriate contract bid items.

The department will pay separately for Geotextile Type R fabric.

stp-628-050 (20210708)

122. Soil Stabilizer Type B

Replace standard spec. 628.3.12.3(1) with the following:

(1) Apply soil stabilizer with conventional hydraulic seeding equipment at the manufacturer's recommended rate unless the engineer directs otherwise.

123. Seeding.

Add the following to standard spec spec 630.2.1.5.1.1:

Table 630-3 may be used for the mixtures provided in the table:

TABLE 630-3 (OPTIONAL SEED MIXTURES)

SPECIES COMMON NAME (Acceptable Varieties)	SPECIES BOTANICAL NAME	PURITY minimum %	GERMINATION minimum %	MIXTURE PROPORTIONS (in percent) Two options for each mix type							
				NO.10		NO.20		NO.30		NO.40	
				#1	#2	#1	#2	#1	#2	#1	#2
Kentucky Bluegrass (Low Maintenance)	Poa pratensis	98	85	40	42	6	6	10	13	35	35
* Red Fescue (Creeping)	Festuca rubra	97	85	10	13	5	7	15	15	10	15
Hard Fescue (Improved)	Festuca ovina var. duriuscula	97	85			24	22	25	25	20	20
Tall Fescue (Improved Turf Type)	Festuca arundinacea	98	85			40	40				
Salt Grass (Fult's or Salty)	Puccinella distans	98	85					15	15		
Redtop	Agrostis alba	92	85	5	5						
Perennial Ryegrass	Lolium perenne	96	85	25	30	25	25	25	32	25	30
White Clover	Triflium repens	95	90	10	10						
Chewings Fescue	Festuca rubra var. commutata	98	85	10				10		10	
Sheep's Fescue	Festuca ovina	97	85								

* A blend of fescue type will be permitted to achieve the specified Red Fescue (Creeping) percentage using any of the following varieties as substitutes:

Red Fescue (Creeping)
Hard Fescue (Improved)
Chewings Fescue
Sheep's Fescue

124. Signs Type I and II.

Furnish and install mounting brackets per approved product list for type II signs on overhead sign supports incidental to sign. For type II signs on sign bridges use aluminum vertical support beams noted above incidental to sign.

Supplement standard spec 637.2.4 with the following:

Use stainless steel bolts, washers and nuts for type I and type II signs mounted on sign bridges or type I signs mounted on overhead sign supports. Use clips on every joint for Sign Plate A 4-6 when mounted on a sign bridge or overhead sign support. Inspect installation of clips and assure bolts and nuts are tightened to manufacturers recommended torque values.

Use aluminum vertical sign support beams that have a 5-inch wide flange and weigh 3.7 pounds per foot, if the L-brackets are 4 inches wide then use 4-inch wide flange beams weighing 3.06 pounds per foot. Contractor shall measure the width of the L-brackets on existing structures of determine the width needed for sign support beams.

Use beams a minimum of 6 feet in length or equal to the height of the sign to be supported, whichever is greater. Use U-bolts that are made of stainless steel, 1/2 inch diameter and of the proper size to fit the truss cords of each sign bridge. Install vertical sign support beams on each sign and use new U-bolts to attach each beam to the top and bottom cord of the sign bridge truss.

For type II signs on overhead sign supports follow the approved product list for mounting brackets.

Replace standard spec 637.3.3.2(2) with the following:

(2) Install Type I Signs at the offset stated in the plan, which shall be the clear distance between the edge of mainline pavement right edgeline and the near edge of the sign.

Supplement standard spec 637.3.3.3(3) with the following:

Furnish and install new aluminum vertical sign support beams on each sign and new U-bolts to attach each beam to the top and bottom cord of the sign bridge truss for Type I or Type II Signs and Type I signs on overhead sign supports incidental to sign.

Add the following to standard spec 641.2:

Submit shop drawings for sign bridges and overhead sign supports to SE Region Traffic Operations Engineer, Tom Heydel and Bureau of Structures Design.

SER-637-001 (20170621)

125. No Trespassing Signs UPRR.

A Description

Work under this item consists of fabricating, delivering, and installing two UPRR No Trespassing signs at the locations that the plans show. Perform work according to these special provisions, the plans, and standard spec 637. Refer to UPRR STD DWG 0528 inserted at the end of this special provision

B Materials

Use materials that conform to standard spec 637.2, except as modified by UPRR STD DWG 0528.

C Construction

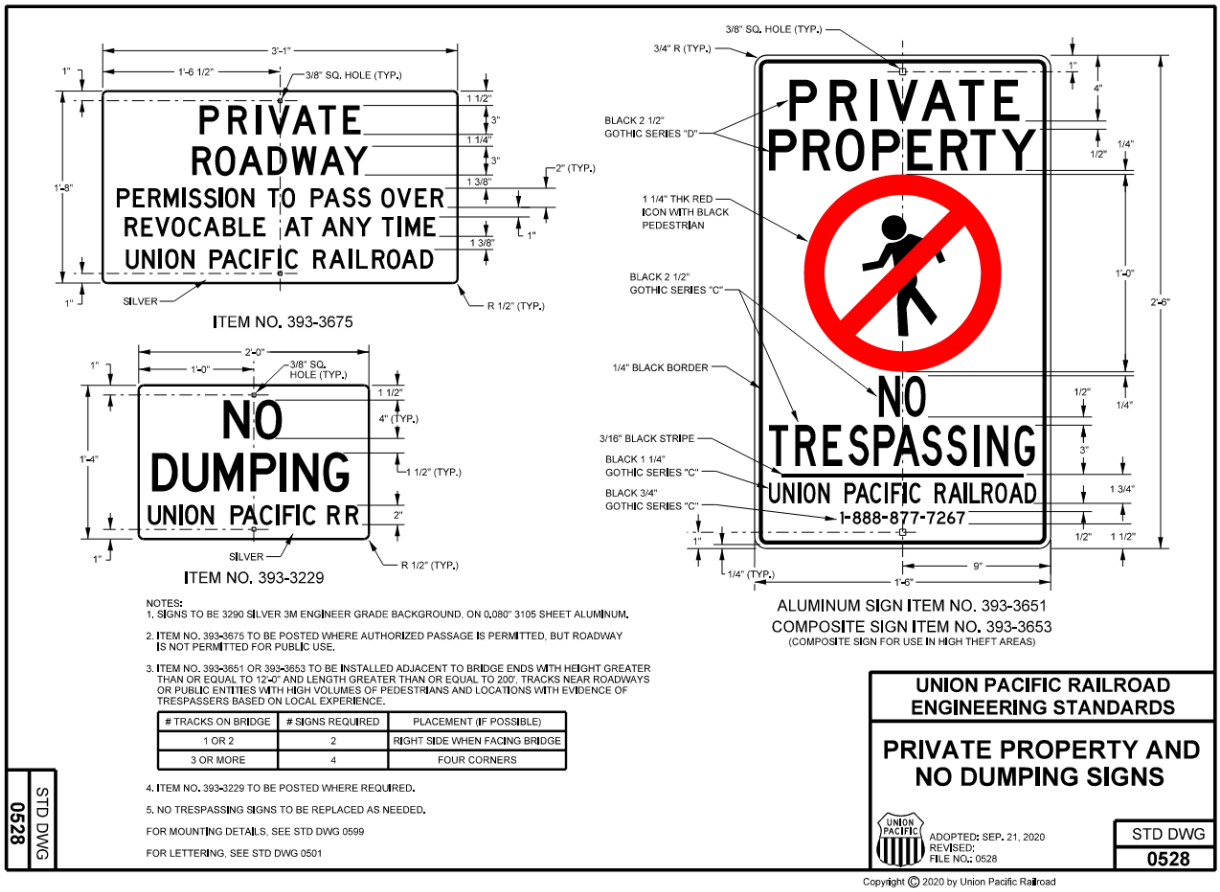
Deliver and install the signs at all locations that the plans show. Install according to standard spec 637.3.

D Measurement

No Trespassing Signs UPRR will not be measured separately for payment and will be considered included in the work for the item Concrete Masonry Bridges.

E Payment

Costs for fabricating, delivering, and installing signs under this special provision are incidental to Concrete Masonry Bridges.



126. Covering Signs.

Replace standard spec 643.2.3.3(2) with the following:

(2) Ensure that covers are flat black, blank, and opaque.

Add the following to standard spec 643.3.4.1 as paragraph four:

(4) If multiple messages on a single sign are required to be covered, minimize the number of holes created by covering the sign with a single rectangular shaped covering. Multiple coverings on a single sign is only permissible where necessary to avoid covering necessary content or as directed by the engineer. Submit sign covering plans to the engineer for single signs requiring multiple coverings 3 days before performing work. Obtain engineer approval before covering signs. Remove sign coverings before placing fixed messages signs unless otherwise directed by the engineer.

sef-643-005 (20180104)

127. Blue Specific Service Signs.

Add the following to standard spec 638.3.4:

Do not remove or move blue specific service signs or their associated posts. Specific service signs are signs with logos that identify commercial entities providing gas, food, lodging, camping, or attractions. A separate contractor, Interstate Logos - Wisconsin, is responsible for these signs. Contact Interstate Logos - Wisconsin at (608) 579-1570 a minimum of 14 calendar days in advance to coordinate removing, moving, or re-installation of these signs.

The contractor is responsible for damage done to these signs due to contractor operations.

128. Foundation Drilling Diameter 36-Inch Diameter, Item 636.0050.S.

A Description

This special provision describes drilling holes for the H pile posts for retaining walls.

B (Vacant)

C Construction

Submit the proposed method for foundation drilling before beginning construction.

Drill holes to the diameter and depth the plans show. If necessary, use casing or alternative engineer-approved methods to maintain an open hole. If bentonite or other slurry is used to maintain an open hole, prevent spillage of the slurry into adjacent waterways. Locate the holes within the following tolerances:

Horizontal Location:	3 inches
Vertical Location:	1 inch
Vertical Alignment:	1/8 inch per foot

D Measurement

The department will measure the Foundation Drilling 36 -Inch Diameter by the linear foot, acceptably completed, measured from the bottom of the hole to the top of the foundation footing.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
636.0050.S	Foundation Drilling 36 -Inch Diameter	LF

Payment is full compensation for drilling holes; for furnishing casing or alternative drilling methods; and, if rock is encountered, for coring rock.

stp-636-010 (20140630)

129. Pond Liner Clay, Item 640.1303.S.

A Description

This special provision describes furnishing and installing clay liner in areas shown on the plans.

B Materials

For each source, prior to excavating and hauling the clay liner to the project, submit the results of the laboratory source screening tests described in Table 1. Laboratory test results of the clay must meet or exceed the requirements before placing material.

Submit source screening test results to the engineer for review, two weeks prior to clay placement.

C Construction

C.1 Clay Liner

C.1.1 Subgrade

Compact the subgrade to the minimum density using standard spec 207.3.6.2 Standard Compaction, or as otherwise specified in the contract requirements.

C.1.2 Erosion Protection

Do not place the clay liner until after all adjacent site grading has been completed and only after silt fence has been installed completely around the area of clay liner placement.

C.1.3 Clay Placement

After the fine grading is complete, place and compact clay liner in compacted 6-inch lifts. Place each lift of clay liner in one continuous lift. See plans for clay liner construction limits. Measure the thickness of the clay, as shown in the plans, perpendicular to the surface.

Notify the engineer at least three days before starting construction of clay liner.

Table 1

Reference	Number	Test Title	Requirements	Testing Frequency	
				Source Screening	Project Testing
AASHTO[1]	T99-01	Moisture –Density Relationships of Soils Using a 2.5-kg (5.5 lb) Rammer a 305 mm (12-in.) Drop (Standard Proctor)	NA	1/source	NA
AASHTO	T-88-00	Particle Size Analysis of Soils	P200[3] $\geq$ 50%	2/source	1/lift
AASHTO	T-89-02	Determining the Liquid Limit of Soils	LL[4] $\geq$ 22%	2/source	1/lift
AASHTO	T-90-00	Determining the Plastic Limit and Plasticity Index of Soils	PI[5] $\geq$ 12%	2/source	1/lift
AASHTO	T310-03	In-Place Density and Moisture Content of Soils and Soil-Aggregates by nuclear Methods (Shallow Depth)	DD[6] $\geq$ 95% of the MDD[7]	NA	100'x100' Grid/lift
ASTM[2]	D5084-03	Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter	K[8] $\leq 1 \times 10^{-7}$ cm/sec	1/source[9]	1/site[10]

Notes:

1. AASHTO = American Association of State Highway and Transportation Officials
2. ASTM = American Society of Testing and Materials
3. P200 = Percent by weight passing the #200 sieve (%)
4. LL = Liquid Limit (%)
5. PI = Plasticity Index (%)
6. DD = Dry Density (pcf)
7. MDD = Maximum Dry Density (pcf) as determined by the Standard Proctor Test
8. K = Hydraulic Conductivity (cm/sec)
9. The sample for the test shall be remolded at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test.
10. An undisturbed sample from a thinned walled sampler (Shelby tube)

Compact the clay liner to a minimum of 95% Standard Proctor AASHTO T-99 Maximum Dry Density with footed compaction equipment having feet at least as long as the loose lift height. As needed, clay shall be disked or otherwise mechanically processed before compaction to break up clods and allow moisture content adjustment. Clod size shall be no greater than 4 inches. All compaction equipment utilized shall have a minimum static weight of 30,000 pounds.

Provide all equipment necessary to adjust clay liner to the proper moisture content for compaction.

Make sufficient number of passes of the compaction equipment over each lift of clay to ensure complete remolding of the clay.

Do not proceed with placement of additional lifts until all required clay liner testing and documentation has been completed for the previous lift.

During placement of the clay liner the minimum moisture content shall be as defined by the testing performed in the source screening evaluation and with the following limits:

- No drier than the optimum moisture content as determined by the Standard Proctor test.

If the in-place clay liner fails to meet the requirements of Table 1, then remove and replace or rework any portion of the clay liner not meeting the project requirements until project specifications are met. There shall be no compensation for removing, replacing and reworking clay not meeting the requirements in Table 1.

C.1.4 Project Testing and Acceptance

Perform all project testing at the frequency shown in Table 1 except for project testing for ASTM D5084-03 Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter, which will be done by the department. Record clay liner thickness on a 100 foot x 100 foot grid pattern.

Provide the following:

- Access for on-site testing, inspection, and documentation.
- Machinery required to grade/blade density test locations.
- Machinery required to collect undisturbed clay samples (i.e., with Shelby tubes).
- Replace and recompact clay material removed for testing purposes.

Perform sampling, testing, and documentation for project testing in Table 1, required under this provision using HTCP certified technicians. Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at each grading site during all clay liner placement, compaction, and sampling/testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

If an Assistant Certified Technician (ACT) is performing sampling or testing, a certified technician must coordinate and take responsibility for the work an ACT performs. Have a certified technician ensure that all sampling and testing is performed correctly, analyze test results, and post resulting data. No more than one ACT can work under a single certified technician.

Perform all project testing with a department approved laboratory.

C.1.5 Department Testing

The department will perform the project testing for ASTM D5084-03 Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter.

D Measurement

The department will measure Pond Liner Clay in volume by the cubic yards, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
640.1303.S	Pond Liner Clay	CY

Payment is full compensation for dewatering areas of site where the clay liner is to be placed; for furnishing, placing and compacting the clay liner; and for performing all tests.

stp-640-016 (20210113)

130. Traffic Control.

Supplement standard spec 643.3.1 with the following:

Provide the Wisconsin State Patrol, Milwaukee County Highway Maintenance, Ozaukee County Highway Maintenance, and the engineer a current telephone number with which the contractor or his representative can be contacted during non-working hours in the event a safety hazard develops.

Do not park or store equipment, contractor's and personal vehicles or construction materials within the clear zone or on any roadway carrying traffic during working and non-working hours except at locations and periods of time approved by the engineer.

Do not permit construction or personnel equipment or vehicles to directly cross the live traffic lanes of the freeway. Yield to all through traffic at all locations. Equip all vehicles or equipment operating in the live traffic lanes with a hazard identification beam (flashing yellow signal light) that is visible from 360 degrees. Operate the flashing yellow beam only when merging or exiting live traffic lanes or when parked or operating on shoulders, except when parked behind barrier wall. Do not park personal vehicles within the access control limits of the freeway. Do not cross live freeway traffic lanes of with equipment or vehicles.

Obtain prior approval from the engineer for the locations of egress or ingress for construction vehicles to prosecute the work.

Do not disturb, remove or obliterate any traffic control signs, advisory signs, sand barrel array, shoulder delineators or beam guard in place along the traveled roadways without the approval of the engineer.

Flagging operations shall follow standard spec 104.6.1.(4) and chapter 6E of the WMUTCD.

Local Road closures and mainline shoulder closures are incidental to standard bid item 643.5000 – Traffic Control.

Replace standard spec 643.3.1.(7) with the following:

Provide equipment, forces, and materials to promptly restore any traffic control devices or pavement markings damaged or disturbed within two hours of being contacted.

SER-643-001 (20170808)

131. Nighttime Work Lighting-Stationary.

A Description

This special provision describes furnishing portable lighting as necessary to complete nighttime work. Nighttime operations consist of work specifically scheduled to occur after sunset and before sunrise.

B (Vacant)

C Construction

C.1 General

This provision shall apply when providing, maintaining, moving, and removing portable light towers and equipment-mounted lighting fixtures for nighttime stationary work operations, for the duration of nighttime work on the contract.

At least 14 days before the nighttime work, furnish a lighting plan to the engineer for review and acceptance. Address the following in the plan:

1. Layout, including location of portable lighting – lateral placement, height, and spacing. Clearly show on the layout the location of all lights necessary for every aspect of work to be done at night.
2. Specifications, brochures, and technical data of all lighting equipment to be used.
3. The details on how the luminaires will be attached.
4. Electrical power source information.
5. Details on the louvers, shields, or methods to be employed to reduce glare.
6. Lighting calculations. Provide illumination with average to minimum uniformity ratio of 5:1 or less throughout the work area.
7. Detail information on any other auxiliary equipment.

C.2 Portable Lighting

Provide portable lighting that is sturdy and free standing and does not require any guy wires, braces, or any other attachments. Furnish portable lighting capable of being moved as necessary to keep up with the construction project. Position the portable lighting and trailers to minimize the risk of being impacted by traffic on the roadway or by construction traffic or equipment. Provide lightning protection for the portable lighting. Portable lighting shall withstand up to 60 mph wind velocity.

If portable generators are used as a power source, furnish adequate power to operate all required lighting equipment without any interruption during the nighttime work. Provide wiring that is weatherproof and installed according to local, state, federal (NECA and OSHA) requirements. Equip all power sources with a ground-fault circuit interrupter to prevent electrical shock.

C.3 Light Level and Uniformity

Position (spacing and mounting height) the luminaires to provide illumination with an average to minimum uniformity ratio of 5:1 or less throughout the work area.

Illuminate the area as necessary to incorporate construction vehicles, equipment, and personnel activities.

C.4 Glare Control

Design, install, and operate all lighting supplied under these specifications to minimize or avoid glare that interferes with all traffic on the roadway or that causes annoyance or discomfort for properties adjoining the roadway. Locate, aim, and adjust the luminaires to provide the adequate level of illumination and the specified uniformity in the work area without the creation of objectionable glare.

Provide louvers, shields, or visors, as needed, to reduce any objectionable levels of glare. As a minimum, ensure the following requirements are met to avoid objectionable glare on the roadways open to traffic in either direction or for adjoining properties:

1. Aim tower-mounted luminaires, either parallel or perpendicular to the roadway, so as to minimize light aimed toward approaching traffic.
2. Aim all luminaires such that the center of beam axis is no greater than 60 degrees above vertical (straight down).

If lighting does not meet above-mentioned criteria, adjust the lighting within 24 hours.

C.5 Continuous Operation

Provide and have available sufficient fuel, spare lamps, generators, and qualified personnel to ensure that the lights will operate continuously during nighttime operation. In the event of any failure of the lighting system, discontinue the operation until the adequate level of illumination is restored. Move and remove lighting as necessary.

D (Vacant)

E Payment

Costs for furnishing a lighting plan, and for providing, maintaining, moving, and removing portable lighting, tower mounted lighting, and equipment-mounted lighting required under this special provision are incidental to the contract.

stp-643-010 (20100709)

132. Truck or Trailer-Mounted Attenuator, Item 643.1055.S.

A Description

This special provision describes protecting work operations with a truck or trailer-mounted attenuator (TMA).

B Materials

Furnish and maintain a TMA conforming to NCHRP Report 350 test level 3 or to MASH crashworthiness criteria. Submit written certification from the manufacturer that the host vehicle/attenuator configuration provided conforms to crashworthiness criteria. Include the federal-aid reimbursement eligibility letter with that submittal.

Provide a host vehicle and mount the attenuator conforming to the attenuator manufacturer's specifications. Provide the engineer a copy of the manufacturer’s specifications and installation instructions.

C Construction

Coordinate with the engineer at least 72 hours before its intended use so the engineer can determine if the work operation requires TMA protection.

Position the attenuator at a manufacturer-recommended location in advance of a stationary work operation. Position and maintain the attenuator consistently at the manufacturer-recommended distance from a mobile work operation. Ensure that an operator stays with the host vehicle while protecting a mobile work operation.

D Measurement

The department will measure Truck or Truck-Trailer-Mounted Attenuator by the day, acceptably completed, measured to the 1/2-day based on the engineer-determined time the attenuator is required to protect work operations. The department will measure 4 or less hours per calendar day as a half day and over 4 hours as a full day.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
643.1055.S	Truck or Trailer-Mounted Attenuator	DAY

Payment is full compensation for providing the portable attenuator, host vehicle, and operator.

stp-643-015 (20140630)

133. Basic Traffic Queue Warning System, Item 643.1205.S.

A Description

This special provision describes providing, repositioning, operating, maintaining, monitoring, calibrating, testing and removing a basic traffic queue warning system (QWS) capable of measuring vehicular speeds at downstream sections of a roadway, and activating the system.

B Materials

Provide Basic Traffic QWS components and software that is National Transportation Communications for ITS Protocol (NCTIP) compliant.

B.1 Portable Traffic Sensors (PTS)

Provide PTS that are nonintrusive and capable of capturing vehicle speed in mph. Integrate each sensor with a modem to communicate with the automated system manager.

B.2 Static Traffic Control Signs with Temporary Flashing Beacon Signs (FBS)

Provide static traffic control signs with temporary flashing beacon signs conforming to standard spec 658.2(2) for Traffic Signal Faces. Ensure each FBS is integrated with a modem, and other equipment (e.g., automated system manager) mounted on it, and acts as a single device for communicating with similarly integrated devices and displaying real-time traffic conditions.

B.3 Automated System Manager (ASM)

Provide an ASM that assesses current traffic data captured by the PTS and activates/deactivates the FBS based on predetermined speed thresholds.

B.4 System Communications

Ensure Basic Traffic QWS communications meet the following requirements:

1. Perform required configuration of the Basic Traffic QWS's communication system automatically during system initialization.
2. Communication between the server and any individual FBS or PTS are independent through the full range of deployed locations, and do not rely upon communications with any other FBS or PTS.
3. Incorporate an error detection/correction mechanism into the Basic Traffic QWS communication system to ensure the integrity of all traffic condition data.

B.5 System Acceptance

Submit vendor verification to the engineer and Bureau of Traffic Operations (DOTBTOworkzone@dot.wi.gov) 14 calendar days before the pre-construction meeting that the system will adequately perform the functions specified in this special provision. Adequate verification includes past successful performance of the system, literature and references from successful use of the system by other agencies, and/or demonstration of the system.

Provide contact information for a designated representative responsible for monitoring the performance of the system and for making modifications to the operational settings as the engineer directs. Provide all testing and calibration equipment.

C Construction

C.1 General

Install and reposition Basic Traffic Queue Warning System per plan or as the engineer directs. Provide plan to the engineer and Bureau of Traffic Operations (DOTBTOworkzone@dot.wi.gov) 14 calendar days before the pre-construction meeting.

PTS may be mounted on FBS, arrow board or other trailer devices.

Install PTS at the following locations:

1. Place first PTS within the lane closure taper.
2. Place second PTS 5,700 feet upstream of the lane closure taper or on FBS #3.
3. Place third PTS 2 miles upstream of the lane closure taper or on FBS #2.

Install FBS at the following locations, delineated by 5 drums:

1. Place first FBS (FBS #3) 5,700 feet upstream of the lane closure taper.
2. Place second FBS (FBS #2) 2 miles upstream of the lane closure taper.
3. Place third FBS (FBS #1) 3 miles upstream of the lane closure taper.

If there are more than two lanes or specified in the plans, place FBS on both sides of the roadway.

Number the devices in chronological order so they are visible from the shoulder with 6-inch white high reflective sheeting.

Provide technical personnel for all system calibration, operation, maintenance, and timely on-call support services.

Promptly correct the system within 24 hours of becoming aware of a deficiency in the operation or individual part of the system. A minimum of three days before deployment, place the Basic Traffic QWS and demonstrate to the department that the Basic Traffic QWS is operational.

Maintain the Basic Traffic QWS for the duration of the project. Ensure the system operates continuously (24 hours, 7 days a week) in the automated mode throughout the duration of the project.

Remove the system upon completion.

C.2 Reports

Provide an electronic copy of a weekly summary report of all data via email to the engineer. Ensure the report includes, at a minimum, the average speed per sensor, time in congestive state per sensor and number of triggers per day.

C.3 Meetings

Attend mandatory in-person pre-construction meetings with the department. Attend additional meetings as deemed necessary by the department. These meetings may be held in person or via teleconference, as scheduled by the department.

C.4 Programming

C.4.1 General

Program the Basic Traffic QWS to ensure that the following general operations are performed:

1. Provide a password protected login to the ASM, website and all other databases.
2. Automatic setting of the FBS to reflect current traffic flow status updated every 60 seconds for congestion. Ensure to remove a congestion message when 180 seconds of average traffic speeds above the current level are observed, or utilize a customized frequency as determined by the engineer.
3. The FBS activate based on pre-determined speed thresholds from the next downstream sensor.
    - FBS #3 shall activate based on traffic speeds at the PTS located within the lane closure taper.
    - FBS #2 shall activate based on traffic speeds at the PTS located approximately 1 mile upstream of lane closure taper, or at FBS #3.
    - FBS #1 shall activate based on traffic speeds at the PTS located 2 miles upstream of lane closure taper, or at FBS #2.

4. Provide real-time data from the ASM to a website with a full color mapping feature and refresh every 60 seconds. Make data on website available to the department staff at all times for the duration of the work zone activity. Ensure website includes:
    - Vehicle speeds
    - FBS triggers
    - Device locations
5. Archive all traffic data in a Microsoft Excel format with date and time stamps.
6. Configure the website to quantify system failures which includes communication disruption between any devices in the system configuration, FBS malfunctioning, PTS malfunction, loss of power, low battery, etc.
7. Automatically generate and send an email alert any time a user specified queue is detected by the system.
8. Ensure the system autonomously restarts in case of any power failure.

C.4.2 System Operation Strategy

Arrange for the vendor/manufacturer to coordinate system operation, detection, and trends/thresholds with the engineer.

The sequences below are a minimum requirement, but can be adjusted at the discretion of the engineer, are as follows:

Free Flow:

If the current PTS speed on a downstream section is at or above 40 mph, the next upstream FBS will not flash.

Slow or Stopped Traffic:

If the current PTS speed on a downstream section of the roadway is between the 39 mph and 0 mph (for example, 35 mph), the next upstream FBS shall flash.

C.5 Calibration and Testing

At the beginning of the project perform a successful field test and calibration at the Basic Traffic QWS location to verify the system is detecting accurate vehicle speeds, and accurately relaying the information to the ASM and the FBS.

Send email of successful calibration and testing to the engineer.

D Measurement

The department will measure Basic Traffic Queue Warning System by the day, acceptably completed, measured as each complete system per roadway.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
643.1205.S	Basic Traffic Queue Warning System	DAY

Payment is full compensation for providing, repositioning, operating, maintaining, monitoring, calibrating, testing, and removing the complete system consisting of FBS, PTS, ASM, and system communications.

Failure to correct a deficiency to the FBS, PTS, or ASM within 24 hours after notification from the engineer or the department will result in a one-day deduction of the measured quantity for each day in which the deficiency is not corrected.

Failure to correct the website within 24 hours after notification from the engineer will result in a 10% reduction of the day quantity for each day the website is down.

The engineer will have sole discretion to assess the deductions for an improperly working Basic Traffic QWS.

stp-643-046 (20210113)

134. Traffic Control Interim Lane Closure, Item 643.4100.S.

A Description

This special provision describes closing a freeway/expressway traffic lane.

B (Vacant)

C Construction

Install and reposition traffic control devices as required to close a traffic lane. Remove and return the devices to their previous configuration when the closure is no longer required.

D Measurement

The department will measure Traffic Control Interim Lane Closure as each individual reposition/return cycle, acceptably completed. The department will not measure additional moves or configuration changes as might be required solely to accommodate the contractor's operations.

The department will measure the closures by traffic lane and roadway. The department will not measure multiple closures in the same traffic lane on a project.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
643.4100.S	Traffic Control Interim Lane Closure	EACH

Payment is full compensation for closing and re-opening the affected traffic lane.

stp-643-030 (20170615)

135. Temporary Pavement Marking

Add the following to standard spec 649.3:

(9) On pavements not scheduled for removal under this project, remove markings using air blasting, water blasting, or a combination of thereof. Do not use grinding on these pavements.

136. General Requirements for Electrical Work.

General

Add the following to standard spec 651, 652, 653, 654, 655, 656, 657 and 659.

All the work necessary to comply with revisions to standards specifications mentioned herewith shall be incidental to associated pay items or to the project including coordination, materials, and labor. No additional payment shall be made to the contractor.

Add the following to standard spec 651.2:

Wisconsin Department of Transportation

Materials indicated to be returned to the department shall be hauled to one of the following two locations:

1. State Electrical Shop at 935 South 60th Street, West Allis, as directed by Mr. Pat Stoetzel, tel. (414) 750-5306

Arrange pickups and deliveries 3 days in advance and during regular business hours (Monday – Thursday 7:00 AM to 3:45 PM).

Add the following to standard spec 651.3.1:

Any circuit that the contractor does not personally tag out at the disconnect shall be considered live and will be subject to being activated by another person with no notice to the contractor. Make tagouts with manufactured tags and endorse them with the date and the name of the contractor. Clear tagouts at the end of the workday. The department does not employ a load dispatcher and has no intent to do so. Each electrical worker is responsible for their own protection from automatic switching and from switching by others.

The plans show required disconnections of existing lighting circuits, most in the form of abandoning existing underground conductors in place. The contractor may need to mobilize several times per each existing lighting distribution center. The contractor is expected to build these costs into the various paid items for removals and installations.

Replace standard spec 651.3.3(3) with the following:

(3) Request a signal inspection of the completed signal installation to the project engineer at least five working days prior to the time of the requested inspection. Notify the department's Electrical Field Unit at (414) 266-1170 to coordinate the inspections of IH 43 Ramps & Good Hope Rd, IH 43 SB Ramps & STH 100/Brown Deer Rd, IH 43 NB Ramps & STH 100/Brown Deer Rd, STH 32/Brown Deer Rd & CTH W/Port Washington Rd, and STH 57/Green Bay Rd & Range Line Rd. The department's Region Electrical personnel will perform the inspection. In the event of deficiencies, request a re-inspection when the work is corrected. The engineer will not authorize turn-on until the contractor corrects all deficiencies.

Request a signal inspection of the completed signal installation to the project engineer at least five working days prior to the time of the requested inspection. Notify the City of Glendale Public Works Department at (414) 228-1710 to coordinate the inspections of Port Washington Rd & W Bender Rd/W Devon St and Port Washington Rd & Clovernook Ln. The City's personnel will perform the inspection. In the event of deficiencies, request a re-inspection when the work is corrected. The engineer will not authorize turn-on until the contractor corrects all deficiencies.

Request a signal inspection of the completed signal installation to the project engineer at least five working days prior to the time of the requested inspection. Notify Daniel Murphy, Daniel.Murphy@milwaukeecountywi.gov to coordinate the inspections of Good Hope Rd & Port Washington Rd. The County's personnel will perform the inspection. In the event of deficiencies, request a re-inspection when the work is corrected. The engineer will not authorize turn-on until the contractor corrects all deficiencies.

Add the following to standard spec 651.5:

Work to disconnect and connect conductors will be incidental to the paid measurement of footage.

There will be no measurement for payment for abandoning conductors or removing conductors for scrap.

Work to disconnect and connect electrical system, splice through, or to connect conductors are incidental to the installation or removal of the freeway lighting pay items included in this contract. The department will not measure conductors or conduits that have been abandoned in place or removed for scrap. The department will allow, at the contractor's discretion, for the salvaging of conductors to be abandoned, if possible.

Add the following to standard spec 652.3.1.4:

Support conductors at the top of the vertical raceway or as close as practical if the vertical rise exceeds 40-feet. Provide additional supports as shown; in no case shall the distance between supports exceed that shown in Table 300.19(A) of the Wisconsin State Electric Code.

Add the following to standard spec 653.3(1):

This provision modifies the standard detail drawing for pull boxes and thereby both the standard items and SPV pay item for pull boxes. Lighting pull box covers shall read "LIGHTING".

Add the following to standard spec 655.3.1:

Wet location splices are not anticipated on this project and not shown in the plans. In the event that the engineer allows wet location splices, make pull box splices with engineer approved epoxy kit for the freeway lighting and should be incidental to the installation of pull box.

At each pull point or access point, indicate the line side bundle with a lap of blue tape. Conductors in poles and in pull boxes or other terminations shall be marked with a 6-Inch long blue tape wrap to identify the set of conductors emanating from distribution center (feeder).

Add the following to standard spec 655.3.7(4):

Where two or more wire networks pass through a pull point, tag each circuit network (i.e., A/B/N and C/D/N) with approved all-weather tags.

Append standard spec 656.2.3 with the following:

(8) The engineer will not grant turn on approval until the contractor corrects all discrepancies. The permanent traffic signal at the intersection of STH 57/Green Bay Rd & Range Line Rd shall be in flash for 3 working days (excluding Holidays, Saturday and Sunday) prior to the implementation of the first timing plan. The mainline (STH 57/Green Bay Rd) will be flashing yellow and Range Line Rd will be flashing red. The DOT signal engineer, (414) 750-2605, shall determine the turn on and turn off date and time. The operation shall coincide with the permanent traffic signal plans. Coordinate with the DOT electrical field unit at (414) 266-1170 in scheduling a turn on date.

(9) The engineer will not grant turn on approval until the contractor corrects all discrepancies. The temporary traffic signal at the intersections of IH 43 SB Ramps & STH 100/Brown Deer Rd and IH 43 NB Ramps & STH 100/Brown Deer Rd shall be in flash for 3 working days (excluding Holidays, Saturday and Sunday) prior to the implementation of the first timing plan. The mainline (STH 100/Brown Deer Rd) will be flashing yellow and the left turns and IH 43 Ramps will be flashing red. The DOT signal engineer, (414) 750-2605, shall determine the turn on and turn off date and time. The operation of the temporary traffic signal at IH 43 SB Ramps & STH 100/Brown Deer Rd shall coincide with Stages 1A, 1B, 4A and 4B. The operation of the temporary traffic signal at IH 43 NB Ramps & STH 100/Brown Deer Rd shall coincide with Stages 2 and 4B. Coordinate with the DOT electrical field unit at (414) 266-1170 in scheduling a turn on date.

Add the following to standard spec 657.2:

Non-breakaway poles (mounted on structures, concrete bases or behind noise wall barriers without transformer base), as well as at stems of sign bridges containing electrical wires are to be double nutted and contractor shall install galvanized rat screen enclosing the bottom of pole area; extra nuts and screen incidental.

Add the following to standard spec 657.3.1and 657.3.5:

Corrosion protection measures described in standard spec 657.3.1 and 657.3.5 are invoked for breakaway transformer bases and aluminum light poles. The contractor shall avoid contact of dissimilar metals in erecting the pole on its foundation and/or breakaway device. Any concern of trapped moisture or potential corrosion cell shall be resolved to the satisfaction of the engineer.

Manufacturer's Warranty for LED luminaires: The manufacturer shall warrant to the department that each complete luminaire (consisting of the housing, optical assembly, LED drivers, surge protection and wiring) will be free from defects in material and workmanship for 10 years from the date that the luminaire are put into service. Luminaires shall be installed within one year of manufacture.

If any luminaires fail to meet the above warranty, the department shall provide the manufacturer with a written notice of any defect within 30 days after discovery of the defect. The manufacturer shall provide all materials, luminaires, replacement component parts, labor and all incidentals necessary to restore the luminaire to a fully operational, installed condition.

Submittal Requirements for LED luminaires: Considering the rapid advancement in LED technology, the overall project construction and duration of construction, within 10 calendar days after contract execution, the contractor is responsible to coordinate the lead time for LED luminaires purchase and installation schedule with the engineer and the department's Lighting Engineer, Eric Perea, at eric.perea@dot.wi.gov or at (414) 750-0935 for freeway lighting system prior to order LED luminaires. The LED luminaires purchasing may be done during later stage of construction as directed by the department which shall not delay the construction.

Add the following to standard spec 659.3:

Provide and install / replace Plaques Light Pole on all poles located in the median at a mounting height of 6-inch above the highest adjacent safety barrier or obstruction.

Add the following to standard spec 659.3.1:

Contractor shall be responsible to provide adequate temporary roadway lighting during all the construction stages not shown on the temporary lighting plans, but which are necessitated by field conditions or by any construction phasing changes. Installation of temporary lighting not shown on temporary lighting plans shall be paid according to appropriate pay items included in this contract.

Contractor shall be responsible to submit a redline markup plans for any additional temporary lighting to the engineer for approval prior to installation.

137. Install Conduit Into Existing Item, Item 652.0700.S.

A Description

This special provision describes installing proposed conduit into an existing manhole, pull box, junction box, communication vault, or other structure.

B Materials

Use 2-inch and 3-inch conduits, as provided and paid for under other items in this contract. Furnish backfill material, topsoil, fertilizer, seed, and mulch conforming to the standard spec.

C Construction

Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole for entering conduits at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

D Measurement

The department will measure Install Conduit Into Existing System by the unit, acceptably installed. Up to five conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of five, or conduits entering at significantly different entry points into the existing pull box, manhole, or junction box will constitute multiple units of payment.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
652.0700.S	Install Conduit Into Existing Item	EACH

Payment is full compensation for excavating, drilling holes; furnishing and installing all materials, including bricks, coarse aggregate, sand, bedding, and backfill; for excavating and backfilling; and for furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; and for making inspections.

stp-652-070 (20100709)

138. Electrical Conduit.

Replace standard spec 652.5(2) with the following:

(2)Payment for Conduit Rigid Metallic, Conduit Rigid Nonmetallic, and Conduit Special bid items is full compensation for providing the conduit, conduit bodies, and fittings; for providing all conduit hangers, clips, attachments, and fittings used to support conduit on structures; for pull wires or ropes; for expansion fittings and caps; for making necessary connections into existing pull box, manhole, junction box or communication vault; for excavating, bedding, and backfilling, including any sand, concrete, or other required materials; for disposing of surplus materials; and for making inspections.

Replace standard spec 652.5(5) with the following:

(5)Payment for Conduit Loop Detector is full compensation for providing all materials, including conduit, compacted backfill, surface sealer if required, pull wire if required, condulets, conduit fittings, and for making necessary connections into existing pull box, manhole, junction box or communication vault.

139. Electrical Service Meter Breaker Pedestal Port Washington Rd & W Bender Rd/W Devon St, Item 656.0200.3201; Electrical Service Meter Breaker Pedestal Port Washington Rd & Clovernook Ln, Item 656.0200.3202; Electrical Service Meter Breaker Pedestal IH 43 Ramps & Good Hope Rd, Item 656.0200.3301; Electrical Service Meter Breaker Pedestal Good Hope Rd & Port Washington Rd, Item 656.0200.3302; Electrical Service Meter Breaker Pedestal IH 43 SB Ramps & STH 100/Brown Deer Rd, Item 656.0200.3303; Electrical Service Meter Breaker Pedestal IH 43 NB Ramps & STH 100/Brown Deer Rd, Item 656.0200.3304; Electrical Service Meter Breaker Pedestal STH 32/Brown Deer Rd & CTH W/Port Washington Rd, Item 656.0200.3305; Electrical Service Meter Breaker Pedestal STH 57/Green Bay Rd & Range Line Rd, Item 656.0200.3501.

Append standard spec 656.2.3 with the following:

(2) The department will be responsible for the electrical service installation request for any department maintained facility. The contractor will be responsible for the electrical service installation request for the City of Glendale and Milwaukee County signals.

(3) Electrical utility company service installation and energy cost will be billed to and paid for by the maintaining authority.

(4) Install the cabinet base and meter breaker pedestal first, so the electrical utility company can install the service lateral. Install a 3” conduit from the point of service from the utility to the meter breaker pedestal. Finish grade the service trench, replace topsoil that is lost or contaminated with other materials, fertilize, seed, and mulch all areas that are disturbed by the electrical utility company.

Append standard spec 656.5 with the following:

(8) Payment is full compensation for grading the service trench; replacing topsoil; and for fertilizing, seeding, and mulching to restore the disturbed area of the service trench.

140. Signal Housings.

Replace standard spec 658.2(4) with the following:

(4) For pedestrian signal faces: furnish polycarbonate resin housings, doors, and visors. Use yellow, Federal Standard 595 - FS13538, housings and dull black door faces and visors. For 16-inch heads, mount a z-crate visor and gasket to the door with stainless steel tabs. Drill the housing for top and bottom pipe mounting with the ability to rotate 270 degrees on the poly mounting brackets.

141. Pedestrian Push Buttons.

Replace standard spec 658.2(5) with the following:

(5) For pedestrian push buttons: furnish freeze-proof ADA compliant pedestrian push buttons made by a department-approved manufacturer. The contractor shall place a Size 1, Type H reflective (R10-3EL, R, D, R10-4) sign sticker (per state sign plate), message series – B directly above each push button. Include a directional arrow or arrows on the sign as the plans show.

142. Traffic Signal Faces & Pedestrian Signal Face 16-Inch.

Append standard spec 658.3(5) with the following:

(5) Connect all ungrounded conductors with wire nuts in the appropriate sections of the signal heads. Be certain to twist wires prior to installing the wire nuts. All wire nuts must be installed facing up to prevent the entrance of water.

143. Lamp, Ballast, LED, Switch Disposal by Contractor, Item 659.5000.S.

A Description

This special provision describes the packaging of lamps, ballasts, LEDs, and mercury containing switches (e.g., overhead roadway lighting, underdeck bridge, wall packs, pedestrian signals, traffic control stop lights and warning flashers, fluorescent bulbs, and thermostats) removed under this contract for disposal as hazardous materials.

For Lamp, Ballast, LED, Switch Disposal by Contractor, coordinate removal by the department's hazardous waste disposal vendor.

B Materials

B.1 Disposal by Contractor

Items removed under this contract will be considered the property of the department for waste generator identification. The contractor is responsible for coordinating with the department's hazardous waste vendor for disposal:

https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/environment/hazwaste-contacts.pdf

C Construction

Provide a secure, level location removed from the travelled way for storage of the material for disposal.

Pack intact fixtures in the packaging of the new lamps used to replace them, or packaging affording the equivalent protection. Place in full, closed stackable cartons.

Pile cartons no more than four high if palletized and secure cartons with shrink wrap to prevent shifting or falling of the loads. Clearly mark each pallet with the words "Universal Waste Lamps" or "Universal Waste Ballasts", the date, and the number of fixtures on each pallet.

Pack broken fixtures into (min.) 6 mil thick plastic bags and place inside sturdy cardboard boxes or the equivalent. Mark the outer packaging with the term "Broken Fixtures/Lamps", the date and the number of broken fixtures clearly marked on the box.

The hazardous waste vendor will not accept fixtures improperly packaged. The vendor will reject any fixtures not removed as part of a contract pay item or otherwise required under this contract.

Pack ballasts and mercury containing switches in appropriate containers.

C.1 Disposal by Contractor

Complete the lamp and ballast inventory (https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/environment/dotlampballastinventory.dotx) and contact the hazardous waste vendor to coordinate pickup and disposal at a location specified by the contractor. Consolidate all pallets and boxes from one project at a single location. Contact the hazardous waste vendor to set up an appointment for pickup. The hazardous waste vendor requires a minimum of one week advance notice to schedule pickup.

D Measurement

The department will measure Lamp, Ballast, LED, Switch Disposal by Contractor as each individual unit received by the hazardous waste vendor, properly packaged and acceptably completed, matching the total number of units provided on the inventory form. The department will not measure broken fixtures that exceed a total of ten percent of all fixtures to be disposed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
659.5000.S	Lamp, Ballast, LED, Switch Disposal by Contractor	EACH

Payment for Lamp, Ballast, LED, Switch Disposal by Contractor is full compensation for handling, packaging, labeling and scheduling disposal with the hazardous waste vendor.

The department will pay separately for the work under which the lamps, ballasts LED or Switches are removed from service.

stp-659-500 (20220107)

144. Temporary Traffic Signal for Intersections Port Washington Rd & W Bender Rd/W Devon St, Item 661.0200.3201;
Temporary Traffic Signal for Intersections IH 43 SB Ramps & Good Hope Rd, Item 661.0200.3301;
Temporary Traffic Signal for Intersections IH 43 NB Ramps & Good Hope Rd, Item 661.0200.3302;
Temporary Traffic Signal for Intersections Good Hope Rd & Port Washington Rd, Item 661.0200.3303;
Temporary Traffic Signal for Intersections IH 43 SB Ramps & STH 100/Brown Deer Rd Stage 1A-1B, Item 661.0200.3304;
Temporary Traffic Signal for Intersections IH 43 SB Ramps & STH 100/Brown Deer Rd Stage 4A-4B, Item 661.0200.3305;
Temporary Traffic Signal for Intersections IH 43 NB Ramps & STH 100/Brown Deer Rd Stage 2, Item 661.0200.3306;
Temporary Traffic Signal for Intersections IH 43 NB Ramps & STH 100/Brown Deer Rd Stage 4B, Item 661.0200.3307;
Temporary Traffic Signal for Intersections STH 32/Brown Deer Rd & CTH W/Port Washington Rd, Item 661.0200.3308.

Replace standard spec 661.2.1(1) with the following:

(1) Furnish control cabinet and control equipment for all intersections. Furnish signal controller with Ethernet port to establish remote communication at the intersection of Good Hope Rd & Port Washington Rd. The department will supply, maintain, and install a signal controller, cellular modem, and ethernet switch to establish remote communication to the signal controllers at Port Washington Rd & W Bender Rd/W Devon St, IH 43 SB Ramps & Good Hope Rd, IH 43 NB Ramps & Good Hope Rd, IH 43 SB Ramps & STH 100/Brown Deer Rd, IH 43 NB Ramps & STH 100/Brown Deer Rd, and STH 32/Brown Deer Rd & CTH W/Port Washington Rd. The department will transfer the cellular modems from the temporary signal cabinets to the permanent cabinets when the temporary traffic signals are deactivated. The cabinet must be equipped with a 6-circuit Isotel independent of the GFI receptacles. Provide a cabinet with a Corbin #2 door lock and an access door that allows placing the controller in emergency flash. Provide keys to the access door to the engineer and law enforcement agencies as required. Also provide a manual control accessible by the police. Test traffic signal control cabinets before installation. Milwaukee County will provide the signal controller with initial traffic signal timing at Good Hope Rd & Port Washington Rd. and will be responsible for all subsequent signal timing changes. The department will provide the signal controller with the initial traffic signal timing for the remaining intersections, and the department will be responsible for all subsequent signal timing changes.

Replace standard spec 661.2.1(3) with the following:

(3) Use existing underground electric service and meter breaker pedestal for the operation of the Temporary Traffic Signal at the intersections of Port Washington Rd & W Bender Rd/W Devon St, IH 43 NB Ramps & Good Hope Rd, Good Hope Rd & Port Washington Rd, and STH 32/Brown Deer Rd & CTH W/Port Washington Rd. The department has initiated the installation of the temporary electrical service with the electrical utility as it pertains to the service application and site sketch at the intersections of IH 43 SB Ramps & Good Hope Rd, IH 43 SB Ramps & STH 100/Brown Deer Rd and IH 43 NB Ramps & STH 100/Brown Deer Rd to expedite the process. Contact Parwinder Virk at (262) 548-6717 to coordinate the temporary electrical service. The department will pay for all installation and Energy Costs associated with the operation of the Temporary Traffic Signals.

Furnish and install a generator to operate the temporary traffic signals for the times required to switch the existing permanent traffic signal over to the temporary traffic signal and for the time required to switch the temporary traffic signal back over to the permanent traffic signal.

Contact the local electrical utility at least four days prior to making the switch from the Temporary Traffic Signal to the new Permanent Traffic Signal.

Append standard spec 661.2.1(6) with the following:

(6) Control equipment or controller equipment is defined as anything inside the control cabinet excluding the department furnished signal controller, cellular modem, and ethernet switch.

Replace standard spec 661.3.1(2) with the following:

(2) Request a signal inspection of the completed temporary traffic signal installation to the engineer at least five working days prior to the time of the requested inspection. Notify the SE Region Electrical Field Unit at (414) 266-1170 to coordinate the inspection. The SE Region electrical personnel will perform the inspection.

Append standard spec 661.3.1.4(4) with the following:

(4) Arrange for every other week inspections with the engineer to check the height of the span wire above the roadways to ensure that the bottom of the traffic signal heads remain within the minimum and maximum heights allowed above the roadway. Make all height adjustments within 1-hour of an inspection indicating that adjustments are required. Notify the engineer in writing upon completion of all necessary adjustments. Maintain a written log to properly document the date of each bi-weekly (i.e. once every two weeks) inspection, the heights above the roadway, the roadway clearance after adjustments have been made, and acceptance by the engineer. Provide all documentation related to the bi-weekly span wire height checks as well as all records related to maintenance performed on the temporary traffic signal installations to the engineer.

Replace standard spec 661.3.2.6(2) with the following:

(2) Upon acceptance of new signal and completion of work, the department will switch control of the intersection over to the permanent cabinet installation. Remove signal cable and wires, wood poles, wood posts, control cabinet, control equipment, and incidental materials. Upon deactivation of the controller, call the electrical utility immediately for the temporary electrical service disconnect. The department shall remove the cellular modem.

Replace standard spec 661.3.2.7(2) with the following:

(2) Respond within one hour of notification to provide corrective action to any emergency such as but not limited to knockdowns, signal cable problems, and controller equipment failures. If equipment becomes damaged or faulty beyond repair, replace it within one working day. In order to fulfill this requirement, maintain, in stock, sufficient materials and equipment to provide repairs. Replace the traffic signal control equipment including the cabinet and cabinet accessories within 4 hours. If the outcome of the response identifies damage to the department furnished signal controller, notify the Traffic Management Center at (800) 375-7302 who will then dispatch the SE Region Electrical Field Unit.

Replace standard spec 661.5(2) with the following:

(2) Payment for the Temporary Traffic Signals for Intersections bid item is full compensation for providing, maintaining, and repairing the complete temporary installation, and for removal. Payment also includes the following:

1. Furnishing and installing replacement equipment.
2. The cost of delivery and pick-up of the cabinet assemblies.

Payment is full compensation for drilling holes; furnishing and installing all materials, including bricks, and coarse aggregate; for excavation, bedding, and backfilling, including any sand or other required materials; furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; for making inspections; for cleaning up and properly disposing of waste; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

145. Intelligent Transportation Systems – General Requirements.

A Description

A.1 General

This contract includes furnishing and installing elements for an Intelligent Transportation System (ITS) in or along the existing roadway as shown on the plans.

Unusual aspects of this project include:

1. The project includes working on cables and equipment that are carrying data between roadside equipment and the department's Statewide Traffic Operations Center (STOC). Interruption of this service is not expected to perform this work. If an interruption is determined necessary, it must be done on a weekend, and must be done in a way that minimizes communication outages for the existing equipment. Notify the department's STOC at least 48 hours in advance of the planned interruption.
2. The department will furnish some of the equipment to be installed. Make a reasonable effort to discover defects in that equipment prior to installing it.

A.2 Surge Protection

Equip every ungrounded conductor wire entering or leaving any equipment cabinet with a surge protector. For purposes of this section, multiple cabinets on a single pole or foundation are considered a single cabinet.

B Materials

B.1 General

Only furnish equipment and component parts for this work that are new and have high quality workmanship. All controls, indicators, and connectors shall be clearly and permanently labeled in a manner approved by the engineer. All equipment of each type shall be identical.

All electrical equipment shall conform to the standards and requirements of the Wisconsin Electrical Code, the National Electrical Manufacturers Association (NEMA), National Electric Safety Council (NESC), Underwriter's Laboratory Inc. (UL) or the Electronic Industries Association (EIA), when applicable. All materials and workmanship shall conform to the requirements of the National Electrical Code (NEC), Rural Electrification Administration (REA), Standards of the American Society for Testing and Materials (ASTM), American Association of State Highway and Transportation Officials (AASHTO), requirements of the plans these special provisions, the standard specifications, and to any other codes, standards, or ordinances that may apply. All system wiring, conduit, grounding hardware and circuit breakers shall be in conformance with the National Electrical Code. Whenever reference is made to any of the standards mentioned, the reference shall be considered to mean the code, ordinance, or standard that is in effect at the time of the bid advertisement.

B.2 Outdoor Equipment

All conductive connectors, pins (except pins connected by soldering), and socket contacts shall be gold plated. Acrylic conformal coating shall protect each circuit board side that has conductive traces. Except for integrated circuits containing custom firmware, all components shall be soldered to the printed circuit board.

To prevent galvanic corrosion, all connections between dissimilar metals shall incorporate a means of keeping moisture out of the connection. Where the connection need not conduct electricity, interpose a non-absorbing, inert material or washer between the dissimilar metals. Use nonconductive liners and washers to insulate fasteners from dissimilar metals. Where the connection must conduct electricity, use a conductive sealant between the dissimilar metals. Alternatively, use an insulating gasket and a bond wire connecting the two metal parts.

B.3 Custom Equipment

Equipment that is not part of the manufacturer's standard product line, or that is made or modified specifically for this project, shall conform to the following requirements:

Where practical, electronics shall be modular plug-in assemblies to facilitate maintenance. Such assemblies shall be keyed to prevent incorrect insertion of modules into sockets.

All components shall be available from multiple manufacturers as part of the manufacturers' standard product lines. All must be clearly labeled with the value, part number, tolerance, or other information sufficient to enable a technician to order an exact replacement part.

Lamps used for indicator purposes shall be light-emitting diodes.

The printed circuit boards shall be composed of "two-ounce" copper on 1/16-inch thick fiberglass epoxy or equivalent type construction. Holes that carry electrical connections from one side of the boards to the other shall be completely plated through. Multilayer printed circuit boards shall not be used. The name or reference number used for the board in the drawings and maintenance manuals supplied to the department shall be permanently affixed to each board.

All components shall be mounted so that the identifying markings are visible without moving or removing any part, if practical.

B.4 Environmental Conditions

Equipment shall continue to operate as specified under the following ranges of environmental conditions, except as noted in the specifications for individual pieces of equipment.

1. **Vibration and Shock:** Vehicle speed and classification sensors and any other equipment mounted atop poles or on structures shall not be impaired by the continuous vibration caused by winds (up to 90 mph with a 30 percent gust factor) and traffic.
2. Duty Cycle: Continuous
3. **Electromagnetic Radiation:** The equipment shall not be impaired by ambient electrical or magnetic fields, such as those caused by power lines, transformers, and motors. The equipment shall not radiate signals that adversely affect other equipment.
4. Electrical Power:
    a. **Operating power:** The equipment shall operate on 120-volts, 60-Hz, single-phase unless otherwise specified. It shall conform to its specified performance requirements when the input voltage varies from 89 to 135 volts and the frequency varies +3 Hz.
    b. **High frequency interference:** The equipment operation shall be unaffected by power supply voltage spikes of up to 150 volts in amplitude and 10 microseconds duration.
    c. **Line voltage transients:** The equipment operation shall be unaffected by voltage transients of plus or minus 20 percent of nominal line voltage for a maximum duration of 50 milliseconds. Equipment in the field shall meet the power service transient requirements of NEMA Standard TS-2 when connected to the surge protectors in the cabinets.
5. Temperature and Humidity:
    a. **Field equipment:** Equipment in the field shall meet the temperature and humidity requirements of NEMA Standard TS-2. Liquid crystal displays shall be undamaged by temperatures as high as 165 degrees F, and shall produce a usable display at temperatures up to 120 degrees F.
    b. **Equipment in Controlled Environments** shall operate normally at any combination of temperatures between 50 degrees F and 100 degrees F, and humidity's between 5 percent and 90 percent, non-condensing, and with a temperature gradient of 9 degrees F per hour.

B.5 Patch Cables and Wiring

All cables and wiring between devices installed in a single cabinet, or in separate cabinets sharing a single concrete base, will be considered incidental to the installation of the devices and no separate payment will be made for them. It is anticipated that this will include fiber optic patch cables between termination panels and Ethernet switches, 10 / 100 MBPS Ethernet cables, RS-232 cables between individual devices and terminal servers, and power cables between individual devices and power sources within the cabinets.

B.6 Surge Protection

Low-voltage signal pairs, including twisted pair communication cable(s) entering each cabinet shall be protected by two-stage, plug-in surge protectors and shall be installed on both ends of camera control cables. The protectors shall meet or exceed the following minimum requirements:

1. The protectors shall suppress a peak surge current of up to 10k amps.
2. The protectors shall have a response time less than one nanosecond.
3. The protector shall clamp the voltage between the two wires at a voltage that is no more than twice the peak signal voltage and clamp the voltage between each wire and ground at 50 volts.
4. The first stage of protection shall be a three-element gas discharge tube, and the second stage shall consist of silicon clamping devices.
5. The protector shall also contain a resettable fuse (PTC) to protect against excessive current.
6. There shall be no more than two pairs per protector.
7. It shall be possible to replace the protector without using tools.

Cables carrying power to curve signs shall be protected at the cabinet by grounded metal oxide varistors of appropriate voltages. The varistors must be at least 0.8 inch in diameter.

C Construction

C.1 Thread Protection

Provide rust, corrosion, and anti-seize protection at all thread assemblies of metallic parts by coating (non-spray) the mating surfaces with an approved compound. Failure to use an approved compound will result in no payment for the items to which coating was to have been applied.

C.2 Cable Installation

When installing new cables into conduits containing existing cables, remove the existing cables and reinstall the existing cables simultaneously with the new cables. Take every precaution necessary to protect the existing cables. In the event of avoidable damage to the existing cables, replace all damaged cables, in-kind, at no additional expense to the department. When cables are pulled into conduit, use a cable pulling lubricant approved by the cable manufacturer. Submit documentation supporting manufacturer approval of the lubricant to the engineer.

C.3 Wiring

Every conductor, except a conductor contained entirely within a single piece of equipment, must terminate either in a connector or on a terminal block. Provide and install the connectors and terminal blocks where needed, without separate payment. Use approved splice kits instead of connectors and terminal blocks for underground power cable splices.

Permanently label and key connectors to preclude improper connection. Obtain prior engineer approval for the labeling method(s) prior to use.

Terminal blocks must be affixed to panels that permanently identify the block and what wire connects to each terminal. This may be accomplished by silk screening or by installing a laminated printed card under the terminal block, with the labels on portions of the card that extend beyond the block. Installation of terminal blocks by drilling holes in the exterior wall of the cabinet is not acceptable.

Use barriers to protect personnel from accidental contact with all dangerous voltages.

Do not install conductors carrying AC power in the same wiring harness as conductors carrying control or communication signals.

Arrange wiring, including fiber optic pigtails, so that any removable assembly can be removed without disturbing wiring that is not associated with the assembly being removed.

Communication and control cables may not be spliced underground, except where indicated on the plans.

Cables in the Statewide Traffic Operations Center or in communication hubs, which are not contained within a single cabinet, shall have at least 10 feet of slack.

C.4 System Operations

If the contractor’s operations unexpectedly interrupt Intelligent Transportation Systems (ITS) service, notify the engineer immediately and restore service within 24 hours. Repair all damaged facilities to the condition existing before the interruption. If service is not restored within 24 hours, the department may restore service to any operating device and deduct restoration costs from payments due the contractor.

C.5 Surge Protection

Arrange the equipment and cabinet wiring to minimize the distance between each conductor’s point of entry and its protector. Locate the protector as far as possible from electronic equipment. Ensure that all wiring between the surge protectors and the point of entry is free from sharp bends.

D Measurement

No separate measurement will be made for the work described in this article.

E Payment

No separate payment will be made for the work described in this article. All work described in this article shall be included under the ITS items in the contract.

670-010 (20100709)

146. Install ITS Field Cabinet, Item 673.1200.S.

A Description

This special provision describes installing a department-furnished type 170, size 334 field cabinet.

B Materials

The department will furnish the type 170, size 334 field cabinet. Provide all necessary miscellaneous mounting hardware and internal power cables. With the field cabinet, the department will furnish cabinet bolts to anchor the cabinet to the concrete base.

C Construction

Install the field cabinet on a new or existing concrete base paid separately. Make all power connections to the cabinet, isolating the neutral bus from the cabinet and equipment ground.

Effectively ground all cable grounding shields and any spare or unused conductors in the field cabinet to the equipment grounding terminal strip.

D Measurement

The department will measure Install ITS Field Cabinet by the unit, installed according to the contract and accepted.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
673.1200.S	Install ITS Field Cabinet	EACH

Payment is full compensation for installing the state-furnished field cabinet; making all connections; and grounding as necessary.

stp-673-005 (20220107)

147. Install Pole Mounted Cabinet, Item 673.1225.S.

A Description

This special provision describes installing department furnished aluminum enclosures on poles for intelligent transportation systems equipment.

B Materials

Use stainless steel bolts, nuts, and washers unless otherwise specified.

All conductors, terminals, and parts that could be hazardous to maintenance personnel shall be protected with suitable insulating material.

The cabinet will be equipped with service panels. Two panels shall be provided and mounted on the cabinet sidewalls. The left side panel shall be designated as "Input/Communications," and the right side panel shall be designated as the "Service Panel."

The service panel will be equipped with a four-outlet handi-box. Wire the handi-box to the series portion of the filtering surge protector.

Use metallic conduit, fittings, and adapters required from the underground conduit transition point to the cabinet as part of this item. A typical installation requires on 2-inch conduit. Use metallic conduit conforming to standard spec 652.

C Construction

Fasten the field cabinet securely onto a pole. Provide bolted stainless steel connections with lock washers, locking nuts, or other engineer-approved means to prevent the connection nuts from backing off. Isolate dissimilar materials from one another using stainless steel fittings. Make all power connections to the cabinet as specified in standard spec 656.

Drill and tap the cabinet, as necessary, to mount the terminal blocks and other attachments to the service panel, to provide an entrance on the back of the cabinet for cable from the pole mounted intelligent transportation systems equipment, and to mount the service panel to the cabinet as shown in the details.

Remove all sharp edges or burrs, or both, caused by the cutting or drilling process. Seal all openings to prevent water from entering the cabinet. Mount the surge protector to the service panel.

Install metallic conduit on the exterior of the pole (for entrance to the cabinet from the ground) as the plans show, and according to the applicable requirements of standard spec 652.

D Measurement

The department will measure Install Pole Mounted Cabinet as each individual assembly, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
673.1225.S	Install Pole Mounted Cabinet	EACH

Payment is full compensation for installing the pole mounted cabinet; for making all connections and conduit/wire entrances; and for all testing.

stp-673-010 (20220107)

148. Cameras.

Replace standard spec 677.3(8) with the following:

(8) For permanent camera installations, provide camera cables in conduit and poles as the plans show. For temporary traffic signal camera installations, provide camera cables on the temporary traffic signal span wire as directed by the engineer. Provide continuous cable runs without splices between the camera assembly and the camera controller assembly.

149. Removing 50-Foot Camera Pole, Item 677.9051.S;

A Description

This special provision describes removing existing camera poles.

B (Vacant)

C Construction

Disconnect all cables, wiring and equipment that are mounted on or in the poles, and remove the pole from the concrete footing. The department will pick up any antennae, cameras, or other equipment mounted on the pole; contact maintenance staff at (414) 227-2166 at the department's Statewide Traffic Operations Center, when the material is ready to be picked up. Properly dispose of the pole, conduit, cabling, and wiring away from the project site.

D Measurement

The department will measure Removing (Height) Camera Pole by the unit, acceptably removed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
677.9051.S	Removing 50-Foot Camera Pole	EACH

Payment is full compensation for removing and disposing of the existing camera pole; disconnecting any necessary wiring; removing the equipment mounted on the poles; disposing of cabling and wiring; and transportation.

stp-677-901 (20100630)

150. Removing CCTV Camera, Item 677.9200.S.

A Description

This special provision describes removing existing CCTV cameras from existing camera poles as the plans show.

B (Vacant)

C Construction

Disconnect all wiring at the control cabinet and at the top of the camera pole. Remove all fastening hardware and remove the existing camera and pan, tilt, and zoom mechanisms from the top of the pole. Salvage and store the cameras for pick up by the department; contact maintenance staff at (414) 227-2166 at the department's Statewide Traffic Operations Center to coordinate when the materials will be picked up.

The contractor may request a meeting with the engineer to assess the condition and operability of the camera before beginning work on removing the camera. Any damage or improper operation not noted at the meeting, or before the contractor starting work on the removal, will be assumed to be the fault of the contractor; repair or replace the camera. Store the camera until the department picks up the camera.

D Measurement

The department will measure Removing CCTV Camera by the unit, acceptably and completely removed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
677.9200.S	Removing CCTV Camera	EACH

Payment is full compensation for removing an existing CCTV camera; for disconnecting all necessary cables and wiring; and properly storing the materials.

stp-677-902 (20100630)

151. Install Overhead Freeway DMS Full Matrix, Item 678.0100.S.

A Description

This special provision describes installing a state-furnished, or an existing salvaged, dynamic message sign on a new sign structure.

B Materials

The department will provide the sign, or it will be salvaged, controller, and the control cable. The control cable will be multi-mode fiber optic cable.

Use an AWG #6 copper wire or equivalent bonding straps to bond the sign and cabinet to the structure. Use an AWG #6 solid, bare copper wire to bond the sign structure to ground rods.

1. For the three wires carrying 120/240 VAC power from the cabinet to the sign, use single conductor, stranded copper, 120/240 VAC, XLP insulated, USE rated wire. Size the wire to carry the maximum amperage permitted by the main breakers in the sign.

Provide a 100-amp 120/240-VAC load center in the controller cabinet, along with breakers recommended by the sign manufacturer.

C Construction

Install the load center so that the main breakers control all power to the sign and cabinet. Provide at least three branch circuits, one for the sign, one for the controller and communication equipment, and one for all cabinet accessories, such as fan, light, and heater. Only protect the branch serving the controller and communication equipment with the second stage of the surge protector. Connect the power and control cables according to the manufacturer's recommendations. Run the cables in rigid metallic conduit or flexible metallic conduit, or combination of these, within the sign structure.

Bond the bottom of the sign structure to one or more ground rods. Use exothermic welding at each end of the ground wire, unless the steel structure has a suitable grounding lug. Use a device that measures resistance to ground using the three-point fall-of-potential method to ensure that the resistance from the sign's ground bar to ground does not exceed 4 ohms. Add more ground rods, if necessary, to achieve this requirement.

D Measurement

The department will measure Install Overhead Freeway DMS Full Matrix by each sign, acceptably installed and tested.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
678.0100.S	Install Overhead Freeway DMS Full Matrix	EACH

Payment is full compensation for installing and testing the sign and controller; providing cables, conduits, and fittings; for testing the sign; and for transporting materials.

stp-678-010 (20100630)

152. Communication Systems.

Replace standard spec 678.2.1(1) with the following:

(1) The department will furnish fiber optic cable, termination panels, Ethernet switches, wireless antennas, SFP's and cellular modems.

Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking up the materials.

Replace standard spec 678.5(6) with the following:

(6) Payment for Install Ethernet Switches and Install Wireless Antennas is full compensation for transporting and installing the devices; for cables and connectors; and connecting the devices.

Replace standard spec 678.5(7) with the following:

(7) Payment for Install Cellular Modems is full compensation for transporting and installing the modem; for cables and connectors including rack mountable shelf; for connecting the devices; for programming and configuration; and for testing.

153. Installing and Maintaining Bird Deterrent System Station 1078+50 (B-40-577), Item 999.2000.S.0001; Installing and Maintaining Bird Deterrent System Station 1078+50 (B-40-578), Item 999.2000.S.0002; Installing and Maintaining Bird Deterrent System Station 618BDE+00 (B-40-732), Item 999.2000.S.0003; Installing and Maintaining Bird Deterrent System Station 618BDW+00 (B-40-733), Item 999.2000.S.0004; Installing and Maintaining Bird Deterrent System Station 27GHE+00 (B-40-734), Item 999.2000.S.0005; Installing and Maintaining Bird Deterrent System Station 27GHW+00 (B-40-735), Item 999.2000.S.0006; Installing and Maintaining Bird Deterrent System Station 100UPRR+00 (B-40-24), Item 999.2000.0007.

A Description

This special provision describes inspecting, installing and/or maintaining approved deterrents that prevent migratory bird nesting on bridges and culverts. Swallows or other migratory birds' nests have been observed on or under the existing culvert or bridge at the station identified. All active nests (when eggs or young are present) of migratory birds are protected under the federal Migratory Bird Treaty Act. One deterrent system shall be installed and/or maintained for each applicable structure. Deterrent methods selected shall be appropriate for structure type, size and/or site-specific constraints.

B Materials

B.1 Hardware and Lumber

Lumber, hardware, and fastening devices shall be durable enough to last through the length of the nesting season. Fastening devices and deterrence system must be approved by the engineer prior to installation on culverts and bridges that will remain in service after removal of deterrent systems. The method of fastening should not compromise the culvert or bridge concrete surfaces or steel protection systems. The attachment locations must be restored and repaired as needed by use of engineer approved fillers, sealers and paint systems

B.2 Netting Materials

Exclusion netting is material either wrapped around or draped and fastened to bridge decks/abutments and culvert corners to prevent bird entry.

Furnish exclusionary netting to deter nesting in bridge decks and abutments and corners of box culverts, consisting of either:

a. 1/2" x 1/2" or 3/4" x 3/4" knotless, flame resistant, U.V. stabilized polyethylene or polypropylene netting with minimum 40-pound breaking strength per strand, or engineer approved equal.

b. Galvanized wire mesh (hardware cloth) with a wire diameter of .040 inches (19-gauge) and opening width of 1/2-inch.

At a minimum, use either 1" x 2" (nominal) lumber or 3/4" x 2" pressure treated plywood strips and of equal length as the netting.

B.3 Plastic Strip Curtain

Plastic strip curtains are strips of plastic attached to vertical surfaces in areas suitable for nesting.

Furnish 3-foot wide lengths of 6 mil minimum plastic sheeting with the lower 2 feet cut into vertical strips 2 inches wide.

At a minimum, use either 1" x 2" (nominal) lumber or 3/4" x 2" pressure treated plywood strips and staples to attach plastic strips to wood to fabricate the strip curtain.

Furnish concrete screws to attach strip curtain to structure.

B.4 Corner Slope Materials

Corner slopes are pieces of curved plastic placed in corners suitable for nesting. They are particularly effective in preventing nesting in top corners of box culverts.

Furnish U.V. stabilized pre-fabricated PVC or polycarbonate corner slopes from commercial bird-deterrent manufacturers or an approved equal.

C Construction

C.1 General

If active nests are observed after construction starts, or if a trapped bird or an active nest is found, stop work that may affect birds or their nests, and notify the engineer to consult with the Wisconsin Department of Natural Resources transportation liaison, Kristina Betzold, at (414) 507-4946, or the department regional environmental coordinator, Dobra Payant, at (414) 750-2677.

Efforts should be made to release trapped birds, unharmed.

C.2 Nest Removal

Remove unoccupied nests prior to the beginning of the nesting season as designated in Prosecution and Progress. Nest removal involves the removal and disposal of unoccupied or partially constructed nests without eggs or nestlings. Removing all evidence of nesting (e.g., cleaning droppings from structures) eliminates a visual cue for a potential breeding location, especially for first-time breeders. Nest removal is not a type of deterrent and does not prevent nest establishment but can delay the process. As such, it should only be used in conjunction with other methods. It cannot be used on its own to ensure compliance. Nest removal is not required if deterrents are installed before the start of the avoidance window unless nests interfere with successful installation of the deterrent.

Remove nests on the structure by scraping or pressure washing prior to established avoidance windows to deter nesting. Remove only unoccupied or partially constructed nests without eggs or nestlings. Remove newly built nests every two days before eggs are laid. Nest removal is intended to be used prior to and in conjunction with other nesting deterrents.

C.3 Exclusion Netting

C.3.1 Installation

Using concrete screws, anchor lumber to bridge or culvert along perimeter of intended netting. Fasten netting to lumber until netting is held taut. Eliminate any loose pockets or wrinkles that could trap and entangle birds. Ensure the net is pulled taut in order to prevent flapping in the wind, which results in tangles or breakage at mounting points.

For culverts, attach netting at a 45-degree angle at the culvert corner so it extends at least 12” below the corner.

C.4 Plastic Curtains

C.4.1 Installation

Attach plastic curtains along the entire length of vertical surface or corner on which nest building is to be deterred. Affix plastic curtain strips to treated lumber with staples spaced a minimum of 1 foot O.C. Wrap plastic curtains around lumber prior to attaching it to the structure to reduce the likelihood of it tearing out at the staples. Screw lumber into the underside of the bridge deck or top of box culvert with concrete screws placed 24-inches O.C. minimum.

C.5 Corner Slopes

C.5.1 Installation

Attach corner slopes to the structure per the manufacturer’s recommendations. Use urethane-based adhesives if manufacturer supplied hardware or adhesives are not available or no recommendations are provided. Install end caps or seal ends of corner slopes to prevent entry of birds or other animals.

C.6 Inspection and Maintenance

Inspect bird deterrent devices every two weeks both during and prior to construction when deterrents have been installed to exclude birds prior to nesting windows, and after large storm events or high winds. Ensure that netting is taut, that no gaps or holes have formed, and that the nets are functioning properly. Ensure that corner slopes are not cracked or otherwise damaged and are functioning properly. Ensure that curtains are undamaged, with no tears, holes, or creases. Repair any damaged or loose deterrent devices. Inspect, maintain, and repair nesting deterrents whether installed by the contractor or others. Repair, replace, supplement deterrents as necessary with materials meeting the requirements of this specification.

Remove any unoccupied or partially constructed nests without eggs or nestlings

Repair deterrents to prevent birds from attempting to nest again.

Record all inspection, removal, and maintenance activities. Provide inspection, removal and maintenance records to the engineer upon request.

C.7 Removal and Structure Repair

Maintain the deterrent until the engineer determines that the deterrent is deemed no longer necessary. Upon completion of the project, remove any remaining migratory bird deterrent from the project site. If the existing bridge or culvert is to remain after construction, restore and repair as needed by use of engineer approved fillers, sealers and paint systems.

D Measurement

The department will measure Installing and Maintaining Bird Deterrent System (Station) as a single unit at each structure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
999.2000.S.0001	Installing and Maintaining Bird Deterrent System Station 1078+50 (B-40-577)	EACH
999.2000.S.0002	Installing and Maintaining Bird Deterrent System Station 1078+50 (B-40-578)	EACH
999.2000.S.0003	Installing and Maintaining Bird Deterrent System Station 618BDE+00 (B-40-732)	EACH
999.2000.S.0004	Installing and Maintaining Bird Deterrent System Station 618BDW+00 (B-40-733)	EACH
999.2000.S.0005	Installing and Maintaining Bird Deterrent System Station 27GHE+00 (B-40-734)	EACH
999.2000.S.0006	Installing and Maintaining Bird Deterrent System Station 27GHW+00 (B-40-735)	EACH
999.2000.S.0007	Installing and Maintaining Bird Deterrent System Station 100UPRR+00 (B-40-24)	EACH

Payment for Installing and Maintaining Bird Deterrent System is full compensation for providing and installing deterrents that prevent migratory bird nesting; for inspecting structures for the presence of migratory birds, inspecting deterrents installed by others; removing and disposing of unoccupied or partially constructed nests without eggs or nestlings; maintaining, repairing, replacing, supplementing, existing deterrent materials; repairing damage to structures resulting from installation of deterrents; removal and disposal of materials.

stp-999-200 (20220107)

154. Roadway Embankment, Item SPV.0035.0001.

A Description

This special provision describes placing in embankments and in miscellaneous backfills, material obtained under the bid items in the roadway and drainage excavation or excavation for structure sections; or material obtained off site as specified under these special provisions.

B Materials

B.1 Embankment

Furnish roadway embankment conforming with standard spec 207.2 except as follows:

Add the following to standard spec 207.2(1):

If the contractor utilizes offsite material to construct embankments, the material shall conform to standard spec 208 except as follows:

Delete standard spec 208.2.2(2).

C Construction

Construct roadway embankment according to standard spec 207.3 except as follows:

Add the following to standard spec 207.3.6:

Prior to placing any material for a succeeding layer, ensure the previous layer does not have excessive rutting, displacement, or distortion under the compacting or hauling equipment. If rutting, displacement, or distortion is observed, the contractor shall inform the engineer how yielding material will be addressed prior to continuing roadway embankment construction.

If off site material is utilized, construction must conform to standard spec 208.3.

Replace standard spec 205.3.2(4) with the following:

If placing embankment on side slopes 10 feet high or higher and steeper than one vertical to 3 horizontal, provide vertically-faced, horizontal benches at least 2 feet wide into the existing embankment slope every 2-foot of vertical height.

If constructing embankment on only one side of abutments, wing walls, or piers, construct the embankment so that the area immediately adjacent to the structure is not compacted in a manner that causes overturning of or excessive pressure against the structure. If constructing embankment on both sides of a concrete wall, pipe, or box type structure, construct the embankment so that the elevation on both sides of the structure is always approximately the same.

D Measurement

The department will measure Roadway Embankment without any correction for shrinkage or expansion factors by the cubic yard acceptably completed in its final location using the method of average end areas, except as follows:

a) The engineer and contractor mutually agree to an alternative volume calculation method.

b) If it is not possible to compute volumes of the various classes of roadway and drainage embankment by the method of average end areas due to erratic location of isolated deposits, the department may compute the volumes by three-dimensional measurements.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.0001	Roadway Embankment	CY

155. HPC Masonry Structures, Item SPV.0035.4000.

A Description

This special provision describes specialized material and construction requirements for high-performance concrete used in bridge structures. Conform to standard spec 501, 502 and 509, as modified in this special provision. Conform to standard spec 715 for QMP Concrete Pavement, Cast-in-Place Barrier and Structures.

B Materials

501.2.7.3 Coarse Aggregates

Replace the entire text of standard spec 501.2.3.1 with the following:

501.2.7.3.1 General

(1) Provide coarse aggregates from a department-approved source. Use an approved source listed on the APL or follow the source approval process specified in standard spec 106.3.4.2. In addition to the requirements of standard spec 106.3.4.2, perform tests for LA wear, sodium sulfate soundness, freeze-thaw soundness and lightweight pieces at least once per calendar year when producing coarse aggregates for use in high-performance concrete mixes.

(2) Use clean, hard, durable crushed limestone or crushed gravel with 100 percent fractured surfaces and free of excess flat and elongated pieces, lightweight particles, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.

(3) Use virgin aggregates only.

(4) Contact the engineer a minimum of 4 weeks prior to paving to collect a sample of the aggregates proposed for the project. The engineer will obtain the sample, or observe the contractor obtaining the sample. The sampler must be HTCP certified to sample aggregates.

(5) The department test results will be used for aggregate acceptance.

(6) The department will randomly sample coarse aggregate for lightweight pieces testing at least once per 10,000 cubic yards during placement of concrete masonry structures.

501.2.7.3.2 Physical Properties

Replace standard spec 501.2.7.3.2.1 paragraph one with the following:

(1) Furnish coarse aggregates approved for use in concrete masonry structures and conforming to the following:

Aggregate Quality Test	Test Method	Maximum Percent by Weight
LA Wear (100 and 500 revolutions) [1]	AASTO T96 WTM	35
Sodium Sulfate Soundness (R-4, 5 cycles) [1]	AASHTO T104 WTM	6
Freeze-Thaw Soundness[1]	AASHTO T103 WTM	12
Lightweight Pieces[1] [2]	AASHTO T113 WTM	2.0

[1] Coarse aggregate sizes No. 1 and No. 2 as defined in 501.2.7.4.2 will be tested individually and the results weighted by the blend percentage listed in the mix design.

[2] Material having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of lightweight pieces in the sample retained on the 3/8-inch sieve by the weight of the total sample.

501.2.7.3.3 Deleterious Substances

Replace standard spec 501.2.7.3.3 paragraph one with the following:

(1) The quantity of deleterious substances must not exceed the following percentages:

DELETERIOUS SUBSTANCE ..... PERCENT BY WEIGHT
Shale.....1.0
Coal 1.0
Clay lumps.....0.3
Soft fragments.....5.0
Any combination of above 5.0
Flat or elongated pieces based on a 3:1 ratio[1].....15.0
Materials passing the No. 200 sieve 1.5

[1] According to ASTM D4791 WTM

501.2.8 Concrete Curing Materials

Replace entire text with the following:

(1) Furnish burlap conforming to AASHTO M 182, class 1, 2, 3 or 4.

C Construction

501.3.2.4.3.3 Extended Delivery Time

Delete 501.3.2.4.3.3 paragraph one.

501.3.5 Ready-Mixed Concrete

Replace standard spec 501.3.5.1 paragraph one with the following:

(1) Use central-mixed concrete as defined in standard spec 501.3.5.1(2) for all work performed under this special provision.

501.3.5.2 Delivery

Replace standard spec 501.3.5.2 paragraph three with the following:

(3) Deliver and completely discharge all concrete within one hour beginning when adding water to the cement, or when adding cement to the aggregates. A decrease in air temperature below 60 F or the use of department-approved retarders does not increase the discharge time.

501.3.7.1 Slump

Replace the entire text with the following:

(1) Use a 2-inch to 4-inch slump

(2) Perform slump tests for concrete according to AASHTO T119 WTM.

501.3.8.2 Hot Weather Concreting

Replace the entire text of standard spec 501.3.8.2.1 (1) and (2) with the following:

501.3.8.2.1 General

(1) The contractor is responsible for the quality of concrete placed in hot weather. Submit a written temperature control plan at or before the pre-pour meeting. In that plan, outline the actions to control concrete temperature if the concrete temperature at the point of placement exceeds 80° F. Do not place concrete without the engineer's written acceptance of that temperature control plan. Perform the work as outlined in the temperature control plan.

(2) If the concrete temperature at the point of placement exceeds 80 F, do not place concrete for items covered in this special provision.

(3) The department will pay $0.75 per pound for the quantity of ice required to reach a target concrete temperature of 75° F if the following conditions are met:

1. The un-iced concrete temperature exceeds 80 F.
2. The contractor has performed the actions outlined in the contractor’s accepted temperature control plan.
3. The contractor elects to use ice.

(4) Notify the engineer whenever conditions exist that might cause the temperature at the point of placement to exceed 80° F. If project information is not available, the contractor should obtain information from similar mixes placed for other nearby work.

501.3.8.2.2 Bridge Decks

Replace the entire text with the following:

(1) Do not place concrete for bridge decks when the air temperature is above 80 F.

(2) For concrete placed in bridge decks, submit a written evaporation control plan at each pre-pour meeting. In that plan, outline the actions to maintain concrete surface evaporation at or below 0.15 pounds per square foot per hour. Do not place concrete for bridge decks without the engineer's written acceptance of that evaporation control plan. If the engineer accepts an evaporation control plan calling for ice, the department will pay $0.75 per pound for that ice. Perform the work as outlined in the evaporation control plan.

(3) If predicting a concrete surface moisture evaporation rate exceeding 0.15 pounds per square foot per hour, do not place concrete for bridge decks.

(4) Provide evaporation rate predictions to the engineer 24 hours before each bridge deck pour.

(5) Compute the evaporation rate from the predicted ambient conditions at the time and place of the pour using the nomograph, or computerized equivalent, specified in CMM 525, figure 1 or using a computerized equivalent. Use weather information from the nearest national weather service station. The engineer will use this information to determine if the pour will proceed as scheduled.

(6) At least 8 hours before each pour, the engineer will inform the contractor in writing whether or not to proceed with the pour as scheduled. If the actual computed evaporation rate during the pour exceeds 0.15 pounds per square foot per hour, at the engineer's discretion, the contractor may be allowed to implement immediate corrective action and complete the pour.

502.3.5.4 Superstructures

Delete standard spec 502.3.5.4 paragraph five.

502.3.7.8 Floors

Replace standard spec 502.3.7.8 paragraph five with the following:

(5) Set the rails or tracks that the finish machine rides on, to the required elevation; and ensure they adjust to allow for settlement under load. Support the rails or tracks outside the limits of the finished riding surface. Do not support rails or tracks on the tops of girders, or within the finished riding surface, without the engineer's written permission.

For bridges that include Longitudinal Grooving Bridge Deck, delete 502.3.7.8 paragraphs thirteen, fourteen, and fifteen. For bridges that include Polymer Overlay, follow the requirements of 502.3.7.8 parapgraphs thirteen, fourteen, and fifteen.

Add the following to standard spec 501.3.7.8:

(19) Do not place bridge deck concrete more than 10 feet ahead of the finishing machine. If there is a delay of more than 10 minutes during the placement of a bridge deck, cover all concrete (unfinished and finished) with wet burlap to protect the concrete from evaporation until placement operations resume.

(20) Keep hand finishing, except for the edge of deck, to a minimum. Equip the finishing machine with a pan behind the screed. Apply micro texture using a broom or turf drag following the use of a 10-foot straight edge. Only finish by hand as necessary to close up finished concrete. Begin wet curing the deck within a timeframe acceptable to the engineer following the micro texture.

502.3.8 Curing

Replace standard spec 502.3.8.1 (1) with the following:

(1) Maintain adequate moisture throughout the concrete mass to support hydration for at least 14 days.

502.3.8.2 Curing Requirements

Replace entire text of standard spec 502.3.8.2.1 with the following:

502.3.8.2.1 General

(1) Wet-cure the concrete for bridge decks, structural approach slabs, sidewalks on bridges and raised medians on bridges for 14 days by use of a soaker hose system, or other engineer-approved methods. Cover the finished surface of bridge decks and overlays with one layer of wetted burlap or wetted cotton mats within 10 minutes after the finishing machine has passed. Apply the burlap/cotton gently to minimize marking of the fresh concrete. Keep the first layer of burlap/cotton continuously wet until the bridge deck or overlay is sufficiently hard to apply a second layer of wetted burlap/cotton. Immediately after applying the second layer of burlap/cotton, continue to keep the deck wet until placing and activating the soaker hose system. Throughout the remainder of the curing period, keep the burlap/cotton continuously wet with soaker hoses hooked up to a continuous water source. Inspect the burlap/cotton twice daily to ensure the entire surface is moist. If necessary, alter the soaker hose system as needed to ensure the entire surface is covered and stays moist. After 48 hours from the time of completion of the bridge deck or overlay pour, the soaker hose system and burlap/cotton may be covered with polyethylene sheeting. Provide a continuous flow of water through the soaker hose system for the entire curing period.

(2) Do not uncover any portion of the deck at any time for any reason during the first 7 days of the curing period.

(3) Set up and test the fogging system before each bridge deck, structural approach slab, bridge mounted sidewalk or bridge mounted raised median pour. Keep the fogging system set up and operational during the pour.

502.3.8.2.3 Decks

Delete the entire text.

502.3.8.2.4 Parapets

Replace the entire text with the following:

(1) Cure the inside and outside concrete faces and tops of railings or parapets by covering with wetted burlap immediately after form removal and surface finish application. Keep the burlap thoroughly wet for at least 7 days; or by covering for the same period with thoroughly wet polyethylene-coated burlap conforming to standard spec 501.2.8.

(2) Secure coverings along all edges to prevent moisture loss.

502.3.9 Cold Weather Protection

Replace the entire text of standard spec 502.3.9.6 with the following:

502.3.9.6 Bridge Decks

(1) Protect concrete in bridge decks as specified for structural masonry, and except for parapets and similar pours, according to the following requirements:

1. Do not place concrete for bridge decs or other superstructure elements when the national weather service forecast for the construction area predicts temperatures to fall below 32 F within 24 hours, unless the engineer specifically allows or requires in writing.
2. Protect the underside of the deck, including the girders, for bridge deck and overlay pours by housing and heating when the national weather service forecast predicts temperatures to fall below 32 F during the cold weather protection period. Maintain a minimum temperature of 40 F in the enclosed area under the deck for the entire 14-day curing period.

D (Vacant)

E Payment

Replace standard spec 502.5.1 paragraph one with the following:

502.5.1 General

(1) The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.4000	HPC Masonry Structures	CY

710.5 Sampling and Testing

Supplement standard spec 710.5 with the following:

710.5.8 Chloride Penetration Resistance

(1) For each new or changed mix design, measure chloride penetration resistance according to AASHTO T277 at a frequency of 1 test per 3 months (quarterly) of production.

(2) Strip permeability samples from molds and wet cure according to AASHTO T277 Accelerated Moist Curing. Upon completion of the curing process, obtain one sample from each cylinder and test according to AASHTO T277.

(3) Ensure that the initial accepted mix designs meet the chloride penetration resistance limit of 1500 coulombs based on AASHTO T277. Quarterly chloride resistance test results exceeding 1500 coulombs, the department will require adjustment of the concrete mix going forward to improve the chloride penetration resistance.

715.2.2 Class I Concrete Mixes

Supplement standard spec 715.2.2.2 with the following:

715.2.2.2 Structures

(5) Provide a mix design using optimized aggregate gradation and a cementitious content within the range of 470 to 540 pounds per cubic yard. For all superstructure and substructure concrete, unless the engineer approves otherwise in writing, concrete mixtures must use an IL, IP, IS, or IT blended cement.

(6) In addition to the standard spec mix design laboratory trial batching for structures, include the results of the following tests:

1. AASHTO T119 Slump of Hydraulic Cement Concrete.
2. AASHTO T277 Rapid Determination of the Chloride Permeability of Concrete, using the modified curing procedure according to 710.5.8 in this special provision.

(7) Provide concrete with a 28-day compressive strength that equals or exceeds the following:

- If the contract specifies f'c, then f'c.
- If the contract does not specify f'c, then 4000 psi.

(8) Provide concrete with a maximum chloride penetration resistance of 1500 coulombs at 28-days.

156. Concrete Masonry Soldier Pile Footing, Item SPV.0035.4005.

A Description

This special provision describes providing furnishing and placing concrete into predrilled holes for soldier piles and installing soldier piles.

B Materials

Provide and use grade A concrete masonry for Concrete Masonry Soldier Pile Footings conforming to standard spec 501. Perform QMP testing conforming to standard spec 716 for Class II Ancillary Concrete for all concrete masonry for Concrete Masonry Soldier Pile Footings.

C Construction

Before placing concrete masonry, give the engineer sufficient notice to allow inspection of the predrilled holes, soldier piles, and casting preparations. For concrete masonry solider pile footings constructed without the use of slurry, no more than 3 inches of standing water is permitted in the bottom of the drilled hole prior to beginning solider pile installation and immediately prior to placing concrete masonry in the hole around the solider pile. If necessary, place up to 2 feet of concrete at the bottom of the hole to assist in aligning the soldier pile. Block or clamp the soldier pile in place at the ground surface before placing concrete.

For holes drilled or excavated without slurry, the department will allow the contractor to place concrete by free-falling the concrete from the ground surface down the shaft around the soldier pile. If temporary casing is used, begin placement of the concrete before removing the casing. Remove the casing while the concrete remains workable. For holes drilled or excavated using slurry, place concrete using a tremie method from the bottom of the shaft. Withdraw the tremie pipe slowly as the level of concrete rises in the shaft and never let the level of the tremie pipe outlet exceed the height of the slurry.

D Measurement

The department will measure Concrete Masonry Soldier Pile Footings by the cubic yard, acceptably completed. The department will only include material within the limits and in the locations the plans show.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.4005	Concrete Masonry Soldier Pile Footings	CY

Payment is full compensation for furnishing all materials, pumping, placing, QMP testing, finishing, curing, and protecting installation of soldier piles.

BOS (20211104)

157. Backfill Controlled Low Strength UPRR, Item SPV.0035.4010.

A Description

This special provision describes furnishing and placing a controlled low strength material designed for use as fill for the abandonment of culverts or pipes within UPRR right-of-way.

B Materials

Provide controlled low strength backfill that consists of a designed cementitious mixture of sound natural or processed materials. Allowable materials include natural sand, natural gravel, produced sand, foundry sand, produced gravel, fly ash, water and Portland cement. The designed mixture shall be self-leveling allowing adequate flowability without segregation of aggregates and shall be free of shrinkage after hardening. Design the mixture to reach a state of hardening via loss of moisture before casting successive lifts such that it can support foot traffic without indenting more than 2 inches in approximately 1 hour. Provide a mixture that also meets the following requirements.

Test	Method	Value
Flow (inch)	ASTM D-5971	9 min
Compressive	ASTM D-6024	50 min. @ 1 hour
Strength (psi)		300 @ 28 days

Chemical admixtures to control air content and setting time are allowable. Thirty (30) calendar days prior to placement, furnish the engineer and the UPRR engineer with a design mix detailing all components and their proportions in the mix. Also, provide documentation from the supplier of the industrial byproducts that the foundry sand and fly ash used in the mixture meet the requirements for Industrial Byproducts Categories 1, 2, 3, or 4 in NR 538 of the Wisconsin Administrative Code for use as a confined geotechnical fill.

C Construction

Access from off of UPRR right-of-way, if possible, to abandon pipes or culverts. For abandoned pipes or culverts with a depth greater than 3 feet, place controlled low strength backfill in lifts. Place any controlled low strength backfill in lifts no taller than 3 feet at the locations and to the lines and grades as shown on the plan. Do not place additional layers until the CLSM has lost sufficient moisture. Proportion and mix materials to produce a product of consistent texture and flow characteristics. The engineer or UPRR engineer may reject any materials exhibiting a substantial change in properties, appearance, or composition. Verify no voids are present after filling abandoned structures.

If the official Weather Bureau forecast for the construction site predicts temperatures at or below freezing within the next 24 hours after placement of controlled low strength backfill, protect the placed materials from freezing during that time period. If the temperature is not forecast to rise above 40º F for 72 hours after placement, the engineer or UPRR engineer may require protection from freezing for up to 72 hours.

No controlled low strength backfill shall be allowed to enter any stream, lake, or sewer system. The contractor shall be responsible for any clean up or remediation costs resulting from such occurrences.

D Measurement

The department will measure Backfill Controlled Low Strength UPRR in volume by the cubic yard of material, placed and accepted. Such volume shall be computed from actual measurements of the dimensions of the area to be backfilled. In irregular or inaccessible areas, the engineer may allow volume to be determined by other appropriate methods.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.4010	Backfill Controlled Low Strength UPRR	CY

Payment is full compensation for designing the mix; supplying all materials; preparing the proportioned mix; hauling it to the construction site; placing the material; and protecting it from freezing.

158. Concrete Masonry Bridges UPRR, Item SPV.0035.4020.

This special provision describes constructing concrete parts of the UPRR bridge B-40-921. Conform to standard spec 502, as modified in this special provision.

Supplement standard spec 502.2.1 (1) with the following:

(1A) Type 1 cement is specified for construction of the Union Pacific Railroad bridge over I-43. UPRR has indicated on past WisDOT projects that Type 1L cement is not an acceptable alternative for structural concrete.

Modify the standard spec as follows:

502.5.1 General

Replace paragraph one with the following:

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.4020	Concrete Masonry Bridges UPRR	CY

159. Truck Entering Warning System, Item SPV.0045.1001.

A Description

This special provision describes furnishing, installing, integrating, calibrating, making functional, and maintaining a Truck Entering Warning System to provide advance warning of construction vehicles merging into the traffic stream. The warning system must be functional at all times for the respective work zone is in use.

This system will include one solar powered flashing beacon sign (FBS) with a static traffic control sign, a wireless sensor system to detect construction vehicle traffic as it is about to merge into the traffic stream, and communications between the sensor and the FBS that will activate the sign upon detection of a merging construction vehicle.

B Materials

B.1 Traffic Detection System

Provide a Traffic Detection System that is non-intrusive to the roadway pavement. Locate the portable traffic sensor(s) (PTS) to provide a maximum 5 second delay, or other time as directed by the engineer, between the construction vehicle reaching the access point and trigger the FBS beacon activation.

B.2 Static Traffic Control Signs with Temporary Flashing Beacon Signs (FBS)

Provide static traffic control signs conforming to standard spec 643 and Standard Sign Plate W8-77. Provide temporary FBS conforming to the standard spec 658.2.2, Traffic Signal Faces.

B.3 Automated System Manager (ASM)

Provide an ASM that assesses current detector data captured by the traffic detection system that activates/deactivates the FBS based on work zone vehicle truck locations.

B.4 System Communications

Ensure Truck Entering Warning System communications meet the following requirements:

1. Perform required configuration of the Truck Entering Warning System's communication system automatically during system initialization.
2. Communication between the server and the FBS or PTS are independent throughout the full range of deployed locations, and do not rely upon communications with any other FBS or PTS.
3. Incorporate an error detection/correction mechanism into the Truck Entering Warning System to ensure the integrity of all traffic condition data and motorist information messages.
4. All communications systems within this system shall be certified to be compliant with all pertinent F.C.C. regulations.

B.5 System Acceptance

Submit vendor verification to the engineer 14 calendar days before the pre-construction meeting that the system will adequately perform the functions specified in this special provision. Adequate verification includes past successful use of the system by other agencies, and/or demonstration of the system.

Provide contact information for a designated representative responsible for monitoring the performance of the system and for making modifications to the operational settings as the engineer directs.

Provide all testing and calibration equipment.

C Construction

C.1 General

Install and reposition Truck Entering Warning System per plan or as the engineer directs. FBS are typically located 1500' in advance of the truck merging location. Quantity and location of the detectors shall be determined by the contractor.

Provide technical personnel for all system calibration, operation, maintenance, and timely on-call support services.

Promptly correct the system within 24 hours of becoming aware of a deficiency in the operation or individual part of the system. A minimum of three days before deployment, place the Truck Entering Warning System and demonstrate to the department that the Truck Entering Warning System is operational.

Maintain the Truck Entering Warning System for the duration identified in the plan. Ensure the system operates continuously during work hours throughout the duration of the project.

Remove the system upon completion.

C.2 Meetings

Attend mandatory in-person/virtual pre-construction meetings with the department. Attend additional meetings as deemed necessary by the department. These meetings may be held in person or via teleconference, as scheduled by the department.

C.3 Programming

C.3.1 General

Program the Truck Entering Warning System to ensure the following general operations are performed:

1. Provide a password protected login to the ASM and all other databases.
2. Ensure the system autonomously restarts in case of any power failure.

C.3.2 System Operations Strategy

Arrange for the vendor/manufacturer to coordinate system operation, detection, and trends/thresholds with the engineer.

FBS shall be activated to give approaching traffic adequate advance warning and be activated throughout the vehicles entrance onto the highway.

C.4 Calibration and Testing

At the beginning of the project and monthly throughout the duration of the project, perform a successful field test and calibration to verify the system is accurately detecting trucks entering the highway and accurately relaying the information to the ASM and FBS.

Send email of successful calibration and testing to the engineer.

D Measurement

The department will measure Truck Entering Warning System by the day, acceptably completed, measured as each complete system per access location.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV 0045.1001	Truck Entering Warning System	DAY

Payment is full compensation for providing, repositioning, operating, maintaining, monitoring, calibrating, testing, and removing the complete system consisting of FBS, PTS, ASM, and system communications.

Failure to correct a deficiency to the FBS, PTS, or ASM within 24 hours after notification from the engineer or the department will result in a one-day deduction of the measured quantity for each day in which the deficiency is not corrected.

It is the engineer's sole discretion to assess the deductions for an improperly working Truck Entering Warning System.

160. Combination Work Zone Digital Speed Limit – Speed Feedback Sign Trailer, Item SPV.0045.1002.

A Description

This special provision describes furnishing, installing, repositioning, operating, maintaining, monitoring, calibrating, testing and removing a combination work zone digital speed limit – speed feedback (WZDSL-SF) trailer as the engineer directs.

B Materials

Furnish items from the department's approved proprietary products list.

B.1 Automated System Manager (ASM)

Provide an ASM that assesses current traffic data captured by the traffic sensors and displays appropriate speeds/messages to the motorists through the speed feedback sign based on predetermined speed thresholds.

C Construction

C.1 General

The digital speed limit shall be continuously displayed. All speeds displayed must be approved by the engineer.

There shall not be any conflicting speed limits displayed throughout the project limits.

The contractor will be responsible for coordinating with the engineer when the Work Zone Speed Limits are to be changed.

Place WZDSL-SF trailer within the project limits as the engineer directs. Move the WZDSL-SF trailer to a new location within the project limits every 21 days, or as the engineer directs.

Placement of WZDSL-SF signs shall be on the right side of the road unless infeasible or as directed by the engineer. Placement of signs shall not interfere with the function of existing signs or roadside devices.

Provide technical personnel for all system calibration, operation, maintenance, and timely on-call support services.

Upon notification of a deficiency in the operation of the system, or individual part of the system, corrections to the system must be made within 24 hours.

Maintain the WZDSL-SF trailer for the duration of the project or as directed by the engineer. Ensure the system operates continuously (24 hours, 7 days a week) throughout the duration of the project.

Remove WZDSL-SF once the project is completed.

C.2 Reports

Provide an electronic copy via email of all data to the engineer in the form of a weekly summary report that includes, at a minimum, speed data, the dates/times and locations of the speed limit changes along with their corresponding speed values. The reports shall also include the speed data in either 1 minute, 5 minute or 15 minutes bins, as directed by the engineer.

C.3 Meetings

Attend mandatory in-person/virtual pre-construction meetings with the department. Additional meetings with the department may be required on a periodic basis. These meetings may be held in person or virtually, as scheduled by the department.

C.4 Programming

C.4.1 General

Program the WZDSL-SF to ensure that the following general operations are performed:

1. Provide a password protected login to the ASM, website and all other databases.
2. Provide real-time data from the ASM to a website and refresh every 60 seconds. The website should have a full-color mapping feature. Data on the website should be available to the department staff at all times for the duration of the work zone activity and should include:
    - Vehicle speeds
    - Dates and Times of Speed Limit Changes
    - Device locations
3. Archive all traffic data in a Microsoft excel format with date and time stamps.
4. Configure the website to quantify system failures which includes traffic sensor malfunction, loss of power, low battery, etc.
5. Ensure the device autonomously restarts in case of any power failure.
6. Provide the department access to manually override the WZDSL-SF trailer for a user-specified duration. Document all override messages.
7. The WZDSL-SF trailer and it’s remote management software shall be able to provide a real-time API feed (updated at least once a minute with any new information) conforming to the latest

version of the FHWA's Work Zone Data Exchange (WZDx) (https://www.transportation.gov/data/wzdx) format as well as make the feed publicly available to any Agency-approved third parties. This feed shall include the following elements (at a minimum); Device Name, Device Position, Current Display Message and Device Status (on/offline) when the WZDSL-SF has an ACTIVE display message posted. The feed should also include the <Road_Name>, <Road_Direction>, <Mile_Marker> when possible, when on Interstate and State Highway routes.

8. A Waze compatible data push should also be provided, to allow the WZDSL-SF to be auto-located as an ON_ROAD_CONSTRUCTION (hardhat icon) alert with the following associated description (<40 characters) "WORK ZONE SPEED LIMIT - XX MPH", where XX is automatically populated with the current speed display value. The WZDSL-SF location feeds shall include all active devices. The event location shall be updated at least once a minute, if the device changes position. The event shall be removed when the Display is Blank. Waze events shall be visible on Waze web map and on smartphones generate a driver alert for an approaching motorist actively using the Waze app with notifications activated.

C.4.2 System Operation

Speed Feedback Conditions: The Speed Feedback Display shall provide the following four feedback displays depending on the speed of each approaching vehicle.

Feedback Condition 1: If an approaching vehicle is </= Posted Speed (on the above WZDSL) + 4 mph, then the display shall show the approaching vehicle's speed in large bold font visible from at least 750 feet away.

Feedback Condition 2: If an approaching vehicle is 5 to 9 mph > Posted Speed (on the above WZDSL), then the display shall Flash the approaching vehicle's speed in large bold font visible from at least 750 feet away. The flash rate shall be 5 cycles per second (0.1 second ON and 0.1 second OFF).

Feedback Condition 3: If an approaching vehicle is 10 to 14 mph > Posted Speed (on the above WZDSL), then the display shall alternate flashing the approaching vehicle's speed and the words "SLOW" and "DOWN" on three separate frames in large bold font visible from at least 750 feet away. In addition, the display shall provide 4 beacons in the four corners of the display that rapid flash. There shall be an option to activate or deactivate the beacons based on agency preference/practice. The flash rate of the numbers and words shall be 5 cycles per second (0.1 second ON and 0.1 second OFF) and the flash rate of the beacons (below) is 10 cycles per second.

Feedback Condition 4: If an approaching vehicle is 15 mph > Posted Speed (on the above WZDSL), then the display shall alternate flashing the words "SLOW" and "DOWN" on two separate frames in large bold font visible from at least 750 feet away. In addition, the display shall provide 4 beacons in the four corners of the display that rapid flash. There shall be an option to activate or deactivate the beacons based on agency preference/practice. The flash rate of the words shall be 5 cycles per second (0.1 second ON and 0.1 second OFF) and the flash rate of the beacons (below) is 10 cycles per second.

C.5 Calibration and Testing

Perform a successful field test and calibration at the WZDSL-SF trailer location to verify the system is detecting accurate vehicle speeds and accurately relaying the information to the ASM and then to the speed feedback sign at the beginning of the project.

Send email of successful calibration and testing to the engineer.

D Measurement

The department will measure each WZDSL-SF per day.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0045.1002	Combination Work Zone Digital Speed Limit – Speed Feedback Trailer	DAY

Payment is full compensation for furnishing, installing, repositioning, operating, maintaining, monitoring, calibrating, testing, and removing the WZDSL-SF trailer.

Failure to correct a deficiency within 24 hours after notification from the engineer or the department will result in a one day deduction of the measured quantity for each day in which the deficiency is not corrected.

Failure to correct the website within 24 hours after notification from the engineer will result in a 10% reduction of the day quantity for each day the website is down.

It is the engineer's sole discretion to assess the deductions for an improperly working WZDSL-SF trailer.

161. Survey Project 1229-04-71, Item SPV.0060.0001; Survey Project 1229-04-72, Item SPV.0060.0002; Survey Project 1229-04-73, Item SPV.0060.0003; Survey Project 1229-04-77, Item SPV.0060.0004.

A Description

This special provision describes modifying standard spec 105.6 and 650 to define the requirements for construction staking for this contract. Conform to standard spec 105.6 and 650 and as follows.

The department will not perform any construction staking for this contract. Obtain engineer's approval before performing all survey required to lay out and construct the work under this contract.

Replace standard spec 650.1 with the following:

This section describes the contractor-performed construction staking required under individual contract bid items to establish the horizontal and vertical position for all aspects of construction including, but not limited to:

- storm sewer
- subgrade
- base
- curb
- gutter
- curb and gutter
- curb ramps
- pipe culverts
- drainage structures
- structure layout
- bridges
- noise barriers
- all retaining wall layout
- pavement
- pavement markings (temporary and permanent)
- barriers (temporary and permanent)
- overhead signs
- ramp and local street lighting
- electrical installations
- supplemental control
- slope stakes
- ponds
- traffic signals
- ITS
- FTMS
- parking lots
- paths
- utilities
- conduit
- water main

- sanitary sewer
- traffic control items
- fencing

B (Vacant)

C Construction

Add the following to standard spec 650.3.1 (5):

Confirm with engineer before using global positioning methods to establish the following:

1. Structure layout horizontal or vertical locations.
2. Concrete pavement vertical locations.
3. Curb, gutter, and curb and gutter vertical locations.
4. Concrete barrier vertical locations.
5. Storm Sewer layout horizontal or vertical locations, including structure centers, offsets, access openings, rim and invert elevations.

Replace standard spec 650.3.1.1(2) with the following:

Maintain neat, orderly, and complete survey notes, drawings, and computations used in establishing the lines and grades. This includes:

- Raw data files
- Digital stakeout reports
- Control check reports
- Supplemental control files (along with method used to establish coordinates and elevation)
- Calibration report

Replace standard spec 650.3.3.1 with the following:

Under the Survey Project bid item, global positioning system (GPS) machine guidance for conventional subgrade staking on all or part of the work may be substituted. The engineer may require reverting to conventional subgrade staking methods for all or part of the work at any point during construction if the GPS machine guidance is producing unacceptable results.

Replace standard spec 650.3.3.3.4.1 with the following:

The department will provide the contractor staking packet as described in the Construction and Materials Manual (CMM) 7.10. At any time after the contract is awarded, the available survey and design information may be requested. The department will provide that information within 5 business days of receiving the contractor's request. The department incurs no additional liability beyond that specified in standard spec 105.6 or standard spec 650 by having provided this additional information.

Add the following to standard spec 650.3.3.3.6.2 as paragraph four:

Record all subgrade elevation checks and submit a hard copy to the engineer within 24 hours or as requested by the engineer.

D Measurement

Replace standard spec 650.4 with the following:

The department will measure Survey Project (Project ID) as a separate single each unit, acceptably completed.

E Payment

Replace standard spec 650.5 with the following:

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0001	Survey Project 1229-04-71	EACH
SPV.0060.0002	Survey Project 1229-04-72	EACH
SPV.0060.0003	Survey Project 1229-04-73	EACH
SPV.0060.0004	Survey Project 1229-04-77	EACH

Payment is full compensation for performing all survey work required to lay out and construct all work under this contract and for adjusting stakes to ensure compatibility with existing field conditions. The department will not make final payment for this item until the contractor submits all survey notes and computations used to establish the required lines and grades to the engineer. Submit all notes and computations within 24 hours of completing this work. Re-staking due to construction disturbance and knock-outs will be performed at no additional cost to the department.

sef-650-005 (20181219)

162. Maintain and Remove Crash Cushions Temporary Left In Place, Item SPV.0060.0020.

A Description

This special provision describes maintaining and removing temporary precast concrete barrier left in place according to standard spec 603 and as hereinafter provided.

B (Vacant)

C Construction

Maintain the temporary precast concrete barrier left in place, including but not limited to replacing unacceptable concrete barrier, replacing damaged concrete barrier, and repositioning displaced concrete barrier.

Remove the temporary precast concrete barrier left in place according to standard spec 603.3.2 after it is no longer of use to the project.

D Measurement

The department will measure Maintain and Remove Temporary Precast Concrete Barrier Left In Place by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0020	Maintain and Remove Temporary Precast Concrete Barrier Left In Place	LF

Payment is full compensation for maintain temporary precast concrete barrier left in place for the duration of its use on the project and for removing temporary precast concrete barrier left in place at the completion of the project or when it is no longer of use with the project.

163. Concrete Barrier Transition Type G1, Item SPV.0060.0030; Concrete Barrier Transition Type G2, Item SPV.0060.0031; Concrete Barrier Transition Type G3, Item SPV.0060.0032; Concrete Barrier Transition Type G4, Item SPV.0060.0033; Concrete Barrier Transition Type M1, Item SPV.0060.0034; Concrete Barrier Transition Type M2, Item SPV.0060.0035; Concrete Barrier Transition Type S1, Item SPV.0060.0036; Concrete Barrier Transition Special Type S42 to S56, Item SPV.0060.0037.

A Description

This special provision describes constructing Concrete Barrier Transition (Type) according to standard spec 603, details shown in the plans, and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Concrete Barrier Transition (Type) by each individual unit, acceptably placed according to the contract.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0030	Concrete Barrier Transition Type G1	EACH
SPV.0060.0031	Concrete Barrier Transition Type G2	EACH
SPV.0060.0032	Concrete Barrier Transition Type G3	EACH
SPV.0060.0033	Concrete Barrier Transition Type G4	EACH
SPV.0060.0034	Concrete Barrier Transition Type M1	EACH
SPV.0060.0035	Concrete Barrier Transition Type M2	EACH
SPV.0060.0036	Concrete Barrier Transition Type S1	EACH
SPV.0060.0037	Concrete Barrier Transition Special Type S42 to S56	EACH

Payment is full compensation for constructing Concrete Barrier Transition (Type).

164. Coring Concrete Wingwall, Item SPV.0060.0100.

A Description

This special provision describes cutting or coring concrete pipe into an existing wing wall to allow the connection of a 54-inch RCP pipe (from the north) and a 36-inch RCP pipe (from the south) to drain through the existing wingwall that is part of Structure B-40-23, as the plans show for the temporary condition and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Coring Concrete Wingwall as each individual unit, acceptably completed by the unit.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0100	Coring Concrete Wingwall	EACH

Payment is full compensation for mobilizing, set up, sawing/coring, removing and disposing of all loose or spalled concrete.

165. Temporary Concrete Barrier Gate, 24-FT, Item SPV.0060.0105.

A Description

Furnish and install a Temporary Concrete Barrier Gate and remove upon completion.

B Materials

Furnish a Temporary Concrete Barrier Gate and all necessary hardware and materials to install the gate. The gate system shall be able to meet the recommended structural adequacy, occupant risk, and vehicle trajectory criteria set forth in the National Cooperative Highway Research Program Report (NCHRP) 350 for Test Level 3 for Longitudinal Barriers. The gate shall be capable of preventing vehicle penetration, vaulting, and underriding during Test Level 3 Length of Need with Transition (TL-3 LON/T) impacts and shall smoothly redirect the vehicle. The gate system shall be able to span a 24-foot minimum gap in concrete barrier. The gate system shall fasten only to the temporary concrete barrier wall. The gate system shall be able to be opened completely within 5 minutes once the moving process begins. The gate shall be able to be opened both by pivoting the gate on a hinge and by completely disconnecting the gate from the barrier wall and rolling it parallel to the temporary barrier wall. Tools and materials required to open the gate system must be physically fastened to, or stored within, the gate system in such a way that prevents such tools and materials from becoming hazards during a crash. Tools and material must be accessible and usable immediately upon need.

C Construction

Install the gate system according to manufacturer's recommendations at contract-identified locations or as the engineer directs. Move and reinstall the gate system as required for contract staging. Ensure that the gap between the traffic face of temporary barrier and the traffic face of the gate transition is to be less than ¼ of an inch. If manufacturer allows, the contractor may bolt thrie beam and thrie beam terminal connector to concrete barrier and the gate transition to bridge the gap in concrete barrier. Provide and maintain the gates throughout the duration of the project. Repair any damage to the gates within 48 hours. Once the gate is installed, a tutorial shall be given to WisDOT and law enforcement at a time determined by the engineer. Upon completion of the work, remove the gate system and properly dispose of all materials.

D Measurement

The department will measure Temporary Concrete Barrier Gate as each individual gate system, acceptably completed. The department will not make additional measurements for Temporary Concrete Barrier Gate if damaged during construction, including damage due to vehicular hits.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0105	Temporary Concrete Barrier Gate 24-FT	EACH

Payment is full compensation for providing, installing, maintaining, and removing the gate system.work.

166. Inlets Type Tee Special, Item SPV.0060.0106.

A Description

This special provision describes furnishing and installing inlets according to the pertinent provisions of standard spec 611, as shown on the plans and as hereinafter provided.

B Materials

Conform to standard spec 611.2.

C Construction

Construct Inlets Type Tee Special to the dimensions specified in the plans.

D Measurement

The department will measure Inlets Type Tee Special as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.106	Inlets Type Tee Special	EACH

Payment is full compensation for providing all materials, including all masonry for chimney and pipe, sewer connections, steps and other fittings; for all excavating, backfilling, disposing of surplus material, and for cleaning out and restoring the work site; for all covers, including frames, grates and lids; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

(NER441-20150117)

167. Temporary Storm Sewer Plug, Item SPV.0060.0107.

A Description

Install a Storm Sewer Plug at locations specified in the plans

B Materials

Provide a precast reinforced concrete plug or an engineer approved alternative, conforming to the inside diameter of the corresponding pipe as shown on the plan.

All materials, if concrete, must conform to standard spec 501 and standard spec 611.

C Construction

Place a watertight plug in the end of the storm sewer pipe in a manner that seals the pipe but allows for future removal of plug without damaging the storm sewer pipe.

D Measurement

The department will measure Storm Sewer Plug as each individual unit acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0107	Storm Sewer Plug	EACH

Payment is full compensation for furnishing and installing all required materials and removal in subsequent stage.

168. Structural Concrete Collar, Item SPV.0060.0108.

A Description

This special provision describes structural concrete collar for storm sewer pipes to structure connections at locations shown on the plans.

B Materials

Furnish concrete for structural concrete collar conforming to standard spec 520.2.4.

Furnish mortar for structural concrete collar conforming to standard spec 611.2 (1).

C Construction

Construct structural concrete collars at the locations and extents as shown in the plans. Construct and place structural concrete collars as specified in the plans and conforming to standard spec 611 and 608.

Ensure structural concrete collar creates a water tight seal between pipe and structure.

D Measurement

The department will measure Structural Concrete Collar by the each, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0108	Structural Concrete Collar	EACH

Payment is full compensation for installing and providing all materials necessary to complete the work.

169. Reconnect Storm Sewer, Item SPV.0060.0110.

A Description

This special provision describes connecting proposed storm sewer pipe/structures to existing storm sewer pipe/structures or proposed pipe/structures.

B Materials

Use concrete masonry for concrete collar conforming to standard spec 520.2.4.

Furnish storm sewer pipe according to standard spec 608.2

C Construction

Remove existing concrete collars, pipe seals or end walls constructed under previous projects or in earlier stages of this project as necessary to reconnect storm sewer. Ensure that positive drainage is achieved when connecting proposed pipe to existing structures or storm sewer. Salvage any structurally sound pipe that requires removal if prior approval is granted by the engineer. Make all necessary connections using the appropriate coupling, concrete collar, or by means approved by the engineer.

D Measurement

The department will measure Reconnect Storm Sewer as each location as specified in the plans, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0110	Reconnect Storm Sewer	EACH

Payment is full compensation for performing all work, removing seals, end walls and concrete collars, providing all materials, coring, couplings, concrete collars. Any additional pipe or materials required to reconnect the storm sewer shall be considered incidental to this bid item.

170. Mobilizations Emergency Pavement Repair, Item SPV.0060.0120.

A Description

This special provision describes furnishing and mobilizing personnel, equipment, traffic control, and materials to the project site to repair the existing pavement for emergencies as the engineer directs. An emergency is a sudden occurrence of a serious and urgent nature, beyond normal maintenance of the existing pavement.

B (Vacant)

C Construction

Mobilize with sufficient personnel, equipment, traffic control, materials, and incidentals on the jobsite within 4 hours of the engineer's written order to repair the existing pavement on an emergency basis.

D Measurement

The department will measure Mobilizations Emergency Pavement Repair as each individual mobilization, acceptably completed. The department will not include delivering and installing pavement repair or maintenance materials provided for in specific contract bid items. All traffic control items used for each Mobilization will be considered incidental to the Mobilization.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0120	Mobilizations Emergency Pavement Repair	EACH

Payment is full compensation for the staged moving of personnel, moving equipment, setting up and removing traffic control, traffic control materials, and moving materials. The department will pay separately for delivery and installation of pavement repair materials under the other bid items in this contract. The department will not pay separately for traffic control items and materials even though they may be included in other bid items in this contract and will consider them incidental to each Mobilization.

sef-999-025 (20170310)

171. Section Corner Monuments Special, Item SPV.0060.0125.

A Description

Coordinate with Southeastern Wisconsin Regional Planning Commission (SEWRPC) for the perpetuation and replacement of section corner (Public Land Survey System- PLSS) monuments.

Contact the engineer and SEWRPC Chief Surveyor, Rob Merry, at the contact information in this special provision at least two weeks prior to work near any section corner monument.

B Materials

SEWRPC will provide a pre-cast concrete monument or brass disk to be used to mark the PLSS corner.

Furnish base aggregate dense materials conforming to standard spec 305 and concrete, asphalt, topsoil or other materials depending on the surface surrounding the corner.

C Construction

SEWRPC will perpetuate existing section corner monument. The contractor is responsible to coordinate with SEWRPC and the WisDOT Project Manager throughout the perpetuation and replacement process. The engineer will contact SEWRPC at (262) 953-4295 at least two weeks before starting construction operations or the preconstruction meeting to allow for section corner monument perpetuation.

Excavate and completely remove the existing monument. Backfill hole where existing monument was removed. Coordinate the materials and methodology to complete the construction of the surface surrounding the monument. This may include, but is not limited to, a 2-Foot x 2-Foot “box out” or 24-Inch diameter core hole in concrete, asphalt pavement/paving rings, coring to facilitate poured in place monuments, topsoil, seed and mulching or other materials or methodologies as agreed to by SEWRPC.

Contact Information:

Attn: Rob Merry
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53187-1607
Phone (262) 953-4289
Cell (920) 912-1036
Fax (262) 547-1103
E-mail: rmerry@sewrpc.org

Jon Edgren (Public Works Director/Highway Commissioner)
Ozaukee County Highway Department
410 S. Spring Street
P.O. Box 994
Port Washington, WI 53074-0994
Phone: (262) 284-8331
jedgren@co.ozaukee.wi.us

D Measurement

The department will measure Section Corner Monuments Special by the individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0125	Section Corner Monuments Special	EACH

Payment is full compensation for all excavating; removal of existing monument, for placing and compacting backfill material; for disposing of surplus materials; for concrete or asphalt material, finishing of roadway or other surfaces and for all coordination with SEWRPC.

172. Salvage and Reinstall Ramp Gate 24-Foot, Item SPV.0060.0130; Salvage and Reinstall Ramp Gate 28-Foot, Item SPV.0060.0131; Salvage and Reinstall Ramp Gate 32-Foot, Item SPV.0060.0132; Salvage and Reinstall Ramp Gate 37-Foot, Item SPV.0060.0133.

A Description

This special provision describes salvaging and reinstalling an existing ramp gate assembly, which includes removing the existing pole assembly; removing existing concrete base; storing until it is installed on a new base; constructing new Concrete Base Type 5 base; and making all reconnections.

B Materials

Furnish galvanized steel nuts and bolts conforming to ASTM A307 except where designated as high strength (HS), conform to ASTM A325.

C Construction

Salvage, store, protect and reinstall the ramp closure gate at the location the plans show. Avoid damaging the gate pole assembly, as it will be reused. Do not use any equipment or devices that might damage structures, facilities, or property to be preserved and retained. Complete all operations necessary to remove ramp closure gates that might endanger the new construction before constructing new work.

Construct concrete base according to the standard detail drawing for Concrete Bases Type 5.

Apply marine grade anti seize compound to all bolt threads and to the interface between the aluminum base and steel pole. The engineer may direct adjustment of the gate arm assembly to ensure the correct vertical and angular orientation of the completed closure gate.

The engineer may allow alternates equal to specified manufactured components. The engineer may require plan detail modifications to accommodate alternates. The engineer may accept alternate arms or mounting adaptors only if the contractor can demonstrate that the department can easily remove and replace the arms.

D Measurement

The department will measure Salvage and Reinstall Ramp Gate (size) by each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0130	Salvage and Reinstall Ramp Gate 24-Foot	EACH
SPV.0060.0131	Salvage and Reinstall Ramp Gate 28-Foot	EACH
SPV.0060.0132	Salvage and Reinstall Ramp Gate 32-Foot	EACH
SPV.0060.0133	Salvage and Reinstall Ramp Gate 37-Foot	EACH

Payment is full compensation for disassembly of the existing unit as needed; for removing existing concrete base, for storing of the unit, for constructing new concrete base, for reassembly on a new location; for providing all electrical connections and grounding; and for all testing.

173. Crack and Damage Survey Single or Double Residential Unit, Item SPV.0060.0140; Crack and Damage Survey Multi-Unit Residential, Item SPV.0060.0141; Crack and Damage Survey Commercial, Public, or Industrial, Item SPV.0060.0142.

A Description

This special provision describes conducting a pre and post crack and damage survey of the residences and business and identifies the contractor’s responsibilities for surveying, documenting, and monitoring the properties listed below:

Address	Type Indicate as one of the following: Single or Double Unit Residential, Multi-Unit Residential, or Commercial, Public, or Industrial	Historic Registry Listing (Yes or No)
740 W Good Hope Road, River Hills, WI 53217	Single or Double Unit Residential	No
760 W Good Hope Road, River Hills, WI 53217	Single or Double Unit Residential	No
400 W Brown Deer Road, Bayside, WI 53217	Commercial, Public, or Industrial	No
500 W Brown Deer Road, Bayside, WI 53217	Commercial, Public, or Industrial	No
501 W Brown Deer Road, Bayside, WI 53217	Commercial, Public, or Industrial	No
505 W Brown Deer Road, Bayside, WI 53217	Commercial, Public, or Industrial	No
6373 N Jean Nicolet Road, Glendale, WI 53217	Commercial, Public, or Industrial	No
6655 N Jean Nicolet Road, Glendale, WI 53217	Single or Double Unit Residential	Yes
6204 N Port Washington Road, Milwaukee WI, 53217	Commercial, Public, or Industrial	No
6240 N Port Washington Road, Glendale WI, 53217	Commercial, Public, or Industrial	No
6250 N Port Washington Road, Glendale WI, 53217	Commercial, Public, or Industrial	No
6300 N Port Washington Road, Glendale WI, 53217	Commercial, Public, or Industrial	No
6745 N Port Washington Road, Glendale, WI 53217	Commercial, Public, or Industrial	No
6815 N Port Washington Road, Unit A, Glendale, WI 53217	Commercial, Public, or Industrial	No
6815 N Port Washington Road, Unit B, Glendale, WI 53217	Commercial, Public, or Industrial	No
6825 N Port Washington Road, Glendale, WI 53217	Commercial, Public, or Industrial	No
6969 N Port Washington Road, Building A, Glendale, WI 53217	Commercial, Public, or Industrial	No
6969 N Port Washington Road, Building B, Glendale, WI 53217	Commercial, Public, or Industrial	No
6969 N Port Washington Road, Building C, Glendale, WI 53217	Commercial, Public, or Industrial	No
6969 N Port Washington Road, Glendale, WI 53217	Commercial, Public, or Industrial	No
7003 N Port Washington Road, Glendale, WI 53217	Commercial, Public, or Industrial	No
7035 N Port Washington Road, Glendale, WI 53217	Commercial, Public, or Industrial	No
7139 N Port Washington Road, Glendale, WI 53217	Commercial, Public, or Industrial	No
7155 N Port Washington Road, Glendale, WI 53217	Commercial, Public, or Industrial	No
7161 N Port Washington Road, Glendale, WI 53217	Commercial, Public, or Industrial	No
7177 N Port Washington Road, Glendale, WI 53217	Commercial, Public, or Industrial	No

Address	Type Indicate as one of the following: Single or Double Unit Residential, Multi-Unit Residential, or Commercial, Public, or Industrial	Historic Registry Listing (Yes or No)
7195 N Port Washington Road, Glendale, WI 53217	Commercial, Public, or Industrial	No
7275 N Port Washington Road, Glendale, WI 53217 Building #1	Multi-Unit Residential	No
7280 N Port Washington Road, Glendale, WI 53217 Building #6	Multi-Unit Residential	No
7307 N Port Washington Road, Glendale, WI 53217	Multi-Unit Residential	No
7325 N Port Washington Road, Glendale, WI 53217	Multi-Unit Residential	No
7355 N Port Washington Road, Glendale, WI 53217	Single or Double Unit Residential	No
8617 N Port Washington Road, Fox Point, WI 53217	Commercial, Public, or Industrial	No
8969 N Port Washington Road, Bayside, WI 53217	Commercial, Public, or Industrial	No
400 W Bender Rd, Milwaukee, WI 53217	Commercial, Public, or Industrial	Yes
215 W Brentwood Lane, Glendale, WI 53217	Single or Double Unit Residential	No
221 W Brentwood Lane, Glendale, WI 53217	Single or Double Unit Residential	No
229 W Brentwood Lane, Glendale, WI 53217	Single or Double Unit Residential	No
301 W Brentwood Lane, Glendale, WI 53217	Single or Double Unit Residential	No
312 W Brentwood Lane, Glendale, WI 53217	Single or Double Unit Residential	No
400 W Brentwood Lane, Glendale, WI 53217	Single or Double Unit Residential	Yes
401 W Brentwood Lane, Glendale, WI 53217	Single or Double Unit Residential	Yes
304 W Clovernook Lane, Glendale, WI 53217	Single or Double Unit Residential	No
305 W Clovernook Lane, Glendale, WI 53217	Single or Double Unit Residential	No
406 W Clovernook Lane, Glendale, WI 53217	Single or Double Unit Residential	Yes
400 W Acacia Lane, Glendale, WI 53217	Single or Double Unit Residential	Yes
407 W Acacia Lane, Glendale, WI 53217	Single or Double Unit Residential	Yes
303 W Apple Tree Road, Glendale, WI 53217	Single or Double Unit Residential	No
304 W Apple Tree Road, Glendale, WI 53217	Single or Double Unit Residential	No
318 W Apple Tree Road, Glendale, WI 53217	Single or Double Unit Residential	No
400 W Apple Tree Road, Glendale, WI 53217	Single or Double Unit Residential	Yes
405 W Apple Tree Road, Glendale, WI 53217	Single or Double Unit Residential	Yes
420 W Apple Tree Road, Glendale, WI 53217	Single or Double Unit Residential	Yes
321 W Daphne Road, Glendale, WI 53217	Single or Double Unit Residential	No
255 W Coventry Court, Glendale, WI 53217 Building #1 (NW Building)	Multi-Unit Residential	No
255 W Coventry Court, Glendale, WI 53217 Building #2 (SW Building)	Multi-Unit Residential	No
7373 N Chadwick Road, Glendale, WI 53217	Single or Double Unit Residential	No
7383 N Chadwick Road, Glendale, WI 53217	Single or Double Unit Residential	No
7421 N Chadwick Road, Glendale, WI 53217	Single or Double Unit Residential	No

Address	Type Indicate as one of the following: Single or Double Unit Residential, Multi-Unit Residential, or Commercial, Public, or Industrial	Historic Registry Listing (Yes or No)
7443 N Chadwick Road, Glendale, WI 53217	Single or Double Unit Residential	No
7447 N Chadwick Road, Glendale, WI 53217	Single or Double Unit Residential	No
7453 N Chadwick Road, Glendale, WI 53217	Single or Double Unit Residential	No
7459 N Chadwick Road, Glendale, WI 53217	Single or Double Unit Residential	No
7469 N Chadwick Road, Glendale, WI 53217	Single or Double Unit Residential	No
7501 N Chadwick Road, Glendale, WI 53217	Single or Double Unit Residential	No
7529 N Chadwick Road, Glendale, WI 53217	Single or Double Unit Residential	No
567 W Fransee Lane, Glendale, WI 53217	Single or Double Unit Residential	No
552 W Fransee Lane, Glendale, WI 53217	Single or Double Unit Residential	No
557 W Calumet Road, Glendale, WI 53217	Single or Double Unit Residential	No
552 W Calumet Road, Glendale, WI 53217	Single or Double Unit Residential	No
650 W Calumet Road, River Hills, WI 53217	Commercial, Public, or Industrial	No
7807 N Chadwick Court, Glendale, WI 53217	Single or Double Unit Residential	No
7815 N Chadwick Court, Glendale, WI 53217	Single or Double Unit Residential	No
545 W Saint John's Court, Glendale, WI 53217	Single or Double Unit Residential	No
550 W Saint John's Court, Glendale, WI 53217	Single or Double Unit Residential	No
558 W Luebbe Lane, Glendale, WI 53217	Single or Double Unit Residential	No
559 W Luebbe Lane, Glendale, WI 53217	Single or Double Unit Residential	No
500 W Bradley Road, Fox Point, WI 53217 Building #1	Multi-Unit Residential	No
500 W Bradley Road, Fox Point, WI 53217 Building #2	Multi-Unit Residential	No
501 W Bradley Road, Fox Point, WI 53217 Building #3	Multi-Unit Residential	No
541 W Bradley Road, Glendale, WI 53217	Single or Double Unit Residential	No
511 W Dean Court, Fox Point, WI 53217	Single or Double Unit Residential	No
513 W Dean Court, Fox Point, WI 53217	Single or Double Unit Residential	No
675 Dean Road, River Hills, WI 53217	Single or Double Unit Residential	No
8555 N Pheasant Lane, River Hills, WI 53217	Single or Double Unit Residential	No
525 W Bergen Drive, Fox Point, WI 53217	Single or Double Unit Residential	No
522 W Bergen Drive, Fox Point, WI 53217	Single or Double Unit Residential	No
9119 N White Oak Lane, Bayside, WI 53217	Multi-Unit Residential	No
865/875 W Autumn Path, Bayside, WI 53217	Single or Double Unit Residential	No
876/884 W Autumn Path, Bayside, WI 53217	Single or Double Unit Residential	No
905 W Fairy Chasm Road, Bayside, WI 53217	Multi-Unit Residential	No
1065 W Fairy Chasm Road, Bayside, WI 53217	Single or Double Unit Residential	No
8960 Lodgewood Road, River Hills, WI 53217	Single or Double Unit Residential	No
9000 Lodgewood Road, River Hills, WI 53217	Single or Double Unit Residential	No

B (Vacant)

C Construction

C.1 Pre Construction Surveys

Perform a pre-construction condition survey at the listed addresses and provide a copy of survey report(s) to the engineer a minimum of 30 calendar days prior to any vibration inducing activities. Provide a professional engineer licensed in the State of Wisconsin and experienced in evaluating structural vulnerabilities and vibration monitoring to perform the survey. Document all aspects of the external and interior structural conditions through observations, actual measurements, plan sketches, digital videos and photographs, and any other data the preparer may deem appropriate.

The survey shall include documentation of interior sub-grade and above grade accessible walls, ceilings, floors, roof, and visible exterior as viewed from the grade level. Detail (by engineering sketches, digital video, digital photographs, and notes) the existing structural, cosmetic, plumbing and electrical damage. Videos shall have a minimum resolution of 4K at 60 frames per second (fps) with extended dynamic range and video stabilization and digital photographs shall have a minimum resolution of 12 megapixels. Mark existing cracks and vulnerabilities in such a way that future observations would clearly indicate whether cracks and vulnerabilities remained unchanged, and whether cracks opened, closed, or propagated.

The contractor is responsible for arranging with the property owner the right of entry to their property, in order to engage in crack and damage surveys. Furnish the engineer with copies of all right of entry notifications and agreements.

Electronically submit a written report with the inspector's name, date of inspection, descriptions and locations of defects and vulnerabilities, and digital videos and images.

Label each digital image and video with the following information:

ID: _____
Building Address: _____
View looking: _____
Date: _____
Photographer: _____

C.1 Post Construction Surveys

Perform a post-construction crack and damage survey and analysis at the residences and businesses listed above, to determine if any structural changes are the result of the construction activity. Provide the engineer with a copy of all post construction survey reports, digital photographs and videos, and analysis documents comparing pre and post structural condition no later than 90 days after completion of vibration inducing construction operations.

Any damage resulting from excessive vibration due to the contractor's operations or claims of damage during construction is the responsibility of the contractor to resolve.

D Measurement

The department will measure Crack and Damage Survey (type) as each unit of work per address, acceptably completed. Each unit of work consists of a pre and post construction crack and damage survey.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0140	Crack and Damage Survey Single or Double Unit Residential	EACH
SPV.0060.0141	Crack and Damage Survey Multi-Unit Residential	EACH
SPV.0060.0142	Crack and Damage Survey Commercial, Public, or Industrial	EACH

Payment is full compensation for performing pre and post-construction surveys, including all documentation, analysis, written reports, digital photographs, and videos.

stp-999-010 (2020XXXX)

174. Fastening Sewer Access Covers, Item SPV.0060.0200.

A Description

This special provision describes sealing, maintaining, and removing sealant for sewer access covers.

B Materials

Furnish preformed butyl rubber based sealant conforming to ASTM C990 Section 6.2. Size the preformed joint sealant to fill the joint to 50% of its annular volume when assembled.

C Construction

Open the sewer access cover, inspect the frame and grate, and remove material that will interfere with the sealant application from the cover and casting. Apply sealant in a continuous ring around the frame without stretching. Knead the ends together with no overlap.

Monitor performance during the project and maintain as needed. Remove sealant after traffic is shifted into its final configuration.

D Measurement

The department will measure Fastening Sewer Access Covers as each individual cover, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0200	Fastening Sewer Access Covers	EACH

Payment is full compensation for providing and maintaining sealed covers; and removing sealant.

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175. Detention Pond Anti-Seep Collar, Item SPV.0060.0206.

A Description

This special provision describes furnishing and installing a corrugated metal aluminum coated collar for pond outlet pipes.

B Materials

Fabrication shall be from Type 2 aluminum coated sheet steel conforming to AASHTO M 274. The steel plate shall be 1/4-inch minimum thickness. Waterproof mastic joint sealer shall conform to standard spec 608.2.1 (2).

C Construction

Extend the collar dimensions a minimum of 1 foot vertically above the pipe and 2-1/4 feet in all other directions around the outside of the pipe or beyond the limits of the trench backfill whichever is greater, measured perpendicular to the pipe.

Seal the gap between the Detention Pond Anti-Seep Collar and the pipe according to standard spec 608.3.4 (4).

Center the Detention Pond Anti-Seep Collar in the middle of the detention pond berm as shown on the plans.

D Measurement

The department will measure Detention Pond Anti-Seep Collar by each unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0206	Detention Pond Anti-Seep Collar	EACH

Payment is full compensation for furnishing and installing the aluminum coated corrugated steel collar and all incidentals to complete the work.

176. Manhole, 10x10-FT, Item SPV.0060.0208.

A Description

This special provision describes furnishing and installing 10-FT x 10-FT box manhole.

B Materials

Furnish concrete manhole structures that are according to standard spec 501 and 611 and as shown on the plans.

C Construction

Field verify all existing connections.

Conform to standard spec 611.

D Measurement

The department will measure Manhole 10X10-FT by each unit, acceptably completed

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0208	Manhole 10X10-FT	EACH

Payment is full compensation for furnishing and installing Manhole 10X10-FT and all incidentals to complete the work.

177. Riser Pipe Grate, Item SPV.0060.0210.

A Description

This special provision describes furnishing and installing a galvanized steel pipe grate for the Manhole 5-FT Riser Pipe.

B Materials

Furnish steel conforming to the requirements of standard spec 506.2.2.1. Furnish pipe grate, angles, and brackets galvanized according to ASTM A123. Furnish required hardware galvanized according to ASTM A153.

C Construction

Embed steel adhesive anchors to a minimum depth of 5”.

Conform to standard spec 611.

D Measurement

The department will measure Riser Pipe Grate by each unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0210	Riser Pipe Grate	EACH

Payment is full compensation for furnishing and installing the Riser Pipe Grate and all incidentals to complete the work.

178. Baseline CPM Progress Schedule, Item SPV.0060.0601; Monthly CPM Progress Schedule Updates, Item SPV.0060.0602.

Replace standard spec 108.4 with the following:

108.4 Critical Path Method Progress Schedule

108.4.1 Definitions

The department defines terms used in 108.4 as follows:

Activity	An administrative or construction task performed during the course of the project with a defined duration and scheduled (or actual) start and finish dates.
Critical Path	The longest continuous chain of activities through the CPM schedule that establishes the minimum overall project duration.
Construction Activity	Construction activities are discrete work activities performed by the contractor, subcontractors, utilities, or third parties within the project limits.
CPM Progress Schedule	A Critical Path Method (CPM) Progress Schedule is a network of logically related activities. The CPM schedule calculates when activities can be performed and establishes the critical or longest continuous path or paths of activities through the project.
Float	Float, as used in this special provision, is the total float of an activity; i.e., it is the amount of time between the date when an activity can start (the early start), and the date when an activity must start (the late start). In cases where the total float of an activity has a different value when calculated based on the finish dates, the lower (more critical) value will govern.
Forecast Completion Date	The completion date predicted by the latest accepted CPM Update, which may be earlier or later than the contract completion date, depending on progress.
Fragnet	A group of logically-related activities, typically inserted into an existing CPM schedule to model a portion of the project, such as the work associated with a change order.
Initial Work Plan	The initial work plan is a time-scaled CPM schedule showing detailed activities for the first 90 calendar days of work and summary level activities for the remainder of the project.
Intermediate Milestone Date	A contractually required date for the completion of a portion of the work, so that a subsequent portion of the work or stage of traffic phasing may proceed.
Department's Project Schedule Template	The department's project schedule template for the overall IH 43 North South Freeway Program, including interim and final contract completion dates, and containing codes for use as a template for the development of the contractor's schedule.
Work Breakdown Structure (WBS)	A framework for organizing the activities that make up a project by breaking the project into successively greater detail by level. A WBS organizes the project work. It does not address the sequencing and scheduling of project activities.

108.4.2 Department's Project Schedule Template

108.4.2.1 Project Schedule

Within five business days after award, the department will provide its current Project Schedule Template, containing intermediate milestone constraints, standard activity codes, and a standard WBS for the contractor to use to develop its schedule.

108.4.2.2 Use of Project Schedule Template

The Project Schedule Template provides information to assist the contractor in preparing its schedule. The Project Schedule Template is not a contract document. The logic contained in the Project's Schedule Template is not intended to alter or supplement contract requirements for the phasing of the work, but to reflect those requirements.

108.4.3 Contractor's Scheduling Responsibilities

Prepare and submit a CPM progress schedule that accurately reflects the plan for the performance of the work, based on the physical requirements of the Work, and Traffic Phasing requirements. The CPM schedule is the contractor's committed plan to complete all work within the completion deadlines. Full responsibility is assumed for the prosecution of the work as shown. The CPM schedule is not part of the contract. Schedule the Work in the manner required to achieve the completion date and interim completion dates specified in the Prosecution and Progress Special Provision. The contractor will schedule and attend a CPM Initial Workshop. If necessary, the engineer may modify the workshop schedule to ensure attendance by the necessary department and contractor personnel; however, the CPM Initial Workshop must be completed prior to issuing the Notice to Proceed. The CPM Initial workshop will include:

1. Department presentation of the use of CPM scheduling on the project and presentation of the department's master schedule.
2. Contractor presentation of the conceptual work plan for the project.
3. Department and contractor discussion of the level of detail on features in the CPM Initial Work Plan and the Baseline CPM Progress Schedule.

Use the department-provided Project Schedule Template to develop the Initial Work Plan and the Baseline CPM Progress Schedule. Use the Project's Schedule Template ID coding structure to categorize activities by Contract, Stage, Location, and Responsibility to ensure compatibility with the Project Schedule Template and with schedules prepared by other contractors. Add additional activity codes as necessary, but do not delete the coding structure provided.

To ensure compatibility with the Project Schedule Template, use the latest version of Primavera P6 Project Management, by Oracle Corporation, Redwood Shores, CA, to prepare the Initial Work Plan, Baseline CPM Progress Schedule, and Monthly CPM Updates.

Designate a Project Scheduler who will be responsible for scheduling the Work and submit a professional resume describing a minimum of three years of scheduling experience on urban, interstate-highway reconstruction work of similar size and complexity, including recent experience with P6. Obtain approval of the submitted resume before scheduling the work.

108.4.4 Submittals

108.4.4.1 Initial Work Plan

Within ten business days after the CPM Initial Work Plan Workshop, submit an Initial Work Plan as follows:

1. Develop the Initial Work Plan using the Project Schedule Template. Identify the contemplated start and completion dates for each activity.
2. Provide a detailed plan of activities to be performed within the first 90 calendar days of the contract. Provide construction activities with durations not greater than 28 calendar days (20 business days), unless the engineer accepts requested exceptions.
3. Provide activities as necessary to depict administrative work, including submittals, reviews, and procurements that will occur within the first 90 calendar days of the contract. Show additional activities that require department review or approval. Activities other than construction activities may have durations greater than 28 calendar days (20 business days). Allow 21 calendar days (15 business days) for department review of submittals.
4. Provide summary activities for the balance of the project. Summary activities may have durations greater than 28 calendar days (20 business days).
5. Submit electronic copies of the Initial Work Plan and the corresponding Oracle Primavera P6 schedule (XER) in a format acceptable to the engineer.
6. The engineer will accept the contractor's Initial Work Plan or provide comments within five business days after receipt of the Initial Work Plan. Address comments and resubmit the Initial Work Plan as necessary. Do not begin work until the engineer accepts the Initial Work Plan. The department will use the initial work plan to monitor the progress of the work until the Baseline CPM Progress Schedule is accepted.
7. Submit an updated version of the Initial Work Plan monthly until the engineer accepts the Baseline CPM Progress Schedule. With each update, include actual start dates, completion percentages, and remaining durations for activities started but not completed. Include actual finish dates for completed activities.
8. Ensure the Initial Work Plan shows completing the work within the interim completion dates and specified completion date.
9. Include activities that describe essential features of the work and activities that might potentially delay contract completion. Identify activities that are controlling items of work.

108.4.4.2 Baseline CPM Progress Schedule

Within 15 business days after the CPM Initial Workshop, submit a Baseline CPM Progress Schedule and written narrative. The department will use the schedule to monitor the progress of the work.

1. Develop the Baseline CPM using the Project Schedule Template. The Baseline CPM is the contractor's committed plan to complete the Work within the time frames required to achieve the contract completion date and intermediate milestone dates.
    1.1. Provide a detailed plan of activities to be performed during the entire contract duration, including all administrative and construction activities required to complete the work as described in the contract documents. Provide construction activities with durations not greater than 28 calendar days (20 business days), unless the engineer accepts requested exceptions.
    1.2. Provide activities as necessary to depict administrative work, including submittals, reviews, procurements, inspections, and all else necessary to complete the work as described in the contract documents. Activities other than construction activities may have durations greater than 28 calendar days (20 business days). Allow 21 calendar days (15 business days) for department review of submittals.
    1.3. Submit a temporary drainage plan showing the interface between various stages of a project as well as the interface with adjacent projects.
    1.4. Include activities that describe essential features of the work and activities that might potentially delay contract completion. Identify activities that are controlling items of work.
    1.5. Show completing the work within interim completion dates and the specified completion date.
    1.6. Provide summary activities for the balance of the project. Summary activities may have durations greater than 28 calendar days (20 business days).
    1.7. Provide activities as necessary to depict third party work related to the contract.
    1.8. Make allowance for specified work restrictions, non-working days, time constraints, calendars, and weather; and reflect involvement and reviews by the department, and coordination with adjacent contractors, utility owners, and other third parties.
    1.9. With the exception of the Project Start Milestone and Project Completion Milestone, all activities must have predecessors and successors. The start of an activity shall have a Start-to-Start or Finish-to-Start relationship with preceding activities. The completion of an activity shall have a Finish-to-Start or Finish-to-Finish relationship with succeeding activities. Do not use Start-to-Finish relationships. Do not use Finish-to-Start relationships with a lag unless the engineer accepts requested exceptions.
    1.10. Schedule all intermediate milestones in the proper sequence and input as either a "Start-no-Earlier-Than" or "Finish-no-Later-Than" date. Provide predecessors and successors for each intermediate milestone as necessary to model each Stage of the Work. Unless the engineer accepts a requested exception, the schedule should encompass all the time in the contract period between the starting date and the specified completion date.
    1.11. Using the bid quantities and unit prices, develop an anticipated cash-flow curve for the project, based on the Baseline CPM.
2. Provide three hard copies of a hand-drawn or electronically drafted logic diagram depicting the CPM network. Organize the logic diagram by grouping related activities, based on the activity codes in the CPM.
3. Provide a written narrative with the baseline CPM explaining the planned sequence of work, as-planned critical path, critical activities for achieving intermediate milestone dates, traffic phasing, and planned labor and equipment resources. Use the narrative to further explain:
    3.1. The basis for activity durations in terms of production rates for each major type of work (number of shifts per day and number of hours per shift), and equipment usage and limitations.
    3.2. Use of constraints.
    3.3. Use of calendars.
    3.4. Estimated number of adverse weather days on a monthly-basis.
    3.5. Scheduling of permit and environmental constraints, and coordination of the schedule with other contractors, utilities, and public entities.

Submit electronic copies of the Baseline CPM and the corresponding Oracle Primavera P6 schedule file (XER) in a format acceptable to the engineer.

Within ten business days of receiving the Baseline CPM, the engineer will provide comments and schedule a meeting for the contractor to present its Baseline CPM and answer questions raised in the engineer's review.

At the meeting scheduled by the engineer, provide a presentation of the Baseline CPM. In the presentation, include a discussion of the staging and sequencing of the work, understanding of traffic phasing, and application of labor and equipment resources to the Work. Address comments raised in the engineer's review.

Within five business days after the meeting, the engineer will accept the contractor's Baseline CPM schedule or provide comments. Address the engineer's comments and resubmit a revised Baseline CPM within 10 business days after the engineer's request. If the engineer requests justification for activity durations, provide information that may include estimated labor, equipment, unit quantities, and production rates used to determine the activity duration.

The department will only make progress payments for the value of materials, as specified in 109.6.3.2, until the contractor has submitted the Baseline CPM Schedule. The department will retain 10 percent of each estimate until the department accepts the Baseline CPM Schedule.

The engineer will accept the Baseline CPM based solely on whether the schedule is complete as specified in this section. The engineer's acceptance of the schedule does not modify the contract or validate the schedule.

The department will not consider requests for contract time extensions as specified in 108.10 or additional compensation for delay specified in 109.4.7 until the department accepts the Baseline CPM schedule.

108.4.4.3 Monthly CPM Updates

Submit CPM Updates on a monthly basis after acceptance of the Baseline CPM as follows:

1. Include actual start dates, completion percentages, and remaining durations for activities started but not completed, and actual finish dates for completed activities, through the final acceptance of the project.
2. Include additional activities as necessary to depict additions to the contract by changes and logic revisions as necessary to reflect changes in the contractor's plan for prosecuting the work.
3. Include a narrative report that includes a brief description of monthly progress, changes to the critical path from the previous update, sources of delay, potential problems, work planned for the next 30 calendar days, and changes to the CPM schedule. Changes to the logic of the CPM schedule include the addition or deletion of activities and changes to activity descriptions, original durations, relationships, constraints, calendars, or previously recorded actual dates. Justify changes to the CPM schedule in the narrative by describing associated changes in the planned methods or manner of performing the work or changes in the work itself.
4. Submit electronic copies of each CPM Update and the corresponding Oracle Primavera P6 schedule file (XER) in a format acceptable to the engineer.
5. If additions or changes were made to the CPM schedule since the previous update, submit an updated hard copy of the revised logic diagram.

Within five business days of receiving each CPM Update, the engineer will provide comments and schedule a meeting as necessary to address comments raised in the engineer's review. Address the engineer's comments and resubmit a revised CPM Update within five business days after the engineer's request.

108.4.4.4 Three-Week Look-Ahead Schedules

Submit Three-Week Look-Ahead Schedules on a weekly basis after the notice to proceed (NTP). The schedule can be hand drawn or generated by computer. With each Three-Week Look-Ahead include:

1. Activities underway and as-built dates for the past week.
2. Actual as-built dates for completed activities through final acceptance of the project.
3. Planned work for the upcoming two-week period.
4. The activities underway and critical RFIs and submittals, based on the CPM schedule.
5. Details on other activities not individually represented in the CPM schedule.

On a weekly basis, the department and the contractor shall agree on the as-built dates depicted in the Three-Week Look-Ahead schedule or document all disagreements. Use the as-built dates from the Three-Week Look-Ahead schedules for the month when updating the CPM schedule.

108.4.4.5 Weekly Production Data

Provide estimated and actual weekly production rates for items of work on a weekly basis as follows:

1. Data on the following items by area or station:
    1.1. Roadway Excavation—CY per week
    1.2. Roadway Structural Section
        1.2.1. Grading/Subgrade Preparation—SY
        1.2.2. Base Material Placement—Ton
        1.2.3. Base Material Subgrade Preparation—SY
        1.2.4. Asphalt Pavement—Ton
        1.2.5. Concrete Pavement – SY
2. The actual daily production for the past week and the anticipated weekly production for the next week.

Submit the data in an electronic spreadsheet format at the same time the Three-Week Look-Ahead is submitted. On a weekly basis, the department and the contractor shall agree on the production data or document all disagreements.

108.4.5 Progress Review Meetings

108.4.5.1 Weekly Progress Review Meetings

After completing the weekly submittal of the Three-Week Look-Ahead and production data, attend a weekly meeting to review the submittals with the department. At the meeting, address comments as necessary, and document agreement or disagreement with the department.

108.4.5.2 Monthly Update Review Meetings

After submitting the monthly update and receiving the engineer's comments, attend a job-site meeting, as scheduled by the engineer, to review the progress of the schedule. At that meeting, address comments as necessary, and document agreement or disagreement with the department. The monthly meeting will be coordinated to take place on the same day and immediately before or after a weekly meeting, whenever possible.

108.4.6 CPM Progress Schedule Revisions

Revision by the contractor if necessary due to changes in the Work or project conditions and authorized by the engineer, a CPM Progress Schedule Revision may be submitted, although the next Monthly CPM Update is not yet due. Prepare the CPM Revision in the same format as required for Monthly CPM Updates, including justification for changes to the schedule. The process for comment and acceptance of a CPM Revision will be the same as for Monthly CPM Updates. If the CPM Revision is accepted, prepare the next monthly update based on the revised CPM. If the CPM Revision is rejected, prepare the next monthly update based on the previous month's update.

engineer's Right to Request Revisions—The engineer will monitor the progress of the work and may request revisions to the CPM schedule. Revise the schedule as requested by the engineer and submit a CPM Progress Schedule Revision within ten business days of the request. The process for comment and acceptance of a CPM Revision will be the same as for Monthly CPM Updates. The engineer may request that the contractor revise the CPM schedule for one or more of the following reasons:

1. The forecast completion date is scheduled to occur more than 14 calendar days after the contract completion date.
2. An intermediate milestone is scheduled to occur more than 14 calendar days after the date required by the contract.
3. The engineer determines that the progress of the work differs significantly from the current schedule.
4. A contract change order requires the addition, deletion, or revision of activities that causes a change in the contractor's work sequence or the method and manner of performing the work.

108.4.7 Documentation Required for Time Extension Requests

To request a time extension to an intermediate milestone date or the contract completion date associated with changes to the work, provide a narrative detailing the work added or deleted and the other activities affected, based on the latest accepted CPM Update. For added work, submit a proposed fragnet of activities to be added or revised in the CPM schedule, indicating how the fragnet is to be tied to the CPM schedule.

To request a time extension to an intermediate milestone date or the contract completion date associated with delays to the work, provide a narrative detailing the affected activities and the cause of the delay, based on the latest accepted CPM Update. Requests for time extensions due to delays should meet the following criteria:

1. For requests to extend the contract completion date, include a description of how the delay affected the project's critical path, based on the latest accepted CPM Update.
2. For requests to extend an intermediate milestone date, include a description of how the delay affected the controlling (longest) path to the milestone, based on the latest accepted CPM Update.
3. The department and the contractor agree that the float is not for the exclusive use or financial benefit of either party. Either party has the full use of the float on a first come basis until it is depleted.

108.4.8 Payment for CPM Progress Schedule

The department will pay for measured quantities at the contract unit price for work acceptably completed under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0601	Baseline CPM Progress Schedule	EACH
SPV.0060.0602	Monthly CPM Progress Schedule Updates	EACH

The department will only make progress payments for the value of materials, as specified in 109.6.3.2.1, until the Baseline CPM schedule has been submitted. The department will retain ten percent of each estimate until the department accepts the Baseline CPM schedule.

The department will only make progress payments for the value of materials, as specified in 109.6.3.2.1, until the Monthly CPM schedule updates have been submitted. The department will retain ten percent of each estimate until the department accepts the Monthly CPM schedule update.

Payment is full compensation for all work required under these bid items. The department will pay the contract unit price for the Baseline CPM schedule after the department accepts the schedule. Then, the department will pay the contract unit price for each Monthly CPM Update, acceptably completed.

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179. Brown Deer Pond Outlet Storm Sewer Structure, Item SPV.0060.0700.

A Description

This special provision describes furnishing and installing manhole structures with baffle walls for storm sewer in-line detention at the Brown Deer Pond.

B Materials

Furnish concrete manhole structures with a baffle wall and restrictor holes that are according to standard spec 501 and 611 and as shown on the plans.

C Construction

Field verify all existing connections. Ensure the sump depth as shown on the plans is 2-feet below the lowest pipe invert.

Conform to standard spec 611.

D Measurement

The department will measure Brown Deer Pond Outlet Storm Sewer Structure as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0700	Brown Deer Pond Outlet Storm Sewer Structure	EACH

Payment is full compensation for furnishing and installing the structure and all incidentals to complete the work.

180. Outlet Control Manhole 10X10 FT, Item SPV.0060.0701.

A Description

This special provision describes furnishing and installing manhole structures with baffle walls for storm sewer in-line detention.

B Materials

Furnish concrete manhole structures with a baffle wall and restrictor holes that are according to standard spec 501 and 611 and as shown on the plans.

C Construction

Field verify all existing connections. Ensure the sump depth as shown on the plans is 2-feet below the lowest pipe invert.

Conform to standard spec 611.

D Measurement

The department will measure Outlet Control Manhole by each unit, acceptably completed

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0701	Outlet Control Manhole 10x10-FT	EACH

Payment is full compensation for furnishing and installing Outlet Control Manhole and all incidentals to complete the work.

181. Temporary Water Diversion Indian Creek, Item SPV.0060.0710.

A Description

This special provision describes providing temporary water diversion for the flow of Indian Creek during the installation of Structure B-40-1026, B-40-1027 and B-40-1028 as hereinafter described.

B Materials

Follow the applicable sections of the WisDOT Standard Specifications for all materials utilized under this item, as directed by the engineer. Provide evidence that items meet specifications and/or certifications prior to use of such items if requested by the engineer.

C Construction

(1) Alterations to the suggested methodologies of water diversion as noted below may be acceptable. Such alterations should be clearly spelled out in the Erosion Control Implementation Plan (ECIP) for approval by WisDOT and the Wisconsin Department of Natural Resources prior to construction.

The following values are provided for the contractor’s use in sizing a temporary water diversion:

Temporary Water Diversion

Q2 = 398 cfs

Q10 = 694 cfs

(2) Divert the existing flow into one cell of the existing box culvert until demolition of the other cell is complete. Then divert the existing flow through a temporary open channel lined with polyethylene sheeting or other approved plastic. The bottom of the channel shall have a 6-inch depth of coarse aggregate #2 stone. Divert flow into the temporary open channel utilizing barriers made of non-erodible materials, such as rock bags, sand bags, cofferdams, polyethylene sheets, turbidity barrier, or other materials, to prevent siltation into the live stream. Details of the temporary open channel and the non-erodible barrier system shall be detailed in the contractor’s ECIP, for approval by the engineer.

(3) Remove the temporary open channel or temporary barriers after flow through the new bridges and/box culvert structure is established. Restore and blend the area outside of the proposed roadbed and slopes to natural surrounding conditions and elevations.

D Measurement

The department will measure Temporary Water Diversion Indian Creek as a single unit for the temporary diversion of Indian Creek to complete the removal of the existing box culvert (B-40-23) and complete the construction of B-40-1026, B-40-1027, and B-40-1028, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0710	Temporary Water Diversion Indian Creek	EACH

Payment is full compensation for providing, installing, removing, and disposing of all materials used to divert flow, maintaining such materials during use, all excavation required, and for restoration of the area to original conditions, unless shown otherwise in the project plans.

182. Geotechnical Instrumentation Track Embankment UPRR, Item SPV.0060.0800.

A Description

This special provision includes requirements to develop the geotechnical instrumentation plan, furnish, install, maintain and remove when applicable, the geotechnical instrumentation for the track embankment as indicated on the plans. The purpose of the instrumentation program is to monitor ground movements of the existing embankment and area of the new track embankment installed on the existing track embankment north slope, to determine when the track switch onto the new embankment may occur and to monitor performance after the track switch. The instrumentation program specified herein is not intended to be used to ensure the safety of the work.

A.1 Personnel and Software Qualifications

Technicians: A qualified technician shall be a licensed surveyor registered in the State of Wisconsin and have a minimum of 5 years of experience in the installation of geotechnical instrumentation similar to those specified herein.

Instrumentation Engineer: The contractor shall hire a professional civil or geotechnical engineer or engineering geologist, with a minimum of 5 years of experience in the installation of instrumentation specified herein.

Software: Rocscience Settle3 shall be used to evaluate embankment settlement and estimate future settlement.

B Materials

Protective Cover: Protective covers shall be guard casings or valve boxes depending upon installation location, as specified in this special provision. Each protective cover shall be 2 inches larger than the instrument within, or a minimum of 4 inches in inside diameter. Guard casing shall consist of Schedule 40 PVC pipe, or equal. Guard casing shall be of such length that it will have a minimum depth below ground surface of 2 feet, and a height above ground surface of 2 feet to 4 feet, or as instructed by the engineer. Guard casing shall have a bolting or screw-type cover that is free of sharp edges and burrs and is easy to remove for monitoring. Valve boxes shall be cast iron or steel designed to resist traffic loading typical for roadway installation. Valve boxes shall be of such length to have a minimum depth below ground surface of 1.5 feet when installed flush with the ground surface. The valve box shall have a bolting cover.

Inclinometers (INC): Inclinometer casing shall be grooved plastic 2.75-inch OD casing that is compatible with the inclinometer being provided. The casing shall be complete with necessary rigid self-aligning couplings and end plugs. The inclinometer monitoring system shall include a probe, 100 feet of cable, cable relief, pulley assembly, cable hold, and readout. The inclinometer readout shall measure inclinations at any depth selected by the operator and shall digitally store, process and report the data (by display and downloadable digital files) as lateral movements from a stored baseline reading. The cable connecting the sensor and indicator shall have a stranded steel core to take the stress of pulling so as not to break any connectors or wires. The cable shall be jacketed with a waterproof material and marked externally at 1-foot intervals for accurate depth determination. The cable guide pulley shall mount to the top of the inclinometer casing.

Subsurface Settlement Gauges (SSG): Subsurface settlement gauges for monitoring utility and storm sewer movement shall consist of a 0.75-inch solid rod or No. 6 steel reinforcing rod set within a 1½-inch Schedule 80 PVC pipe casing as depicted on a detail in the plans. The upper end of the rod shall have a rounded head or cap set perpendicular to the rod axis. Equivalent types of subsurface settlement markers may be used subject to the engineer's approval.

Ground Surface Markers (GSM): Surface settlement markers in paved areas shall be hardened steel markers treated or coated to resist corrosion, with an exposed convex head having a minimum diameter of 1/2 inch and similar to surveyor's PK nails. Surface settlement markers in unpaved areas shall be a 2-inch by 2-inch by 18-inch long hardwood hub driven to grade.

C Construction

C.1 Submittals

C.1.1 General

Prepare and submit the qualifications, instrumentation plan and shop drawings at least 30 calendar days prior to start of instrumentation installation. The engineer and the UPRR engineer will accept the submittal as submitted or return the submittal with requested revisions. Do not start any work until the engineer and the UPRR engineer provides acceptance of qualifications, instrumentation plan and shop drawings. Acceptance of the submittals does not relieve the contractor of responsibility for successful completion of the embankment.

C.1.2 Qualifications Submittal: Submit qualifications of the technicians and the instrumentation engineer.

C.1.3 Instrumentation Plan and Shop Drawings Submittal: The instrumentation plan and shop drawings shall be prepared by the instrumentation engineer and shall bear the seal, signature and date of the instrumentation engineer. At a minimum, include the following:

a. Shop drawings detailing locations (coordinates), depths, types, details, and other pertinent information showing the installation details for each type of instrumentation required.
b. Shop drawings that indicate the locations of control points and benchmarks associated with surveys for monitoring geotechnical instrumentation.
c. Description of methods for installing and protecting all instruments.
d. Materials and mix portions for cement-bentonite or cement-lime grout for installing subsurface settlement gauges and inclinometers.
e. Schedule of instrument installation and baseline related to significant activities or milestones in the overall project.
f. Manufacturer's literature describing installation, operation, and maintenance procedures for all instruments, materials, readout units, and accessories.
g. Submit permits and consents from authority having jurisdiction, if applicable, for drilling holes from ground surface and conducting monitoring activities.
h. Plans indicating locations and procedures for installation of geotechnical instrumentation.
i. Contingency plan when threshold limits for existing or proposed tracks are exceeded.

C.1.4 As-built Plan Submittal: Following installation of the instruments and fifteen days prior to the start of embankment construction, submit as-built drawings showing the exact installed location (coordinates and elevation), inclinometer's groove orientation relative to the shaft, the instrument identification number, the instrument type, the installation date and time, the heading station or portal or shaft excavation depth on the installation date, when applicable, and the gauge, anchor or tip elevation and instrument length, when applicable, and installed locations of control points and benchmarks associated with surveys for monitoring geotechnical instrumentation. Include details of installed instruments, accessories, and protective measures including all dimensions and materials used.

C.1.5 Instrument Certificate Submittals: Submit for each instrument to be installed, as applicable, a certificate issued by the instrument's manufacturer stating that the manufacturer has inspected and tested each instrument before it leaves the factory to confirm that the instrument is working correctly and has no defects or missing parts.

C.1.6 Submittals of Instrument Reports and Records:

a. Submit pre-construction assessment report prior to start of any construction or dewatering activities. The pre-construction assessment report shall document the condition of the existing railway, utilities, and any structures within the zone of influence defined herein.

b. Submit initial/baseline readings specified herein to the engineer, at least 30 calendar days prior to the start of any construction activity within 75 feet of the existing track centerline, within 30 feet of the base of the existing embankment, or prior to the start of any dewatering within 100 feet of the instrument.

c. Weekly monitoring reports by the instrumentation engineer shall be submitted on a weekly basis as specified herein. Supply copies of field notes if requested. As a minimum, the weekly monitoring report shall include construction status (dewatering activity if any, fill height or embankment progress, etc.), monitoring data (with excel spreadsheet-tabulated and plotted comparison to the baseline readings and threshold values), interpreted results, exceedances and comments, an estimate of time after which UPRR may perform the track switch, and impact assessment to existing railway including track, embankment, and existing bridge structure based on monitored movement.

d. Submit monthly reports to the engineer and the UPRR engineer prior to track switch, which include his/her field observation on performance of the proposed and existing embankments, a review of relevant instrumentation monitoring data, an update on the predicted time after which UPRR may perform the track switch, and other information as specified in C.1.6.c.

e. Submit monthly reports to the engineer and the UPRR engineer after track switch until project completion, which include his/her field observation on performance of the proposed and existing embankments, a review of relevant instrumentation monitoring data, an update on actual performance compared to predicted performance, and other information as specified in C.1.6.c.

f. Submit post-construction assessment report at the end of construction.

g. Submit copies of completed DNR abandonment forms for subsurface settlement gauges and inclinometers as soon as possible after instruments are installed or abandoned.

C.1.7 Acceptance

The engineer and the UPRR engineer will evaluate the submittals for approval with the requirements of this special provision. Within 30 calendar days after receipt of each submittal, the engineer and the UPRR engineer will notify the contractor of submittal acceptance, or if additional information and/or changes are required. Resubmit the submittal with the required information and/or changes. The engineer and the UPRR engineer will notify the contractor of resubmittal acceptance within 30 calendar days after its receipt.

After the submittal acceptance by the engineer and the UPRR engineer, no changes to the submittal can be made without written consent of the engineer and the UPRR engineer.

C.2 Installation

Install geotechnical instrumentation and complete baseline readings before the start of proposed track embankment construction.

Locate existing conduits and underground utilities in all areas where inclinometer borings are to be drilled and instruments installed. Modify instrument locations, as approved by the instrumentation engineer, to avoid interference with the existing conduits and utilities. Repair damage to existing utilities resulting from instrument installations at no additional cost to the department.

Clearly mark all instruments, permanently labeled, and protected to avoid being obstructed or otherwise damaged by construction operations or the general public. Mark all protective housing and box or vault covers.

After installation of each instrument, survey the as-built location to define the vertical and lateral positions of the exposed parts.

Provide a protective cover for all instruments installed in boreholes from the ground surface. Maintain exposed parts of installed instruments as necessary to ensure their availability for use for the duration of the work. Replace, at no cost to the department, instrumentation in place that becomes damaged, inaccessible, or unreadable because of the contractor’s means and methods of construction or changes in the contractor's means and methods of construction that could have been anticipated by the contractor prior to installation. The locations of replacement instruments shall be jointly determined by the engineer, the UPRR engineer, and the contractor. Complete the repair or replacement as soon as practical.

C.3 Installing Inclinometer

Use hollow-stem augers per ASTM D6151, as the drilling method utilized for INC installation. Drill borings for inclinometers using 6-inch minimum inside diameter casing and water or, where ground conditions permit, using drilling mud in a 6-inch minimum diameter borehole. During the drilling, perform soil sampling at intervals of 2.5 feet or less using standard penetration tests according to ASTM D1586.

Install the inclinometer casing completed with end plug as shown on the plans. Install the inclinometer casing to the elevations shown on the plans. Carefully orient the casing grooves as instructed by the instrumentation engineer. Grout the inclinometer casing in place. Place grout by tremie method. If steel drill casing has been used to support the borehole, remove the drill casing in increments, and top off the grout level with each increment.

Perform tremie grouting by pumping grout through a tremie pipe positioned 3 to 5 feet above the bottom of the space to be grouted. Keep the bottom end of the tremie pipe submerged in grout as the grout level is brought up to the ground surface. The density of the grout flowing from the space at the ground surface shall be the same as the density of the grout being placed. Allow the grout to set for a minimum 12-hour period before additional materials are placed on top of the grout. Top off any settling of grout.

The grout shall consist of a cement to water ratio ranging from 6.4 to 1 and 6.6 to 1, by weight. The specific ratio to be used will be determined by the instrumentation engineer. The bentonite to cement ratio will be approximately 0.4 to 1, by weight, adjusted to produce grout with the consistency of heavy cream. Mix cement and water first. Add bentonite as necessary to achieve the specified consistency.

Provide the top of each inclinometer casing with a cap. The cap shall be easy to remove.

Perform a groove tracking test after the installation has been completed to ensure that the inclinometer casing has been properly installed. Lower the inclinometer sensor to the bottom of the casing in all four possible orientations, verifying that on rising to the top of the casing the inclinometer orientation is unchanged.

C.4 Subsurface Settlement Gauges

Install SSGs as the plans show. Use potholing methods in areas of utilities. Set temporary casing if necessary. Take care to prevent any damage to nearby utilities.

Insert a PVC casing as indicated on the plans. Set a steel rod or riser pipe with centralizers that is cut to the required length or threaded with couplers. Install a protective cover. The installation shall conform to the details shown in the plans.

C.5 Ground Surface Markers

Install at the contractor's option; however, the marker shall be rigidly affixed so as not to move relative to the surface to which it is attached.

C.6 Monitoring Instruments

Horizontal and vertical survey accuracy shall be 1/8 inch or less.

Take a minimum of two sets of initial readings. After initial readings are approved by the instrumentation engineer, the average from the initial readings shall be used to establish the baseline reading.

For existing and proposed track embankments monitor all instruments as follows:

a. Monitor all instruments daily beginning when proposed track embankment begins.
b. Monitor daily or once per shift, whichever is more frequent during track embankment construction.
c. Monitor once per week during all other construction activities until the track switch by UPRR has been performed.
d. Monitor once per month after track switch by UPRR has been performed.

The monitoring threshold limits for all instruments are established as follows:

Track Embankment Monitoring				Threshold Value (inch)	Shutdown Value (inch)
Item	**SSG ID**	**Station**	**Offset From Existing Track CL**		
Subgrade Settlement Gauge (SSG)	SSG-1	90+00	10' N EO	1.5	2.0
	SSG-2		40' N EO	6.0	7.0
	SSG-3		10' S EO	0.5	1.0
	SSG-4	92+00	10' N EO	1.5	2.0
	SSG-5		45' N EO	9.0	10.0
	SSG-6		45' N ENC	4.5	6.0
	SSG-7		10' S EO	0.5	1.0
	SSG-8	95+00	10' N EO	1.0	2.0
	SSG-9		45' N EO	8.0	9.0
	SSG-10		10' S EO	0.5	1.0
	SSG-11	97+00	45' N EO	6.0	7.0
	SSG-12		45' N ENC	0.5	1.0
	SSG-13	101+00	10' N EO	0.5	1.0
	SSG-14		50' N EO	6.0	7.0
Inclinometer, (All STA's)				0.5	1.0

Legend
SSG = Subgrade Settlement Gauge
EO = Installed at Track Embankment Onset
ENC = Installed when Track Embankment Nearly Complete

Use whatever means and methods are necessary to limit ground movements, settlements, and damage of utilities, structures and other facilities. These means and methods include, but are not limited to excavation support systems, tunneling methods, underpinning, grouting and other forms of ground improvement.

C.7 Actions to Mitigate Excess Ground Movements

If movement of an instrument reaches the Threshold value, proceed with the approved contingency plan. The likely cause of the movement shall be promptly discussed with the engineer and the UPRR engineer. Increase the monitoring frequency where the Threshold value was exceeded, as directed by the engineer and the UPRR engineer.

If movement of an instrument reaches the Shutdown value, immediately report to the engineer and cease filling or other construction operations that result in further movement until additional operational changes are made to reduce settlement of the existing track embankment. Implement the approved contingency plan immediately. The likely cause of the displacement shall be discussed with the engineer and the UPRR engineer. Increase the monitoring frequency where the Threshold value was exceeded, as directed by the engineer and the UPRR engineer. Do not resume the construction until the ground movement is stabilized, as determined by the engineer and the UPRR engineer. If the contractor has exhausted all measures in the approved contingency plan and is not able to stabilize the ground

movement, submit a correction plan to the engineer and the UPRR engineer. Upon acceptance of the correction plan by the engineer and the UPRR engineer, the contractor shall implement the correction plan immediately.

The cost of actions required for complying with Threshold and Shutdown values and to repair any damage to adjacent facilities shall be borne by the contractor with no additional cost to the department.

C.8 Acceptance Criteria for Switchover

Notify UPRR when either cross-level settlement exceeds 0.25 inches, or total settlement exceeds 0.5 inches. (Note: Measure settlement from the top of each rail. Calculate total settlement as the average settlement obtained by measurements of both rails at a particular track location. Calculate cross-level settlement as the difference between settlements at each rail at a particular track location.) Establish a wait time for switchover that is based on settlement data, where the average rate (per week of data) of cross-level settlement is less than 0.1 inches/month and total settlement is less than 0.2 inches/month.

If the wait time duration results in the existing track settlement exceeding the criteria above, and the new track is constructed and has acceptable surface, and the rate of settlement of the new track is within 0.125 inches/month and 0.25 inches/month for cross-level and total settlement, respectively, the switchover can occur to avoid the existing track from being resurfaced.

D Measurement

The department will measure Geotechnical Instrumentation Track Embankment UPRR by the unit for each, acceptably completed, in which one unit includes all instrumentation for the entire new track embankment as indicated in the plans.

E Payment

The department will pay for the measured quantities or revised quantities if agreed to in advance of placement by the department, at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0800	Geotechnical Instrumentation Track Embankment UPRR	EACH

Payment is full compensation for furnishing and installing all instruments which includes all materials, labor, tools and equipment necessary; for providing submittals; for testing, protection, maintenance, replacement or repair of damaged instruments and abandonment; for initial readings, subsequent monitoring, evaluation, implementation of contingency and correction plans, if required; and all other specified items of work for which no separate bid item is provided.

183. Traffic Control Close-Open Freeway Entrance Ramp, Item SPV.0060.0910.

A Description

This special provision describes closing and re-opening a freeway entrance ramp and exit ramp.

B (Vacant)

C Construction

Install or reposition traffic control devices required for closing a freeway entrance ramp and exit ramp. Remove or return traffic control devices to their previous configuration when the closure is no longer required.

D Measurement

The department will measure Traffic Control Close-Open Freeway Entrance Ramp by each individual ramp closure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0910	Traffic Control Close-Open Freeway Entrance Ramp	EACH

Payment is full compensation for daily surveillance; preparing and submitting the daily surveillance report with hourly metered tickets; mobilization; sweeping; and disposing of materials. Traffic Control devices will be paid separately.

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184. Traffic Control Full Freeway Closure, Item SPV.0060.0918.

A Description

This special provision describes closing and re-opening a freeway or expressway.

B (Vacant)

C Construction

Install or reposition traffic control devices required for a full freeway closure. Remove or return traffic control devices to their previous configuration when the full closure is no longer required.

D Measurement

The department will measure Traffic Control Full Freeway Closure by each individual freeway closure that is set up and later removed in each traffic direction, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0918	Traffic Control Full Freeway Closure	EACH

Payment is full compensation for closing and re-opening the freeway. Traffic Control devices will be paid separately.

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185. Install, Maintain, and Remove State Furnished Sign, Item SPV.0060.0920.

A Description

Work under this special provision shall comply with standard spec 638 as described for Erecting State Owned Signs, except as otherwise defined for this item.

B (Vacant)

C Construction

Remove state-owned signs, move signs to new locations, and erect signs as described in standard spec 638.3.7. Prior to installation contact Keegan Dole at (414) 640-1148 for locations of sign placement. At the completion of the project, remove the signs and return them to the WisDOT Sign Shop. Contact Randy Hoyt at (414) 227-4671 10 days in advance to arrange for delivery.

D Measurement

The department will measure Install, Maintain, and Remove State Furnished Sign by each individual sign location, acceptably installed and removed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0920	Install, Maintain, and Remove State Furnished Sign	EACH

Payment is full compensation for removing the sign, moving the sign, installing the sign, removing the sign at the end of the project, returning the sign to the WisDOT Sign Shop, and restoring the site. Payment does not include compensation for furnishing new wood posts, which are paid for under the pertinent contract bid item.

186. Emergency Response to Traffic Involving Concrete Barrier Temporary, Item SPV.0060.0940.

A Description

This special provision describes providing prompt response to an emergency repair request for damaged and/or dislodged temporary concrete barrier installed under this project that is damaged or displaced due to a vehicular collision during the time this contract is in effect.

B (Vacant)

C Construction

The contractor shall provide staff, equipment, and materials to the incident site within one hour of receiving a repair request from the responding agency. The contractor shall consult with the department's representative on potential repair or replacement options to restore the temporary concrete barrier to proper working condition. Staff and equipment deployed shall be capable of completing the needed repairs as quickly as possible once repair work is started. Repair work shall be completed off the traveled way to the maximum extent allowable. The contractor shall provide a time log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating and completing repair efforts) shall be submitted to the engineer at the pre-construction meeting. This person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff and equipment within one hour of receiving a repair request, the department will assess the contractor $500 in liquidated damages for each 15-minute interval that the contractor is not present following the allotted one-hour response time. Increments of 15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Liquidated damages will be assessed under the administrative item Failing to Open Road to Traffic.

For contractor owned temporary barrier, repair work shall be completed according to standard spec 603 and 643, and as directed by the engineer. For temporary barrier left in place from a previous project, repair work is covered under article Maintain and Remove Temporary Precast Barrier Left In Place of these special provisions.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Traffic Involving Concrete Barrier Temporary as each individual response, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0940	Emergency Response to Traffic Involving Concrete Barrier Temporary	EACH

Payment is full compensation for providing prompt response to an emergency repair request for damaged and/or dislodged temporary concrete barrier located within the project limits.

The cost of providing the appropriate level of on-call staff for 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

187. Emergency Response to Traffic Involving Temporary Crash Cushion, Item SPV.0060.0945.

A Description

This special provision describes providing prompt response to an emergency repair request involving a damaged crash cushion installed under this project that is displaced or damaged due to a vehicular collision during the time this contract is in effect.

B (Vacant)

C Construction

The contractor shall provide appropriate staff to the incident site within one hour of receiving a repair request from the responding agency. Staff deployed shall be capable of immediately assessing the severity of the damage to the device and consult with the department's representative on potential repair or replacement options and the projected timeline to restore the roadside device to its proper working condition. The contractor shall provide a time log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating repair efforts) shall be submitted to the engineer at the pre-construction meeting. This person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff within one hour of receiving a repair request, the department will assess the contractor $500 in liquidated damages for each 15-minute interval that the contractor is not present following the allotted one-hour response time. Increments of 15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Liquidated damages will be assessed under the administrative item Failing to Open Road to Traffic.

Repair work shall be completed according to standard spec 614, and as directed by the engineer. Once repair work has been started, work shall continue until completion. Repair work shall be completed off the traveled way to the maximum extent allowable. For temporary crash cushions left in place from a previous project, repair work is covered under article Maintain and Remove Crash Cushions Temporary Left In Place of these special provisions.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Traffic Involving Temporary Crash Cushion as each individual response, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0945	Emergency Response to Traffic Involving Temporary Crash Cushion	EACH

Payment is full compensation for providing a prompt staff response to an emergency repair request for a damaged crash cushion device located within the project limits.

Payment is full compensation for providing prompt response to an emergency repair request for damaged and/or dislodged temporary concrete barrier located within the project limits.

The cost of providing the appropriate level of on-call staff, equipment, and materials for 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

188. Exposing Existing Infrastructure Paved Area, Item SPV.0060.0950.

A Description

This work includes locating and exposing existing infrastructure in paved areas as directed by the engineer. The contractor shall be responsible for compliance with s.182.0175 (2), Stats., with respect to precautions to be taken to avoid and prevent damage to utility facilities. The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. Conform to Wisconsin State Statute 182.0175 (2) and Wisconsin Administrative code Trans 220. The work includes exposing existing infrastructure, including utilities, under paved surfaces and providing both lateral and depth measurements for use in determining potential infrastructure conflict solutions, and backfilling.

B Materials

B.1 Backfill Slurry

Utilize backfill slurry as specified elsewhere in these special provisions.

C Construction

C.1 General

The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. This item will only be used as determined by the department for unique locations as directed by the engineer. It does not remove the contractor's obligation to locate utilities as specified by Wisconsin Administrative code Trans 220 and Wisconsin State Statute 182.0175. The engineer will direct all exposing existing infrastructure in writing. Coordinate infrastructure exposures with the engineer and notify the infrastructure owner or their agents of this work two working days in advance so that they may be present when the work commences.

C.2 Excavation

Remove all paved surfaces at locations where the existing infrastructure is being exposed. Saw or remove concrete and asphaltic pavements to the nearest joint. Remove all pavement surfaces in such a way that all existing edges consist of a true line having a perpendicular edge with no unraveling. Maintain drainage at all times according to standard spec 205.3.3. Take precautions, including temporary shoring, in order to prevent any undermining of the existing roadway. Perform work according to all applicable laws, ordinances, rules, regulations, and OSHA standards.

Expose all infrastructure locations within a given location to a minimum depth of 18-inches below the bottom of each infrastructure. Excavate in a manner that protects the integrity of the infrastructure and prevents any damage to wrappings or protective coatings such as by any mechanical method or hand digging. Notify the infrastructure owner promptly if damage or interruption of service occurs. Repair all damage caused to such infrastructure resulting from negligence or carelessness at own expense.

Take all lateral and depth measurements in US feet and tenths thereof. Identify horizontal locations of each exposed infrastructure with a coordinate northing and easting referenced to the Wisconsin County Coordinate System (WCCS), Milwaukee County, NAD 83 (2007). Provide vertical elevations for each exposed infrastructure and reference to NAVD 88 (2007).

The infrastructure location shall remain exposed and available for visual inspection until the completion of all work in a given location. If the infrastructure shall remain exposed overnight or for prolonged periods of time, protect the location with traffic-rated steel plating, safety barriers, and all necessary traffic control devices that may be required under applicable standards or as directed by the engineer.

C.3 Backfilling

Upon completion of the infrastructure exposure, restore the location in kind to its original condition. When exposed infrastructure locations fall within local streets or city right-of-way, use backfill slurry to fill the entire location to the subgrade elevation. Restore concrete pavement and concrete base course to the depth found in the existing roadway. Replace all locations that fall within live lanes of any roadway or pedestrian traffic with a high early-strength concrete pavement mix design having a depth equivalent to the existing pavement structure unless directed otherwise by the engineer. Locations that are closed to through traffic may use an approved concrete pavement mix conforming to standard spec 501. If directed by the engineer, tie concrete pavement and/or dowel it to the existing pavement according to the standard detail drawing for concrete pavement. All locations requiring asphaltic pavement shall consist of HMA Pavement 4 MT 58-28 S unless otherwise directed by the engineer. Place the HMA pavement in lifts to a depth as directed by the engineer. Apply tack coat to composite pavement structures and between lifts.

Alternate restoration methods may be used upon written approval from the engineer. Place base aggregate dense between the subgrade surface and the bottom of the pavement.

C.4 Documentation

Provide documentation to the engineer and include the coordinates, elevations, and sketches of the infrastructure locations tied to known features in the plans. Reference each infrastructure to a proposed alignment with a station and offset. Where near a ramp, reference the ramp alignment. Document the size and/or diameter, composition, and a description of each infrastructure and the location of the elevation with respect to each infrastructure noted. Supply digital photographs of the uncovered infrastructure to the engineer in .jpeg format for future reference.

D Measurement

The department will measure Exposing Existing Infrastructure Paved Area as a unit for each location. A location may have multiple infrastructures located within the same exposure area. An exposure area will include all infrastructures within 6 lateral feet of each other and payment will only be made for one unit regardless of the number of infrastructures exposed. If the distance from the existing ground elevation, located above the existing infrastructure, to a point 18 inches below the exposed infrastructure is between 0 and 6 feet, the department will measure each location as a single unit of work. If the distance from the existing ground elevation, located above the existing infrastructure, to a point 18 inches below the exposed infrastructure is greater than 6 feet and less than 12 feet, the department will pay for the item as two units of work.

E Payment

The department will pay for the measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0950	Exposing Existing Infrastructure Paved Area	EACH

Payment is full compensation for mobilization; for excavation; for disposing of all materials; for locating all infrastructure within each respective location; for providing documentation and photographs of infrastructure locations to the engineer; for all surveying associated with exposing existing infrastructure; for maintenance of the location during construction; for furnishing all traffic control, safety barriers, and steel plating required; for temporary shoring; and for furnishing all finishing items including, but not limited to, base aggregate dense, backfill slurry, concrete pavement, HMA pavement, curb and gutter, and sidewalk located above the subgrade elevation.

189. Exposing Existing Infrastructure Unpaved Area, Item SPV.0060.0955.

A Description

This work includes locating and exposing existing infrastructure in unpaved areas as directed by the engineer. The contractor shall be responsible for compliance with s.182.0175 (2), Stats., with respect to precautions to be taken to avoid and prevent damage to utility facilities. The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. Conform to Wisconsin State Statute 182.0175 (2) and Wisconsin Administrative code Trans 220. The work includes exposing existing infrastructure, including utilities, under unpaved surfaces and providing both lateral and depth measurements for use in determining potential infrastructure conflict solutions, and backfilling.

B Materials

B.1 Backfill Slurry

Utilize backfill slurry as specified elsewhere in these special provisions.

C Construction

C.1 General

The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. This item will only be used as determined by the department for unique locations as directed by the engineer. It does not remove the contractor’s obligation to locate utilities as specified by Wisconsin Administrative code Trans 220 and Wisconsin State Statute 182.0175. The engineer will direct all exposing existing infrastructure in writing. Coordinate infrastructure exposures

with the engineer and notify the infrastructure owner or their agents of this work two working days in advance so that they may be present when the work commences.

C.2 Excavation

Remove all unpaved surfaces at locations where the existing infrastructure is being exposed. Maintain drainage at all times according to standard spec 205.3.3. Take precautions, including temporary shoring, in order to prevent any undermining of the existing roadway. Perform work according to all applicable laws, ordinances, rules, regulations, and OSHA standards.

Expose all infrastructure locations within a given location to a minimum depth of 18-inches below the bottom of each infrastructure. Excavate in a manner that protects the integrity of the infrastructure and prevents any damage to wrappings or protective coatings such as by any mechanical method or hand digging. Notify the infrastructure owner promptly if damage or interruption of service occurs. Repair all damage caused to such infrastructure resulting from negligence or carelessness at own expense. Take all lateral and depth measurements in US feet and tenths thereof. Identify horizontal locations of each exposed infrastructure with a coordinate northing and easting referenced to the Wisconsin County Coordinate System (WCCS), Milwaukee County, NAD 83 (2007). Provide vertical elevations for each exposed infrastructure and reference to NAVD 88 (2007). The infrastructure location shall remain exposed and available for visual inspection until the completion of all work in a given location. If the infrastructure shall remain exposed overnight or for prolonged periods of time, protect the location with traffic-rated steel plating, safety barriers, and all necessary traffic control devices that may be required under applicable standards or as directed by the engineer.

C.3 Backfilling

Upon completion of the infrastructure exposure, restore the location in kind to its original condition. Use backfill slurry, conforming to standard spec 501, to backfill the exposed infrastructure locations to the subgrade elevation. In grassy areas, place 6-inches of topsoil, sod or seed and mulch, and fertilizer. Alternate restoration methods may be used upon written approval from the engineer.

C.4 Documentation

Provide documentation to the engineer and include the coordinates, elevations, and sketches of the infrastructure locations tied to known features in the plans. Reference each infrastructure to a proposed alignment with a station and offset. Where near a ramp, reference the ramp alignment. Document the size and/or diameter, composition, and a description of each infrastructure and the location of the elevation with respect to each infrastructure noted. Supply digital photographs of the uncovered infrastructure to the engineer in .jpeg format for future reference.

D Measurement

The department will measure Exposing Existing Infrastructure Unpaved Area as a unit for each location. A location may have multiple infrastructures located within the same exposure area. An exposure area will include all infrastructures within 6 lateral feet of each other, and payment will only be made for one unit regardless of the number of infrastructures exposed. If the distance from the existing ground elevation, located above the existing infrastructure, to a point 18 inches below the exposed infrastructure is between 0 and 6 feet, the department will measure each location as a single unit of work. If the distance from the existing ground elevation, located above the existing infrastructure, to a point 18 inches below the exposed infrastructure is greater than 6 feet and less than 12 feet, the department will pay for the item as two units of work.

E Payment

The department will pay for the measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0955	Exposing Existing Infrastructure Unpaved Area	EACH

Payment is full compensation for mobilization; for excavation; for disposing of all materials; for locating all infrastructure within each respective location; for providing documentation and photographs of infrastructure locations to the engineer; for all surveying associated with exposing existing infrastructure; for maintenance of the location during construction; for furnishing all traffic control, safety barriers, and steel plating required; or temporary shoring; for furnishing backfill slurry and backfilling the location; for restoration with topsoil, seed or sod, mulch, and fertilizer.

190. Contractor Staging Area, Item SPV.0060.0960.

A Description

This special provision describes material and equipment staging area and restoring the site to its original condition.

The department has coordinated and secured the location identified on the plan with the appropriate governing agency.

B Materials

Conform to all applicable standard specifications including, but not limited to, chain link fence, gates, milling, sawcut, asphaltic surface, erosion control, lighting, seeding, fertilizer, pavement marking, and restoration.

C Construction

Secure the entire perimeter of the site with an 8-ft tall chain link fence and provide two locked gates of adequate width to allow for material and equipment staging at all times. Light the construction staging area appropriately for a commercial use between dusk to dawn.

When the staging area is no longer of use to the contractor, restore the site to original condition. Milling to a depth of 1-1/2-inch and overlay with 1-1/2-inch asphaltic surface, parking stall pavement marking, seeding, fertilizing, and all restoration items as necessary. Prior to milling, provide a clean sawcut joint between adjacent asphaltic surfaces. Remove all lighting that was not part of the original site condition.

Batch plants are not allowed in staging area.

Contractor is required to include the select site in the ECIP, if the contractor intends to use the staging area as shown on the plan.

D Measurement

The department will measure Contractor Staging Area as a unit for each staging area, as identified at the location shown in the plans, acceptably completed.

E Payment

The department will pay for Contractor On-Site Staging area as a single unit at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0960	Contractor Staging Area	EACH

Payment is full compensation for furnishing and installing all materials necessary to secure the staging area, for removal and disposal of all materials and restoration of the site back to its original condition, for removing asphaltic surface milling, sawcutting, base aggregate dense, asphalt pavement, curb and gutter, erosion mat, seeding, fertilizing, seed water, pavement marking, and all incidental items required to restore the site back to its original condition.

191. Maintenance of Lighting Systems (1229-04-73), Item SPV.0060.1001.

A Description

This special provision describes maintaining existing and proposed lighting system beginning on the date that the contractor's activities, including electrical, begin at the job site. Properly operate and maintain all existing and proposed lighting systems which are part of, or which may be affected by, the work until final acceptance or as otherwise determined by the engineer.

Before performing any excavation, removal, or installation work, including electrical, for the project, initiate a request for maintenance transfer and preconstruction inspection, as specified in this special provision. Conduct the transfer and inspection in the engineer’s presence and a representative of the party or parties responsible for maintenance of any lighting systems which may be affected by the work. Request the maintenance preconstruction inspection at least seven calendar days before the desired inspection date.

Existing lighting systems, when shown on the plans, are intended only to indicate the general equipment installation of the systems involved, possibly not exactly representing the field conditions. A site visit will confirm the exact condition of the electrical equipment and systems to be maintained.

Issues found during contractor assessment can be discussed and addressed by contacting the SE Region Lighting Engineer (Eric Perea, (262) 574-5422) before transferring maintenance responsibility to the contractor.

Maintenance of the lighting system includes lighting control cabinet(s): HL-40-FS, HL-40-NC, HL-40-GH, HL-40-BR, HL-40-BQ, AND HL-40-MN

The following lighting control cabinet(s) will be used long enough to allow the installation of temporary lighting: HL-40-GH, HL-40-BR, AND HL-40-MN.

B (Vacant)

C Construction

C.1 Existing Lighting Systems

Existing lighting systems are defined as any lighting system or part of a lighting system in service before this contract. The contract drawings indicate the general extent of any existing lighting. Understand the effort required for compliance with these specifications; Clear and replace any knockdowns or damage caused to the existing lighting system, regardless of who causes the damage. Maintain existing lighting system as follows:

Partial Maintenance: Only maintain the affected circuits if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work unless otherwise indicated. Obtain engineer approval to isolate the affected circuits by in-line waterproof fuse holders as specified elsewhere

Full Maintenance: Maintain the entire controller and all associated circuits if the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller, or if the controller is modified in any way under the contract work.

C.2 Proposed Lighting Systems

Proposed lighting systems are any temporary or final lighting systems or part of a lighting system to be constructed under this contract.

Maintain all items installed under this contract, including all equipment failures or malfunctions as well as equipment damage by the motoring public, contractor operations, or other sources.

C.3 Maintenance Operations

Maintain lighting units (including sign lighting), cable runs, and lighting controls. If a pole is knocked down or sign light damage is caused by normal vehicular traffic, promptly clear the lighting unit and circuit discontinuity, and restore the system to service. Reinstall the lighting unit (if salvageable), or install a new one.

Provide weekly night-time patrol of the lighting system, with patrol reports filed on standard forms as designated by the engineer. Send a copy to the region lighting coordinator.

Correct the deficiencies within a time frame acceptable to the engineer. Remaining deficiencies may require corrective action on specific lighting system equipment as described in the chart or based on material availability.

Incident or Problem	Service Response Time	Service Restoration Time	Permanent Repair Time
Control cabinet out	12 hours	24 hours	7 Calendar days
Hanging mast arm	**Emergency** - As Soon As Possible	na	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	**Emergency** - As Soon As Possible	7 Calendar days	14 Calendar days
Circuit out – Needs to reset breaker	12 hours	12 hours	na
Circuit out – Cable trouble	12 hours	7 Calendar days	21 Calendar days
Outage of 3 or more successive lights	12 hours	7 Calendar days	na
Outage of 75% of lights on one tower	12 hours	7 Calendar days	na
Outage of light nearest RR crossing approach, Islands and gores	12 hours	7 Calendar days	na
Outage (single or multiple non successive lights) found on night outage survey	na	na	7 Calendar days

C.4 Lighting

1. **Service Response Time:** The amount of time from the initial contractor notification to the patrolman physically arriving.
2. **Service Restoration Time**: The amount of time from the initial contractor notification to a fully operational system again. (In cases of motorist-caused damage, the undamaged portions of the system are operational.)
3. **Permanent Repair Time**: The amount of time from initial contractor notification until permanent repairs are made, unless the contractor was required to make temporary repairs to meet the service restoration requirement. Temporary repairs that do not meet the service restoration requirements require engineer's approval.

C.5 Operation of Lighting

Maintain operational lighting every night, from dusk until dawn. Do not operate duplicate lighting systems (such as temporary lighting and proposed new lighting) simultaneously. Do not keep lighting systems in operation during long daytime periods. Ensure that the lighting system is fully operational and approved by the engineer before submitting a pay request.

D Measurement

The department will measure Maintenance of Lighting Systems as a single unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1001	Maintenance of Lighting Systems (1229-04-73)	EACH

Payment is full compensation for Maintenance of Lighting Systems, both existing and proposed, weekly night-time patrol of the lighting system, mobilization, and filed patrol reports.

Not understanding the effort required for compliance with these specifications will not be justification for extra payment or reduced responsibilities. No payment will be considered for damage or repairs due to contractor operations.

Not ensuring that the lighting system is fully operational and approved by the engineer before submitting a pay request will be grounds for denying the pay request.

192. Lighting System Integrator (1229-04-73), Item SPV.0060.1002.

A Description

These special provisions describe coordinating lighting with various parties; record keeping, and documentation. Where the department is responsible for freeway lighting operation, maintenance, or utility locates on existing systems or systems overlapping project boundaries, the contractor's lighting system integrator will serve as the contractor's liaison to the department's electrical operations unit.

B Personnel Qualifications

Assign personnel experienced in underground utility construction and department lighting specifications and practices.

C Construction

At any one time during the project, the contractor shall assign one individual person as the lighting system integrator.

The lighting system integrator shall:

1. Familiarize themself with the location and nature of existing lighting circuits. This familiarity shall include the extent of any lighting system that overlaps project limits.
2. Maintain a file of applicable permits or licenses issued to the contractor, and convey copies to the Engineer.
3. Keep a contact list at all times of affected lighting personnel.
4. Maintain a record of tagouts and the clearance of tagouts.
5. Interface with department electrical personnel to determine how contract limits might affect maintenance or operation of existing systems.
6. Maintain ongoing contact with the department's Diggers' Hotline Coordinator to ensure that each of the two persons knows that all requested utility locates are marked in the field by the appropriate party. The intent here is to ensure coordination. This special provision does not transfer additional utility locating responsibilities to the contractor, beyond those responsibilities already assigned to them by other provisions of the contract.
7. Inform the department of any lighting outages, including outside the project limits where a lighting system crosses the project boundary.
8. Maintain in any format real-time records of existing, removed and new lighting facilities. Include utility service extensions. Additional required records will include temporary connections and their ultimate removal.
9. Maintain records of tests, including: "meg" tests, amperage draw per circuit leg, voltage reading at the disconnect, and voltage reading at the furthest pole per circuit leg. Convey these records at time of acceptance or partial acceptance.
10. At the time of acceptance or partial acceptance, convey as-built drawings in both the following formats: plan redlines and .dwg electronic. Include utility service extensions.
11. Secure copies of operators manuals, tear sheets, etc. as may be provided by manufacturers of some lighting materials, and convey a minimum of three sets to the department.
12. Work with the Engineer to notify department electrical personnel of acceptance or partial acceptance.
13. Perform related duties as may be needed to ensure continuity of freeway lighting during construction, and orderly transfer upon completion.
14. Contractor must use GPS to provide coordinates of each light pole and control cabinet. The data must be entered into an Excel spreadsheet along with other required fields as specified by the Department.

D Measurement

The department will measure Lighting System Integrator as one complete unit item of work, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1002	Lighting System Integrator (1229-04-73)	EACH

Payment will be full compensation for personnel costs; for all required coordination, record-keeping and documentation; and for all labor, tools, equipment and incidentals necessary to complete the contract work.

193. Lighting System Survey (1229-04-73), Item SPV.0060.1003.

A Description

This special provision describes performing a lighting system survey as-built for IH 43 (Bender Rd. to Brown Deer Interchange) Mainline, Ramps, and local streets, as shown on the plans, and hereinafter provided.

B Vacant

C Construction

Locate and survey all the lighting units, pull boxes, and control cabinets to sub-meter accuracy. Maintain neat, orderly, and complete survey notes. Perform the survey in NAD 83, Wisconsin County Coordinate System (WCCS), and Milwaukee Coordinates. Deliver data in a comma delimited text file with metadata including datum, county, and date the survey was performed. Data for each point shall have a point number, northing, easting, and point description including pole, pull box, or cabinet number.

D Measurement

The department will measure Lighting System Survey as each individual project, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit prices under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1003	Lighting System Survey (1229-04-73)	EACH

Payment will be full compensation for locating and surveying all the lighting units, pull boxes, and control cabinets and for delivery of the comma delimited data file and all survey notes.

194. Installing Conduit and Junction Boxes on the Bridge (B-40-735), Item SPV.0060.1004.

A Description

This special provision describes furnishing and installing conduits and junction boxes for the lighting unit mounted on top of the parapet of bridge B-40-735 as shown in the traffic signal and structure plans.

B.1 Conduits

Provide Conduit Rigid Nonmetallic Schedule 40 1-Inch and Conduit Rigid Metallic 1-Inch.The conduit shall meet the pertinent requirement of standard spec 652.2.

B.2 Junction Boxes

Junction boxes shall be 8x8x8-Inch and shall meet the pertinent requirement of standard spec 653.2.

Provide all other needed materials in conformance with standard spec 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2, and 659.2.

C Construction

The conduits and junction boxes shall be mounted at locations shown on the plans. Provide additional conduits, junction boxes as needed.

The contractor shall provide means and methods to attach conduits and junction boxes on horizontal and vertical areas of the abutment and parapet of the bridge.

Electrical conduit shall be installed according to standard spec 652.3 and as directed by the engineer.

Electrical junction boxes shall be installed according to standard spec 653.3 and as directed by the engineer.

D Measurement

The department will measure Installing conduit and junction boxes on the bridge (B-40-735) as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1004	Installing Conduit and Junction Boxes on the Bridge (B-40-735)	EACH

Payment is full compensation for furnishing and installing conduit, and junction boxes; for furnishing all parts and fittings.

195. Wood Pole 60-Foot, Item SPV.0060.1005.

A Description

Furnish and install wood poles and other incidental items as required and as shown on the plans, according to standard spec 651, and as hereinafter provided.

B Materials

Furnish wood poles that are Class 4 or larger with a 60-foot minimum overall length. The poles shall be western red cedar according to ANSI standards 05.1. All poles shall be shaved the entire length.

Wood poles used for freeway lighting shall be pressure treated with a 5 percent pentachlorophenol mixture with a minimum of 8 pounds per cubic foot net retention of the oil-borne preservative.

C Construction

Install the pole according to the pertinent provisions of standard spec 611.3.1.1, and as shown on the plans. As necessary, install #4 AWG grounding wire exothermically bonded to a 5/8-inch by 8-foot copper clad grounding electrode, cable guard, NEMA 3R junction box 3ft above grade level for splice, and incidentals as necessary.

D Measurement

The department will measure Wood Poles 60-Foot as a unit for each pole, installed completely as described above.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1005	Wood Pole 60-Foot	EACH

Payment is full compensation for furnishing and installing a wood pole; and all excavation and backfill..

196. Removing 60-Foot Wood Pole and Floodlights, Item SPV.0060.1006.

A Description

Remove 60-foot wood pole lighting units and attached conduit and wiring as shown on the plans and according to standard spec 204, remove mast arm or bracket arm, luminaire, air terminal, and junction box. Backfill all holes as specified in standard spec 203.3.6, except that broken masonry will not be allowed, to the final grade lines or as directed by the engineer. Separate payment will be made for lamp disposal.

B (Vacant)

C Construction

Dispose of all materials except lamps off site. Deliver the lamps to the department under a separate bid item, Lamp, Ballast, LED, Switch Disposal By Contractor, 659.5000.S.

The department will allow, at the contractor's discretion, to reuse removed wood pole lighting units at new location, if possible. The bid price is to reflect the salvage value of the removed wood pole lighting unit. The department will allow, at the contractor's request, the reuse of removed temporary wood pole lighting units at new locations, if feasible.

Restore all areas disturbed by construction activities to the final grade lines with topsoil and seed and mulch that meet the requirement of standard spec 625, 630, and 627, respectively. Restoration is incidental to this bid item.

D Measurement

The department will measure Removing 60-Foot Wood Poles and Floodlights by the unit removed and disposed of, or returned to the department, as directed by the engineer.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1006	Removing 60-Foot Wood Poles and Floodlights	EACH

Payment is full compensation for removing wood pole lighting units; all excavation and backfill; removal and disposal of material.

197. Removing 60-Foot Wood Pole, Item SPV.0060.1007.

A Description

Remove 60-foot wood poles as shown on the plans.

B (Vacant)

C Construction

In addition to removing the attached conduit and wiring according to standard spec 204 of the standard specification. Backfill all holes as specified in standard spec 203.3.6, except that broken masonry will not be allowed, to the final grade lines or as directed by the engineer. Dispose of all materials off site.

Restore all areas disturbed by construction activities to the final grade lines with topsoil and seed and mulch that meet the requirement of standard spec 625, 630, and 627, respectively. Restoration is incidental to this bid item.

D Measurement

The department will measure Removing Wood Pole 60-Foot as a unit for each pole, acceptably removed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1007	Removing 60-Foot Wood Pole	EACH

Payment is full compensation for removing wood pole; all excavation and backfill; and removal and disposal of material.

198. Luminaires Floodlight 400W HPS, Item SPV.0060.1008.

A Description

The work under this item shall consist of furnishing and installing 400 Watt HPS floodlight luminaires, with photoelectric control, in a 480 Volt configuration and according to standard spec 659.

B Materials

Appropriate Floodlight Models include or approved equal:

GE Turnpike, General Elec. Product Number: RPF-S40S240V-M2GL-N3-GRK.

GE Turnpike, General Elec. Product Number: RPF-S40S480V-M2GL-N3-GRK.

Holophane Predator, Holophane Product Number: PF-400HP-240V-BN1KR

Holophane Predator, Holophane Product Number: PF-400HP-480V-BN1KR

Lithonia Lighting, Lithonia Product Number: 170S 400S HPN 240V TS PER

Lithonia Lighting, Lithonia Product Number: 170S 400S HPN 480V TS PER

Units shall have a 6x6 or 7x7 light distribution. Units shall have a photoelectric cell for control of the fixture operation.

C Construction

Install the luminaire on the light poles at locations specified in lighting plan according to standard spec 659.2.1, and 659.3.1, and wired and fused according to standard spec 659.3.2 and plan details. Luminaires shall be orientated (0 deg = North) as shown and at an angle of 45-degrees from the vertical. Units shall be suitable for mounting to Bullhorn Bracket on the poles provided under bid item Poles Type A, 657.0375.

D Measurement

The department will measure Luminaires Floodlight 400W HPS by each individual luminaire, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1008	Luminaires Floodlight 400W HPS	EACH

Payment is full compensation for all the work and materials required under this bid item.

199. Remove Electrical Service Meter Breaker Pedestal Lighting, Item SPV.0060.1009.

A Description

This special provision describes removing an existing electrical service meter breaker pedestal, supports and any additional electrical equipment associated with the service including disconnect switches and overall enclosure, disconnecting all connected power wires, and disposing of the equipment appropriately.

B (**Vacant).**

C Construction

Coordinate for removal of the existing electrical service meter breaker pedestal with WE Energies.

Disconnect all connected power wires, remove the pedestal, include existing electrical service meter breaker, supports and disconnect switches if present and dispose of all materials properly away from the project area.

D Measurement

The department will measure Remove Electrical Service Meter Breaker Pedestal Lighting by the unit, acceptably removed.

E Payment

The department will pay for measured quantities at the contract unit price under the following item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1009	Remove Electrical Service Meter Breaker Pedestal Lighting	EACH

Payment is full compensation for coordination with WE Energies; for disconnection of wires; and for removal of the pedestal and any additional material of the service.

200. Concrete Bases Type B, Item SPV.0060.1010.

A Description

The work under this item consists of furnishing and installing Concrete Base Type B at locations specified in plans, according to plan details, the applicable portions of standard spec 654, and as hereinafter provided. Concrete base design shall fall within the parameters shown in the plans and as enumerated below; and certified by vendor to support the required loads.

B (Vacant)

C Construction

The detail of construction with the exceptions of height above grade and conduit size shall be as defined in standard detail for Type 8 base.

D Measurement

The department will measure Concrete Bases Type B by each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1010	Concrete Bases Type B	EACH

Payment is full compensation according to standard spec 654.5.

201. Concrete Bases Type 5 Special, Item SPV.0060.1011.

A Description

This special provision describes furnishing and installing Concrete Bases Type 5 Special as shown on the plans, according to standard spec 654, and as hereinafter provided.

B Materials

Materials shall conform to pertinent requirements of standard spec 654.2.

C Construction

Construction shall conform to pertinent requirements of standard spec 654.3. The concrete base shall be the dimensions as shown on the plans.

D Measurement

The department will measure Concrete Bases Type 5 Special as each individual base, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1011	Concrete Bases Type 5 Special	EACH

Payment shall be made as described in standard spec 654.5(2).

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202. Remove and Salvage Municipal Lighting Units, Item SPV.0060.1012.

A Description

This special provision describes removing, salvaging, storing, and transporting of existing municipal lighting units according to the pertinent provisions of standard spec 204 and as hereinafter provided. Specific removal items are noted in the plans.

B (Vacant)

C Construction

Arrange for the de-energizing of the lighting with the local electrical utility after receiving approval from the engineer that the existing lighting can be removed.

Notify the City of Glendale, Mr. Charlie Imig at (414) 228-1710, or Mr. Steve Scheldroup at (414) 228-1749, at least five working days prior to the removal of the city lighting equipment. Complete the removal work as soon as possible following shut down of this equipment. Inspect salvaged equipment for damage or defects.

The city assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or nonworking lighting equipment to the engineer and city. Any equipment not identified as damaged or not working, prior to removal, shall be replaced by the contractor at no cost to the department.

Remove all standards and poles per plan, and remove transformer bases, cabling/wiring, arms, luminaires, and mounting devices. Dispose of non-salvaged materials off the project site and off the right-of-way. Deliver the salvaged city light poles, luminaire arms, and luminaires to the City of Glendale Department of Public Works Yard at 5930 N. Glen Park Road. Contact Mr. Charlie Imig at (414) 228-1710, or Mr. Steve Scheldroup at (414) 228-1749), at least five working days prior to delivery to make arrangements.

D Measurement

The department will measure Remove and Salvage Municipal Lighting Units by each unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1012	Remove and Salvage Municipal Lighting Units	EACH

Payment is full compensation for removing, disassembling lighting equipment, scrapping of some materials, disposing of scrap material and cabling/wiring, protecting from damage, and for delivering the salvaged materials to the city.

203. Install Salvaged Municipal Lighting Units, Item SPV.0060.1013.

A Description

This special provision describes installing salvaged municipal lighting units with a breakaway/transformer base, pole, arm, luminaire, and all necessary mounting hardware, according to standard spec 655, 656, 657, and 659, the Wisconsin Electrical Code, as shown on the plans and as hereinafter provided.

B Materials

Materials included are:

- Salvaged Municipal Pole, breakaway/transformer base, arm, and luminaires.
- Installation Hardware

C Construction

Transport the salvaged lighting unit from its stored location to the project site. Inspect the salvaged Lighting unit prior to installation. Install the salvaged lighting units as shown in the plans. Electrical work under this item shall be completed by a journeyman electrician or be completed under the supervision of a journeyman electrician. Legal status or standing as a journeyman electrician shall be certified or otherwise documented to the engineer before any electrical work may begin.

D Measurement

The department will measure the Install Salvaged Municipal Lighting Unit by each individual unit, acceptably installed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1013	Install Salvaged Municipal Lighting Units	EACH

Payment is full compensation for the transportation of the salvaged municipal lighting units to the project location; installation; furnishing of all necessary hardware; making all wiring connections and conduit connections; and for any necessary restoration, including backfill, topsoil, and seeding.

204. Wood Pole Lighting 60-Foot, Item SPV.0060.1014.

A Description

The work under these items include furnishing and installing 60-foot wood pole, arm(s) and floodlight(s), junction box, grounding system, and lightning protection system, as shown on the plans, according to standard spec 651 and 659, and as hereinafter provided.

B Materials

Furnish wood poles, Class 4 or larger with a 60-foot minimum overall length. The poles shall be western red cedar according to ANSI standards 05.1. Pressure treatment shall be 5% pentachlorophenol with a minimum of 8 pounds per cubic foot net retention of the oil-borne preservative. All poles shall be shaved the entire length.

Luminaire arm and luminaire for wood pole lighting units and temporary wood pole lighting units shall be per standard spec 657.2.4 and 659.2, respectively.

Floodlight mounting bracket arms for wood pole lighting units will be as shown on plan details. The floodlights are provided under separate bid items SPV.0060.1007.

C Construction

This work shall be done according to the pertinent provisions of standard spec 611.3.1.1 and as shown on the plans. Install #4 AWG equipment grounding wire exothermically bonded to a 5/8 inch by 8 foot copper clad grounding electrode. Install cable guard, NEMA 3R junction box near mounting arm, and NEMA 4X junction box at 3 feet above grade for fuses and splice on wood pole units. Install air terminal with #2 AWG grounding wire exothermically bonded to a 5/8-inch by 8-foot copper clad grounding electrode for lightning protection. Install #2 AWG bare copper exothermically bonding between grounding electrodes. Install conduit and wiring between junction boxes, wire racks, and required hardware as necessary and as shown on lighting plans and detail drawings.

Install luminaire arm for wood pole lighting units as shown on the plans and details and as per applicable portion of standard spec 657.3 and 659.3.

D Measurement

The department will measure Wood Pole Lighting 60-Foot as a unit for each individual item, installed completely as described above.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1014	Wood Pole Lighting 60-Foot	EACH

Payment is full compensation for furnishing and installing items as mentioned above; and for all excavation and backfill.

205. Decorative Lighting Pole and LED Luminaire Single, Item SPV.0060.1021; Decorative Lighting Pole and LED Luminaires Twin, Item SPV.0060.1022.

A Description

The work under this item consists of installing decorative pole and LED luminaires at the location specified in plans for City of Glendale, according to plan detail, the applicable portion or standard spec 651 and 659 of standard specifications, and as hereinafter provided.

B Materials

The decorative poles and Luminaires are proprietary to match City of Glendale street lighting requirement.

- Decorative Lighting Pole and LED Luminaire Single:

  RFD207740

  Pole: SPEC SCH 80 PRVA 18 30 W/BANNER PROVISION BASECVR-TRANCOL-RAL3007 OVER GALV

  Base Cover/Transition Collar: BASECVR RAL3007, TRANCOL RAL3007

  Banner Arm: BAB24A4 SPECIAL W TAB RAL3007

  RFC208642

  Single Roadway Arm: 1BC90R15F(RAL3007)-QSM

  Luminaire: Holophane - MPL2P20S40KASRAL3007TG3SDS

- Decorative Lighting Pole and LED Luminaires Twin:

  RFD207740

  Pole: SPEC SCH 80 PRVA 18 30 W/BANNER PROVISION BASECVR-TRANCOL-RAL3007 OVER GALV

  Base Cover/Transition: BASECVR RAL3007. TRANCOL RAL3007

  Banner Arm: BAB24A4 SPECIAL W TAB RAL3007

  RFD208642

  Twin Roadway Arm: 2BC180R15CCSH RAL3007-QSM

  Luminaire: Holophane - (2) MPL2P20S40KASRAL3007TG3SDS

Concrete bases to be similar WisDOT Concrete Bases Type 5, except the bolt circle to be modified to 12.5-inch. Contractor to confirm bolt circle with pole supplier. Concrete bases to be paid under separate item SPV.0060.1023 Concrete Bases Type 5 Modified.

C Construction

Install Decorative Lighting Pole and LED Luminaire Single and Decorative Lighting Pole and LED Luminaires Twin according to the pertinent provisions of standard spec 659 and as the manufacturer directs. Mount unit square and true to the road. Fixture to be fused individually, with fuses located in the pole (5 Amp type FNQ). Provide a fuse for the fixture in the pole base immediately to the north of the fixtures. Provide engraved nameplates showing fuse location for each luminaire. Perform splices in the pole or conduit body with gel-filled wire nuts. Provide circuit identification in the base where the circuit is routed to the luminaire. Identification to include fixture number, and circuit number. Prior to being placed in service, clean the units. Provide #12 AWG wiring from the fixture to the base or conduit body in the main circuit path as part of this item.

D Measurement

The department will measure Decorative Pole and LED Luminaire Single and Decorative Pole and LED Luminaires Twin as each individual unit acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1021	Decorative Pole and LED Luminaire Single	EACH
SPV.0060.1022	Decorative Pole and LED Luminaires Twin	EACH

Payment is full compensation for furnishing all materials; and installing a complete pole and luminaire unit.

206. Concrete Bases Type 5 Modified, Item SPV.0060.1023.

A Description

The work under this item consists of furnishing and installing Concrete Base Type 5 Modified at locations specified in plans, according to plan details, the applicable portions of standard spec 654, and as hereinafter provided. Concrete base design shall fall within the parameters shown in the plans and as enumerated below; and certified by vendor to support the required loads.

B (Vacant)

C Construction

The detail of construction with the exceptions of the bolt circle size shall be as defined in standard detail for Concrete Base Type 5.

Bolt circle of base to be 12.5-inch, confirm with pole supplier.

D Measurement

The department will measure Concrete Bases Type 5 Modified by each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1023	Concrete Bases Type 5 Modified	EACH

Payment is full compensation according to standard spec 654.5.

207. Removing Electrical Service Meter Breaker Pedestal, Item SPV.0060.2000.

A Description

This special provision describes removing an existing electrical service meter breaker pedestal, disconnecting all connected power wires, and disposing of the equipment appropriately.

B (Vacant)

C Construction

Coordinate for removal of the existing electrical service meter breaker pedestal with WE Energies.

Disconnect all connected power wires, remove the pedestal and dispose of all materials properly away from the project area.

D Measurement

The department will measure Removing Electrical Service Meter Breaker Pedestal by the unit, acceptably removed.

E Payment

The department will pay for measured quantities at the contract unit price under the following item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2000	Removing Electrical Service Meter Breaker Pedestal	EACH

Payment is full compensation for coordination with WE Energies; for disconnection of wires; and for removal and disposal of the pedestal.

208. Removing Controller Cabinet, Item SPV.0060.2001.

A Description

This special provision describes removing an existing controller cabinet.

B (Vacant)

C Construction

Remove controller cabinets at the locations shown on the plans, or as directed by the engineer.

Do not remove the existing ITS control cabinets, or any other associated equipment until necessary, or as directed by the engineer. Carefully remove the existing cabinets from the concrete bases, together with all components in such a manner as to safeguard all parts and wiring from damage or loss. Salvage and store the cabinet and contents for pick up by the department.

Prior to removing the existing ITS control cabinets, remove all cables being terminated in the cabinet. Cut existing cables flush with cabinet base and cap existing conduits. Dispose of the cables properly away from the project area.

D Measurement

The department will measure Removing Controller Cabinet by the unit, acceptably removed, salvaged, and stored.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2001	Removing Controller Cabinet	EACH

Payment is full compensation for removal and storage of the controller cabinet; disconnecting all associated wires and cables; and for capping existing conduits.

209. Removing Controller Cabinet Base, Item SPV.0060.2002.

A Description

This special provision describes removing an existing controller cabinet concrete base.

B Materials

Existing controller cabinet base, including concrete masonry, ground rods, masonry anchors, and restoration materials such as topsoil, seeding, mulch, and fertilizer according to the pertinent provisions of standard spec 201, 625, 627, 629, 630, 636, and 640.

C Construction

Remove and dispose of the concrete foundation and all other pertinent materials, and restore the disturbed area by placing 4-inches of topsoil, and fertilize, seed, mulch, and seed water all disturbed areas according to the pertinent requirements of the standard specifications.

D Measurement

The department will measure Removing Controller Cabinet Base by the unit, removed from the ground, removed from the project site, and the disturbed area restored according to the contract.

E Payment

The department will pay for measured quantities at the contract unit price under the following item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2002	Removing Controller Cabinet Base	EACH

Payment is full compensation for removing and disposing of a concrete controller cabinet base, including masonry anchors, ground rods, and concrete masonry; for topsoil, fertilizer, seed, mulch, and seed water.

210. Removing Ramp Control Signal Assembly Sidemount, Item SPV.0060.2004.

A Description

This special provision describes removing an existing sidemount ramp control signal assembly.

B Materials

Materials included in sidemount ramp control signal assemblies are:

1. Traffic signal standards.
2. Pedestal bases for traffic signal use.
3. Vehicular traffic signal heads.
4. Signal mounting brackets.
5. Sign mounting brackets.
6. Enforcement signal displays.

C Construction

Remove sidemount ramp control signal assemblies at the locations shown in the plans, or as directed by the engineer. Salvage the signal assemblies for the department to pick up, or dispose of them properly as directed by the engineer.

All work shall be according to the applicable requirements of standard spec 655, 656, 657, and 658, the Wisconsin Electrical Code, these special provisions, and the details shown in the plans.

Salvage and store all removed materials for pickup by the department. Coordinate with the engineer on a schedule to have the removed items picked up. Maintain all materials in a condition suitable for reutilization. Replace all items damaged during construction operations.

Electrical work under this item shall be completed by a journeyman electrician or be completed under the supervision of a journeyman electrician. Legal status or standing as a journeyman electrician shall be certified or otherwise documented to the engineer before any electrical work may begin.

D Measurement

The department will measure Removing Ramp Control Signal Assembly Sidemount by the unit, acceptably removed, salvaged, and stored.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2004	Removing Ramp Control Signal Assembly Sidemount	EACH

Payment is full compensation for removal and storage of the ramp control signal assembly; disconnecting all wiring connections; removing all conduit connections; for any necessary restoration, including backfill, topsoil, and seeding.

211. Remove Pole, Item SPV.0060.2008.

A Description

This special provision describes removing an existing Type 2, 3, 4, 5, 6, or 7 pole.

B Materials

Existing poles, including antennae, conduit and cabling, and any other equipment mounted to the poles.

C Construction

Disconnect all cables and wiring that are mounted on or in the poles, and carefully remove the pole from the concrete footing. Store all hardware from the pole for pick up by the department. Dispose of the pole and any conduit and cabling appropriately away from the project area.

D Measurement

The department will measure Remove Pole as a unit, removed from the concrete base, including equipment and attached mounting hardware, and disposed of appropriately away from the project area according to the contract.

E Payment

The department will pay for measured quantities at the contract unit price under the following item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2008	Remove Pole	EACH

Payment is full compensation for disconnecting any necessary wiring; removing the poles and equipment mounted on the poles; and storing the poles and any equipment attached to them.

212. Temporary Poles Wood 40-Foot, Item SPV.0060.2010.

A Description

This special provision describes furnishing and installing a Class 4, 40-Foot wood pole for use during the duration of the contract.

B Materials

Furnish wood poles that are Class 4 or larger with a 40-Foot minimum overall length. The poles shall be western red cedar according to ANSI standards 05.1. Pressure treatment shall be 5% pentachlorophenol with a minimum of 8 pounds per cubic foot net retention of the oil-borne preservative. Poles shall be shaved the entire length.

C Construction

Place the wood pole in the ground as shown in the plans or as directed by the engineer and mount detectors and solar power assemblies as shown in the plans and as directed and paid for under other pay items in this contract.

D Measurement

The department will measure Temporary Poles Wood 40-Foot as each individual pole, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2010	Temporary Poles Wood 40-Foot	EACH

Payment is full compensation for furnishing and installing the wood post for the duration of the project and all excavating and backfilling.

213. Temporary Pole Wood 60-Foot, Item SPV.0060.2011.

A Description

This special provision describes furnishing and installing a Class 4, 60-Foot wood pole for use during the duration of the contract.

B Materials

Furnish wood poles that are Class 4 or larger with a 60-Foot minimum overall length. The poles shall be western red cedar according to ANSI standards 05.1. Pressure treatment shall be 5% pentachlorophenol with a minimum of 8 pounds per cubic foot net retention of the oil-borne preservative. Poles shall be shaved the entire length.

C Construction

Place the wood pole in the ground as shown in the plans or as directed by the engineer and mount detectors and solar power assemblies as shown in the plans and as directed and paid for under other pay items in this contract.

D Measurement

The department will measure Temporary Poles Wood 60-Foot as each individual pole, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2011	Temporary Poles Wood 60-Foot	EACH

Payment is full compensation for furnishing and installing the wood post for the duration of the project and all excavating and backfilling.

214. Ground Rod, Item SPV.0060.2013.

A Description

This special provision describes installing a ground rod and ground wire.

B Materials

Ground rod shall be copper clad steel with cladding 13 mils thick. The minimum diameter is 5/8-inch and the minimum length is eight feet. Ground wire shall be AWG # 6 bare, solid copper.

C Construction

Use exothermic welding to connect the ground wire to the rod. Install the rod vertically, or as close to vertical as conditions permit. Select locations with moist soil, if available. Place the rod at least 6 feet from all other ground rods.

D Measurement

The department will measure Ground Rod by the unit, acceptably installed.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2013	Ground Rod	EACH

Payment is full compensation for installation of the ground rod and ground wire; welding and connections at both ends of the ground wire.

215. Refocus Vehicle Detector Assembly, Item SPV.0060.2015.

A Description

This special provision describes refocusing an existing microwave detector, or detectors, on a pole or other structure, for operation with a new lane configuration.

B Materials

Materials include Electronic Integrated Systems, Inc. (EIS) Remote Traffic Microwave Sensors (RTMS) and the respective poles they have been mounted on.

C Construction

Coordinate all planned down-time of vehicle detector assemblies with the STOC at (414) 227-2166. Notify the STOC an amount of time ahead of planned down-time equal to the planned down-time. Examples would be that a 4-hour temporary down time of the system would require notification 4-hours ahead of time while an 8-hour planned down-time would require 8-hours of advance notification.

Refocus and recalibrate the detector each time the adjacent traffic pattern is changed due to a change in traffic control or construction staging.

Verify to the satisfaction of the engineer that the existing detector assembly is working properly. Inspect the vehicle detector assembly for damage.

D Measurement

The department will measure Refocus Vehicle Detector Assembly by the unit, acceptably refocused and operational.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2015	Refocus Vehicle Detector Assembly	EACH

Payment is full compensation for making the detector fully operational with a new lane configuration.

216. Install Ethernet Radio, Item SPV.0060.2016.

A Description

This special provision describes installing a state-furnished, or salvaged, 5.8 GHz Ethernet bridge access point or subscriber unit at a new or existing cabinet or new or existing pole.

B Materials

Materials will include state-furnished materials and contractor furnished materials.

State-furnished or salvaged, materials include the following:

- One 5.8 GHz Ethernet bridge with integral antenna.
- One 5.8 GHz Ethernet bridge power converter.
- One 5.8 GHz Ethernet bridge mounting bracket.

Contractor-furnished materials include the following:

- Mounting hardware.
- Outdoor rated Category 6 communications cable.
- Inline network cable surge suppressor.

C Construction

Bond the surge suppressor to the cabinet grounding system.

Install the 5.8 GHz Ethernet Bridge in a point-to-point or point-to-multipoint configuration as shown on the plans and as directed by the engineer.

Use the manufacturer’s set-up software to configure the Ethernet radio for its intended use. Use the signal strength indicator on the radio to find the optimum position. Also perform a frequency analysis to determine the optimal hop pattern of the radios and test the continuity of the link by polling the radios using the software provided. The position of the radio and the hop pattern shall be adjusted until the polls show at least 200 consecutive polling intervals have been successfully transmitted and received. Demonstrate to the engineer that the hop pattern selected corresponds to the optimal noise free frequencies identified in the frequency analysis. Deliver 3 copies of the final test results for signal strength, frequency analysis, and test polling.

D Measurement

The department will measure Install Ethernet Radio as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2016	Install Ethernet Radio	EACH

Payment is full compensation for installing, setting up, configuring, and testing the 5.8 GHz Ethernet bridge radio, surge suppressor, cables, and connections; and required transportation.

217. Signal Assembly Advance Flasher Type 1, Item SPV.0060.2018.

A Description

This special provision describes providing and installing type 1 advance flasher traffic signal assemblies for use with ramp meters, including the pedestal base, traffic signal standard, traffic signal heads, traffic signal mounting brackets, sign mounting brackets, and wiring within the assembly.

B Materials

Provide pedestal bases that meet the requirements of standard spec 657.2.6.

Provide traffic signal standards that meet the requirements of standard spec 657.2.5.

Provide two single-section 12-inch yellow face traffic signal heads meet the requirements of standard spec 658.

Provide traffic signal mounting hardware that meets the requirements of standard spec 658.

Provide sign mounting brackets that meet the requirements of standard spec 637.2.4.

Provide wiring within the assembly and from the signal heads to the pedestal base that meets the requirements of standard spec 655.2.2.

C Construction

Perform work conforming to standard spec 637, 657, and 658 and the Wisconsin State Electrical Code (WSEC), and as the plans show.

Ensure that the positioning, mounting height, and lateral placement of signal heads are according to the MUTCD. The contractor may be required to revisit locations to re-adjust the signal heads once the engineer observes the metering operation of the ramp.

For traffic signal cable that extends from the signal base to the terminal strips in the signal heads, provide the number of conductors as the plans show. Match the color of the conductor to the lens color.

Install conductors in continuous lengths without splices from terminal to terminal. Splice only at hand holes at the bases of the standards or poles. Do not splice in underground pull boxes or conduit.

Group and identify sets of conductors in signal cables, 3 each per signal phase, whether insulated with red, yellow, green, or other colors, at each pertinent termination. Use conductors colored to match lens colors first. The engineer shall approve the method of identification. Furnish 2 as-built cable layout drawings with labeling to the engineer upon completion of the work. Place one of those copies in the cabinet.

Connect the white 14 AWG wires to a 10 AWG current carrying neutral. Make the connection with a wire-nut. Extend the 10 AWG wire from the current carrying neutral grounding strip in the ramp meter processor assembly cabinet, being installed from base to base to the far end of each signal conduit run.

Furnish the 10 AWG USE XLP current carrying grounded conductor in white colored insulation.

Furnish the 10 AWG USE XLP equipment-grounding wire in green colored insulation.

Furnish equipment and appliances necessary to test the complete installation of the ramp meter control signal assembly, including electrical conductors.

D Measurement

The department will measure Signal Assembly Advance Flasher Type 1 as each individual assembly, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2018	Signal Assembly Advance Flasher Type 1	EACH

Payment is full compensation for providing and installing traffic signal standards, pedestal bases, signal heads, signal mounting brackets, cabling within the assembly, and the sign support system; for providing electrical connections and grounding; and for testing.

218. Install State-Furnished Pole, Item SPV.0060.2021.

A Description

This special provision describes installing a state-furnished type 5 or type 6 pole and a state-furnished transformer base on a new or existing concrete base, paid for separately.

B Materials

Materials include state-furnished pole and transformer base, and new hardware (nuts and washers) required to mount the pole and transformer base to a new concrete base (paid for separately).

C Construction

Perform work conforming to standard spec 657 and the WSEC, and as the plans show.

D Measurement

The department will measure Install State-Furnished Pole as each individual assembly, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2021	Install State-Furnished Pole	EACH

Payment is full compensation for installing a state-furnished pole and transformer base on a new or existing concrete base, and for providing new mounting hardware.

219. Loop Detector Protection, Item SPV.0060.2024.

A Description

This special provision describes furnishing and installing a loop detector splice kit for the purpose of protecting the loop detector wire between installation of the loop detector and installation of the loop detector lead-in-cable.

B Materials

Use cast-in-place splice kits from an approved manufacturer.

C Construction

Provide an additional 10-feet of slack loop detector wire connected to the installed loop detector in the pull box or manhole. Install the splice capsule conforming to the manufacturer’s instructions around both ends of the slack loop detector wire to protect the wire until it may be permanently spliced onto the loop detector lead-in cable. At the time of splicing onto the permanent loop detector lead-in cable, cut the excess slack from the loop detector wire and discard the wire and the splice kit installed to protect it.

D Measurement

The department will measure Loop Detector Protection by the unit, completely installed according to the contract.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2024	Loop Detector Protection	EACH

Payment is full compensation for furnishing and installing the required protection splice kits.

220. Signal Assembly Ramp Control Overhead, Item SPV.0060.2025.

A Description

This special provision describes providing and installing overhead traffic signal assemblies for use with ramp meters, including, traffic signal heads, traffic signal mounting brackets, sign mounting brackets, and wiring within the respective overhead sign support.

B Materials

Provide one three-section 12-inch face traffic signal head that meets the requirements of standard spec 658.

Provide traffic signal mounting hardware that meets the requirements of standard spec 658.

Provide sign mounting brackets that meet the requirements of standard spec 637.2.4.

Provide wiring within the overhead sign support that meets the requirements of standard spec 655.2.2.

C Construction

Perform work conforming to standard spec 637 and 658 and the WSEC, and as the plans show.

Ensure that the positioning, mounting height, and lateral placement of signal heads are according to the MUTCD. For overhead signals, provide a clearance from the pavement surface of the roadway to the lowest part of the mast arm, or the lowest part of any object mounted on the mast arm, between 17 feet and 19 feet. The contractor may be required to revisit locations to re-adjust the signal heads once the engineer observes the metering operation of the ramp.

For traffic signal cable that extends from the signal base to the terminal strips in the signal heads, provide the number of conductors as the plans show. Match the color of the conductor to the lens color.

Install conductors in continuous lengths without splices from terminal to terminal. Splice only at hand holes at the bases of the standards or poles. Do not splice in underground pull boxes or conduit.

Group and identify sets of conductors in signal cables, 3 each per signal phase, whether insulated with red, yellow, green, or other colors, at each pertinent termination. Use conductors colored to match lens colors first. The engineer shall approve the method of identification. Furnish 2 as-built cable layout drawings with labeling to the engineer upon completion of the work. Place one of those copies in the cabinet.

Connect the white 14 AWG wires to a 10 AWG current carrying neutral. Make the connection with a wire-nut. Extend the 10 AWG wire from the current carrying neutral grounding strip in the ramp meter processor assembly cabinet, being installed from base to base to the far end of each signal conduit run.

Furnish the 10 AWG USE XLP current carrying grounded conductor in white colored insulation.

Furnish the 10 AWG USE XLP equipment-grounding wire in green colored insulation.

Furnish equipment and appliances necessary to test the complete installation of the ramp meter control signal assembly, including electrical conductors.

D Measurement

The department will measure Signal Assembly Ramp Control Overhead as each individual assembly, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2025	Signal Assembly Ramp Control Overhead	EACH

Payment is full compensation for providing and installing, signal heads, signal mounting brackets, cabling within the overhead sign support, and the sign support system; for providing electrical connections and grounding; and for testing.

221. Install Temporary Traffic Camera Assembly, Item SPV.0060.2026.

A Description

This special provision describes assembling from a combination of state-furnished and contractor furnished materials, as well as materials furnished through other pay items, a temporary traffic monitoring camera assembly and installing, and integrating the assembly into the existing system. Assembly will be done on a 60-foot wood pole (provided under other pay items in the contract) and will include communications through 5.8 GHz Ethernet radios.

B Materials

Materials will include state-furnished materials and contractor furnished materials.

State-furnished materials include the following:

- One Internet Protocol Dome CCTV camera.
- One solar power system consisting of 4-85W panels, 4-120 Amp-Hour batteries, a solar power controller, and two solar power cabinets to house the batteries, controller, and ethernet switch.
- One mid-span Power-Over-Ethernet power injector.

Contractor furnished materials include the following:

- Outdoor rated power cable between solar power system output and ethernet switch, CCTV camera, and ethernet radios.
- Outdoor rated power cable between the temporary traffic camera assembly and its associated temporary traffic camera power assembly (provided under other pay items in the contract).
- Mounting hardware for solar power system and CCTV Camera.
- 2-inch schedule 80 nonmetallic conduit.
- 2-inch stainless steel bands.
- Category 5 (or better) network cable between the wireless Ethernet bridge and the power injector, and between the power injector and the CCTV camera.

C Construction

Install the wood pole according to industry standards for supplied pole length.

Install the CCTV camera as required in standard spec 677, including addenda to that article included in this project.

Integrate the 5.8 GHz wireless Ethernet radios with the existing communications system as shown on the plans or as directed by the engineer.

Install the solar panels facing south on the pole with the devices to be powered. If a compass is used, a correction must be made for the difference between magnetic north and true north. Install the solar panels at a tilt angle of approximately 60 degrees. The tilt angle shall be considered the angle from horizontal to the front, or face of the solar panel.

Mount the cabinets to the pole by the two cast aluminum mounting brackets which are already attached to the back of the cabinet. The brackets shall be attached to the pole using stainless steel bands or U-bolts.

Install the cabling, ensuring that cables enter the cabinet only through the bottom, and that strain relief fittings are used to seal cable entrance points. Connect the panel to the charge controller, connecting the white wire to the positive (+) terminal and the black wire to the negative terminal (-).

D Measurement

The department will measure Temporary Traffic Camera Assembly as each individual unit consisting of one CCTV camera and one CCTV camera solar power assembly, acceptably installed and integrated into the existing FTMS system.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2026	Install Temporary Traffic Camera Assembly	EACH

Payment is full compensation for providing the contractor furnished materials, assembling the state-furnished and contractor furnished materials, installing the camera assembly, connecting the camera assembly to the 5.8 GHz Ethernet radios, and for integrating the assembly into the existing FTMS system, and making the assembly functional.

222. Install Temporary Traffic Camera Power Assembly, Item SPV.0060.2027.

A Description

This special provision describes assembling from a combination of state-furnished and contractor furnished materials, as well as materials furnished through other pay items, a temporary traffic monitoring camera assembly and installing, and integrating the assembly into the existing system. Assembly will be done on a 40-foot wood pole (provided under other pay items in the contract) and will include connecting an associated temporary traffic camera assembly.

B Materials

Materials will include state-furnished materials and contractor furnished materials.

State-furnished materials include the following:

- Two solar power systems consisting of 8-85W panels, 8-120 Amp-Hour batteries, two solar power controllers, and two solar power cabinets to house the batteries.

Contractor furnished materials include the following:

- Outdoor rated power cable to connect the solar power controllers.
- Outdoor rated power cable between the temporary traffic camera power assembly and its associated temporary traffic camera assembly (provided under other pay items in the contract).
- Mounting hardware for solar power system.

C Construction

Install the wood pole according to industry standards for supplied pole length.

Install the CCTV camera as required in standard spec 677, including addenda to that article included in this project.

Connect the temporary solar power assembly to the associated temporary traffic camera assembly as shown on the plans or as directed by the engineer.

Install the solar panels facing south on the pole with the devices to be powered. If a compass is used, a correction must be made for the difference between magnetic north and true north. Install the solar panels at a tilt angle of approximately 60 degrees. The tilt angle shall be considered the angle from horizontal to the front, or face of the solar panel.

Mount the cabinets to the pole by the two cast aluminum mounting brackets which are already attached to the back of the cabinet. The brackets shall be attached to the pole using stainless steel bands or U-bolts.

Install the cabling, ensuring that cables enter the cabinet only through the bottom, and that strain relief fittings are used to seal cable entrance points. Connect the panel to the charge controller, connecting the white wire to the positive (+) terminal and the black wire to the negative terminal (-).

D Measurement

The department will measure Temporary Traffic Camera Assembly as each individual unit consisting of one CCTV camera and one CCTV camera solar power assembly, acceptably installed and integrated into the existing FTMS system.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2027	Install Temporary Traffic Camera Assembly	EACH

Payment is full compensation for providing the contractor furnished materials, assembling the state-furnished and contractor furnished materials, installing the camera assembly, connecting the camera assembly to the 5.8 GHz Ethernet radios, and for integrating the assembly into the existing FTMS system, and making the assembly functional.

223. Remove Temporary Traffic Camera Assembly, Item SPV.0060.2028.

A Description

This special provision describes removing a combination of state-furnished and contractor furnished materials, as well as materials furnished through other pay items, a temporary traffic monitoring camera assembly and salvaging and returning the components to the department.

B Materials

Materials will include materials to be salvaged and returned to the department and contractor materials to be returned to the contractor for re-use or disposal.

Materials to be salvaged and returned to the department include the following:

- One Internet Protocol Dome CCTV camera.
- One solar power system consisting of 4-85W panels, 4-120 Amp-Hour batteries, a solar power controller, and two solar power cabinets to house the batteries, controller, and ethernet switch.
- One mid-span Power-Over-Ethernet power injector.
- 5.8 Ghz ethernet radios.
- Ethernet switch.

Materials to be returned to the contractor include:

- Outdoor rated power cable between solar power system output and ethernet switch, CCTV camera, and ethernet radios.
- Outdoor rated power cable between the temporary traffic camera assembly and its associated temporary traffic camera power assembly (provided under other pay items in the contract).
- Mounting hardware for solar power system and CCTV Camera.
- 2-inch schedule 80 nonmetallic conduit.
- 2-inch stainless steel bands.
- Category 5 (or better) network cable between the wireless Ethernet bridge and the power injector, and between the power injector and the CCTV camera.
- 60-foot wood pole.

C Construction

At the direction of the engineer remove the Temporary Traffic Camera Assembly and disassemble to separate the contractor-furnished materials from the department furnished materials. Return the department furnished materials to the department and dispose of contractor-furnished materials appropriately or retain.

D Measurement

The department will measure Remove Temporary Traffic Camera Assembly as each individual unit consisting of one CCTV camera and one CCTV camera solar power assembly, acceptably removed from the project site and materials returned to the department.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2028	Remove Temporary Traffic Camera Assembly	EACH

Payment is full compensation for removing the materials and returning them to the department.

224. Remove Temporary Traffic Camera Power Assembly, Item SPV.0060.2029.

A Description

This special provision describes removing a combination of state-furnished and contractor furnished materials, as well as materials furnished through other pay items, a temporary traffic monitoring camera assembly and salvaging and returning the components to the department.

B Materials

Materials will include materials to be salvaged and returned to the department and contractor materials to be returned to the contractor for re-use or disposal.

Materials to be salvaged and returned to the department include the following:

- Two solar power systems consisting of 8-85W panels, 8-120 Amp-Hour batteries, two solar power controllers, and two solar power cabinets to house the batteries.

Materials to be returned to the contractor include:

- Outdoor rated power cable between solar power system output and ethernet switch, CCTV camera, and ethernet radios.
- Outdoor rated power cable between the temporary traffic camera assembly and its associated temporary traffic camera power assembly (provided under other pay items in the contract).
- Mounting hardware for solar power system and CCTV Camera.
- 2-inch schedule 80 nonmetallic conduit.
- 2-inch stainless steel bands.
- Category 5 (or better) network cable between the wireless Ethernet bridge and the power injector, and between the power injector and the CCTV camera.
- 40-foot wood pole.

C Construction

At the direction of the engineer remove the Temporary Traffic Camera Power Assembly and disassemble to separate the contractor-furnished materials from the department furnished materials. Return the department furnished materials to the department and dispose of contractor-furnished materials appropriately or retain.

D Measurement

The department will measure Remove Temporary Traffic Power Camera Assembly as each individual unit consisting of one CCTV camera and one CCTV camera solar power assembly, acceptably removed from the project site and materials returned to the department.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2029	Remove Temporary Traffic Camera Power Assembly	EACH

Payment is full compensation for providing the contractor furnished materials, assembling the state-furnished and contractor furnished materials, installing the camera assembly, connecting the camera assembly to the 5.8 GHz Ethernet radios, and for integrating the assembly into the existing FTMS system, and making the assembly functional.

225. Install Poles Type 9, Item SPV.0060.3001; Install Poles Type 10, Item SPV.0060.3002; Install Poles Type 9-Special, Item SPV.0060.3003; Install Poles Type 10-Special, Item SPV.0060.3004; Install Poles Type 13, SPV.0060.3006; Install Monotube Arms 15-FT, Item SPV.0060.3007; Install Monotube Arms 20-FT, Item SPV.0060.3008; Install Monotube Arms 25-FT, Item SPV.0060.3009; Install Monotube Arms 30-FT, Item SPV.0060.3010; Install Monotube Arms 35-FT-Special, Item SPV.0060.3012; Install Monotube Arms 40-FT-Special, Item SPV.0060.3014; Install Monotube Arms 45-FT-Special, Item SPV.0060.3016; Install Monotube Arms 50-FT, Item SPV.0060.3017; Install Monotube Arms 55-FT, Item SPV.0060.3018; Install Luminaire Arms Steel 15-FT, Item SPV.0060.3019.

A Description

This special provision describes installing state furnished materials conforming to standard spec 657, details shown in the plans, and as modified in this special provision.

B Materials

The department will furnish the monotube poles, monotube arms and luminaire arms.

Provide all other needed materials in conformance with standard spec 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2.

C Construction

Perform work according to standard spec 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 except as specified below.

D Measurement

The department will measure Install [Equipment] at the contract unit price, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3001	Install Poles Type 9	EACH
SPV.0060.3002	Install Poles Type 10	EACH
SPV.0060.3003	Install Poles Type 9-Special	EACH
SPV.0060.3004	Install Poles Type 10-Special	EACH
SPV.0060.3006	Install Poles Type 13	EACH
SPV.0060.3007	Install Monotube Arms 15-FT	EACH
SPV.0060.3008	Install Monotube Arms 20-FT	EACH
SPV.0060.3009	Install Monotube Arms 25-FT	EACH
SPV.0060.3010	Install Monotube Arms 30-FT	EACH
SPV.0060.3012	Install Monotube Arms 35-FT - Special	EACH
SPV.0060.3014	Install Monotube Arms 40-FT - Special	EACH
SPV.0060.3016	Install Monotube Arms 45-FT - Special	EACH
SPV.0060.3017	Install Monotube Arms 50-FT	EACH
SPV.0060.3018	Install Monotube Arms 55-FT	EACH
SPV.0060.3019	Install Luminaire Arms Steel 15-FT	EACH

Payment is full compensation for installing all materials, including all associated hardware, fittings, mounting devices, and attachments necessary to completely install the pole and arms.

226. Backplates with Reflective Border 3 Section 12-Inch, Item SPV.0060.3201; Backplates with Reflective Border 4 Section 12-Inch, SPV.0060.3202; Backplates with Reflective Border 5 Section 12-Inch, SPV.0060.3203.

A Description

This special provision describes furnishing and installing traffic signal backplates with a 2-inch reflective border.

B Materials

Backplate materials shall be according to standard spec 658.2.2.2.

Reflective border materials shall be according to standard spec 637.2.2.3 and 637.2.3.4.2. The adhesive for the reflective border shall be pressure sensitive per manufacturer's recommendations. All reflective borders shall be placed on backplates by the manufacturer or prior to arrival for installation. This will prevent the placement of the reflective tape during colder temperatures in the field.

C Construction

Construction shall be according to the manufacturer’s recommendations and standard spec 637.3 and 658.3. All backplates to be inspected by the engineer prior to placement.

D Measurement

The department will measure Backplates with Reflective Border 3 Section 12-Inch, Backplates with Reflective Border 4 Section 12-Inch, and Backplates with Reflective Border 5 Section 12-Inch bid items as each individual backplate acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3201	Backplates with Reflective Border 3 Section 12-Inch	EACH
SPV.0060.3202	Backplates with Reflective Border 4 Section 12-Inch	EACH
SPV.0060.3203	Backplates with Reflective Border 5 Section 12-Inch	EACH

Payment is full compensation for furnishing and installing backplates with reflective border and mounting screws; and for disposing of surplus materials..

227. Contractor Furn Traffic Signal Control Cabinet Port Wash Rd & Bender Rd, Item SPV.0060.3204; Contractor Furn Traffic Signal Control Cabinet Port Wash Rd & Clovernook, Item SPV.0060.3205.

A Description

This specification describes furnishing an operational NEMA TS2 Type 2 traffic signal control cabinet ready for testing by the contractor with City of Glendale personnel present and subsequent installation.

Furnish and install equipment and assemble the cabinet conforming to the latest revision of NEMA Standards Publication TS 2 Version 2.06 (R2008), Traffic Controller Assemblies with NTCIP Requirements, National Electrical Manufacturers Association, hereinafter called NEMA TS2 Standard, except where modified in this specification. Conform all work to the Wisconsin State Electrical Code (WSEC). Conform all work to standard spec 651 of the Wisconsin Standard Specifications for Highway and Structure Construction, 2022 Edition, as supplemented or modified in this specification.

Provide cabinets designed for TS2 Type 2 operation. Pre-wire cabinets for a minimum of 16 phases as specified herein.

All equipment, materials, and cabinet features shall be the same type, make, and model on all cabinets delivered under any one order.

Furnish and install at no extra cost any equipment and materials not specifically described, but required in order to perform the intended functions in the cabinet.

Provide arc flash protection within the cabinet as needed to satisfy NFPA 70E and OSHA requirements.

B Materials

All Materials are listed under the Construction section of these specifications.

C Construction

Design

Furnish a door-in-door ground mounted (without anchor bolts) aluminum cabinet of clean-cut design and appearance. Provide a cabinet of minimum size 44 inches wide, minimum 24 inches deep and minimum 52 inches to maximum 60 inches high. The size of the cabinet shall provide ample space for housing the controller, all of the associated devices which are to be furnished with the controller, all other auxiliary devices herein specified, and all equipment to be furnished and installed by others.

The cabinet shall comply with the environmental and operating standards outlined in the NEMA TS2 Standard. The cabinet shall provide reasonable vandalism protection. The cabinet shall have a NEMA 3R rating.

Construct the cabinet from type 5052-H32 aluminum with a minimum thickness of 0.125 inches. Furnish the cabinet with a natural, uncoated, aluminum finish inside and outside. Continuously weld all seams. The surface shall be smooth, free of marks and scratches. Use stainless steel for all external hardware.

On the top of the cabinet, incorporate a 1-inch slope toward the rear to prevent rain accumulation. Incorporate a rain channel into the design of the main door opening to prevent liquids from entering the enclosure.

Include an exhaust plenum with a vent screen into the roof of the cabinet. Perforations in the vent screen shall not exceed 0.125 inches in diameter. Insulate the remaining area of the roof of the cabinet with a moisture resistant rigid foam board insulation with a minimum R value of 4.0 that can be perforated for an antenna.

Equip the lower section of the cabinet door with a louvered air entrance. The air inlet shall be large enough to allow sufficient air flow per the rated fan capacity. Louvers must satisfy the NEMA rod entry test for Type 3R ventilated enclosures. Secure a washable, aluminum, removable air filter to the air entrance. The filter shall fit snugly against the cabinet door wall. Attach an aluminum, easily removable, gasketed cover over the air filter and louver.

Doors

The cabinet door opening shall be a minimum of 80 percent of the front surface of the cabinet. The main door and police door-in-door shall each close against a weatherproof and dust-proof, closed-cell neoprene gasket seal. The gasket material for the main door shall be a minimum of 0.188 inches thick

by 1.00 inch wide. The gasket material for the police door shall be a minimum of 0.188 inches thick by 0.500 inches wide. Permanently bond the gaskets to the cabinet.

Equip the main door with a three-point latching mechanism. The upper and lower locking points of the latching mechanism shall each have a pair of nylon rollers. The handle on the main door shall utilize a shank of stainless steel 3/4 inches minimum diameter. The handle shall include a hasp for the attachment of an optional padlock. The cabinet door handle may turn either clockwise or counterclockwise to open, and shall not extend outwards past the edge of the door at any time. Position the lock assembly so the key will not cause any interference with the handle, or a person’s hand on the handle, when opening the cabinet door.

Include on the main door a solid stainless steel rod stop and catch mechanism capable of rigidly holding the door open at approximately 90, 120, and 180 degrees under windy conditions. The operator must be able to engage and disengage the catch with a shoed or booted foot.

The main door hinge shall be a one-piece, continuous piano hinge with a minimum 0.25 inch stainless steel pin running the entire length of the right side of the door (right-handed). Attach the hinge in such a manner that no rivets or bolts are exposed.

Equip the main door with a brass Corbin tumbler lock No. 2, swing away dust cap.

Electrically bond the door to the rest of the cabinet with a braided copper grounding conductor. The length of the grounding conductor shall allow the door to swing fully open, without using the stop bar, without stretching or breaking the grounding conductor. The grounding conductor shall not interfere with normal door operation.

Provide a door switch for the main cabinet door. When the door is opened the switch shall send a signal to the controller sufficient for the controller to log an alarm.

Shelves and Mountings

Mount a minimum of three vertical "C" channels on each interior side wall of the cabinet for the purpose of mounting the cabinet components. The channels shall accommodate spring

mounted nuts or studs. Install three vertical "C" channels or three slotted rails on the interior back wall of the cabinet. All mounting channels and rails shall extend to within 7 inches of the top and bottom of the cabinets and shall be of sufficient strength to rigidly hold specified shelves and equipment.

Provide two full-width, 11-inch deep, fully adjustable, aluminum shelves to support the controller and other equipment. Mount the lower shelf at a height above the bottom of the cabinet such that the shelf and attached drawer does not interfere with the ability to tilt the terminal facility forward on its hinges for maintenance purposes. Mount the top shelf at least 13 inches above the surface of the lower shelf.

Provide Siemens M62 controller and EDI MMU2. Locate on the lower shelf. Locate the loop detector racks and other auxiliary equipment on the top shelf. The power supply may be mounted on either shelf.

Provide an under-shelf drawer beneath the lower shelf. The drawer shall be approximately 20 inches wide and a minimum of 12” deep. The drawer shall operate easily and smoothly, and shall have a stop to prevent inadvertently pulling the drawer out of its support. Design the stop to allow purposeful complete removal of the drawer without the use of tools. Provide a slide out shelf capable of supporting a 5 pound, 14” wide by 11” deep load. This slide out support can be the cover for the drawer, as long as it extends far enough out to support the entire 11” depth of the laptop.

Provide a fully wired receptacle on the door that is specifically designed to support the twist and lock style plug specified for the heater element. Locate receptacle such that when installed, heater should be mounted a minimum of 6.5” from the bottom of the door.

Auxiliary Cabinet Equipment

Ventilate the cabinet by means of a 120 VAC, 60HZ, tube axial compact type fan located in the top of the cabinet plenum. The fan’s free delivery airflow shall be equal to or greater than 100 cubic feet per minute. The magnetic field of the fan motor shall not affect the performance of control equipment. The fan bearings shall operate freely. The fan unit shall not crack, creep, warp, or have bearing failure within a seven-year duty cycle. The maximum noise level shall be less than 40 decibels. The fan unit shall be corrosion resistant. The thermostat's turn on setting shall be adjustable from 90 to 120 degrees F. The fan shall run until the cabinet temperature decreases below the turn-on temperature setting by approximately 30 degrees F. The fan shall be fused.

Mount a single LED light strip (GESS32-13200K or approved equal) at the top of the cabinet and the appropriate power supply to support up to four light strip panels. Wire the power supply to an ON/OFF toggle switch. Mount two LED light strips under the lower shelf fed off the power supply on the top of the cabinet. Locate one strip on each side of the drawer.

Provide a thermostat with an adjustable setting from 0 to 100 degrees F. Install the thermostat on the interior ceiling of the cabinet well away from the cabinet light or any heat source. Provide a thermal limit switch to prevent the heater's protective cover from exceeding 170 degrees F.

Terminals and Facilities

The terminal facility panel shall be constructed from 5052-H32 brushed aluminum of 0.125 inches minimum thickness and formed so as to eliminate any flexing when plug-in components are installed.

Mount the bottom of the terminal facility a minimum of nine inches from the bottom of the cabinet. Hinge the terminal facility at the bottom to allow easy access with simple tools to all wiring on the rear of the panel. It shall not be necessary to remove the lower shelf, the shelf drawer, or any shelf-mounted equipment to hinge down the terminal facility. Provide sufficient slack in the load bay wiring to allow for dropping the load bay.

Fully wire the terminal facility with 16 load switch sockets: 8 phases of vehicular, 4 phases of pedestrian, and 4 phases of overlap operation; 8 flash transfer relay sockets; 1 flasher socket; and two terminal facility BIU rack slots. The use of printed circuit boards is not acceptable on the terminal facility, except printed circuit boards are acceptable for the BIU interface with the load bay. Position the 16 load switch sockets in two horizontal rows of 8 sockets each. Support the load switches and flasher by a bracket or shelf extending at least 3 inches from the terminal facility.

Label all terminals, load switches, and flash transfer relay sockets. Label reference designators by silk-screening on the front and rear of the terminal facility to match drawing designations.

Provide rack mounted BIU's. Provide a dual-row, 64-pin female DIN 41612 Type B connector for each BIU rack position. Provide card guides for both edges of the BIU. Terminal and facilities BIU mounting shall be an integral part of the terminal facility.

Provide one 16-channel, 8-position, TS2 detector rack with an integrally mounted BIU mounting. Rack shall be addressable. Power the detector rack by the cabinet power supply. Fasten the loop detector racks towards the left side of the top shelf. Additional racks shall be treated as add-on items.

For BIU rack connectors, provide pre-wired address pins or jumper plugs corresponding to the requirements of the NEMA TS2 Standard. The address pins or jumper plugs shall control the BIU mode of operation. BIUs shall be capable of being interchanged with no additional programming.

For the terminal facility, contain all field wires within one or two rows of horizontally-mounted Marathon (or approved equal) heavy duty terminal blocks. Terminate all field output circuits on an unfused terminal block with a minimum rating of 10 amps. Use mechanical connector lugs rated for copper wire. Angle the lower section of the terminal block out from the back of the cabinet at approximately a 45 degree angle.

Identify all field input/output (I/O) terminals by permanent alphanumeric labels. All labels shall use standard nomenclature per the NEMA TS2 Standard.

All field flash sequence programming at the field terminals shall be able to be accomplished with the use of only a screwdriver.

Wire field terminal blocks to use three positions per vehicle or overlap phase (green, yellow, red).

Wire one RC network in parallel with each flash transfer relay coil.

Permanently label all logic-level, NEMA-controller and MMU2 input and output terminations on the terminal facility. Identify the function of each terminal position on the cabinet drawings.

Terminal blocks for DC signal interfacing shall have a number 6-32 x 7/32 inch screw as minimum. Functions to be terminated shall be as specified in the listing of Input/Output Terminals in Section 5 of the NEMA TS2 Standard.

Conform all terminal facility and cabinet wiring to the WSEC. The green/walk, yellow, and red/don't walk load switch outputs shall be minimum 16 gauge wire. The MMU2 (other than AC power), controller I/O, and logic ground shall be minimum 22 gauge wire. All wire colors shall be consistent in all cabinets furnished in one order.

Auxiliary Vehicle Detection Interface Panel

Provide a 32-position interface panel or two 16-position panels. Each interface panel shall allow for the connection of 32 or 16 independent field loops, respectively. The panels shall have barrier strip type terminals using 8-32 screws and be rated for 20 inch pounds of torque.

Provide a ground bus terminal between each loop pair terminal to provide a termination for the loop lead-in cable ground wire. Secure the interface panels to a mounting plate attached to the left interior side wall of the cabinet.

Provide a cable consisting of 20 AWG twisted pair wires to enable connection to and from the interface panel to a detector rack. The twisted pair wires shall be color-coded wires. Provide a cable of sufficient length to allow the detector rack to be placed on either shelf.

Provide a pathway or mechanism for securing loop lead in cables neatly next to interface panel.

Identify all termination points by a unique number silk screened on the panel.

Conductors and Cabling

All conductors in the cabinet shall be copper 22 AWG or larger. All 14 AWG and smaller wire shall conform to MIL-W-16878/1, Type B, 600V, 19-strand tinned copper. The wire shall have a minimum of 0.010 inches thick PVC insulation without clear nylon jacket and rated to 105 degrees Celsius. All 12 AWG and larger wire shall be UL or NRTL listed THHN/THWN 90 degrees Celsius, 600V, 0.020 inches thick PVC insulation, and clear nylon jacketed.

Provide controller and MMU2 cables of sufficient length to allow the units to be placed on either cabinet shelf in the operating mode. Connecting cables shall be sleeved in a braided nylon mesh. Exposed tie-wraps and interwoven cables are unacceptable.

Provide the cabinet configuration with enough SDLC RS-485 Port 1 communication cables to allow full capabilities of that cabinet. Each communication cable connector shall be a 15-pin metal shell D subminiature type. The cable shall be a shielded cable suitable for RS-485 communications. Secure all connecting cables and wire runs by mechanical clamps. Stick-on type clamps are not acceptable.

Pre-wire the terminal facility for a Type 16 MMU2.

All wiring shall be neat in appearance. Stow excess cable behind the terminal facility or below the shelves in order to allow easy access to the terminal facility and cabinet components. All cabinet wiring shall be continuous from its point of origin to its termination point. Butt type connections/splices are not acceptable.

Wire the grounding system in the cabinet into three separate circuits: AC Neutral, Earth Ground, and Logic Ground.

Opto isolate all pedestrian pushbutton inputs from the field to the controller through the BIU and operate at 12 VAC.

Hook or loop all wire, size 16 AWG or smaller, at solder joints around the eyelet or terminal block post prior to soldering to ensure circuit integrity. Lap joint soldering is not acceptable.

Cabinet Switches

Locate the following switches on a maintenance panel on the inside of the cabinet door:

a. Controller On/Off

b. Stop Time (Three Positions)

Position Switch Label Function

Upper Stop Time Place stop time on the controller

Center Run Remove the stop time input to the controller

Lower Normal Connects the MMU2 to the controller stop time input

Locate the following switches behind the police access door:

a. Signal/Off

b. Flash/Normal

c. Hand/ auto

d. Coiled hand control and cable

The above switches shall function as follows:

Off: Signals Dark

Signal: Signals On and operating as follows:

Auto Hand

Flash: Signals Flash Signals Flash

Normal: Signals Normal Signals Advance by use of hand control

Power Panel Design

The power panel shall consist of a separate module, securely fastened to the interior right side wall of the cabinet. Wire the power panel to provide the necessary power to the cabinet, controller, MMU2, cabinet power supply, and all auxiliary equipment. Manufacture the power panel from 0.090-inch, 5052-H32 aluminum. Panel layout shall facilitate field inspection and maintenance accessibility without excessive disassembly or special tools.

Provide a light, tough, transparent, weather-resistant, non-yellowing, thermoplastic cover, rigidly mounted over the full power panel, with access holes for circuit breakers and other equipment, and open on the sides for ventilation.

All components of power panel shall meet or exceed the electrical requirements as laid out in section 5.4 of the NEMA TS2 Standard.

Provide all necessary components for a battery backup system to be retrofit into the cabinet without needing to make changes to the wiring of the power panel. Battery Backup system will support only essential equipment in the cabinet. Fan, heater, and lighting panel are examples of non-essential equipment not expected to be supported by the battery backup system.

Do not install a jumper between the equipment ground and neutral. Instead, provide this bonding jumper in a separate package labeled “For Grounding Purposes.”

Grounding System

On each side of the cabinet, provide a minimum 20-position neutral bus bar capable of connecting three #12 AWG wires per position.

Also on each side of the cabinet, provide a minimum 20-position equipment ground bus bar capable of connecting three #12 AWG wires per position. Install this bus bar below the neutral bus bar.

Power receptacles

Mount a 120 VAC 20 amp, NEMA 5-20R GFCI convenience outlet on the interior right side wall above or as part of the power panel. The outlet shall be fully operational and fuse protected.

Mount a 2-gang outlet on each side of the cabinet. Both of these outlets should be wired off the circuit breaker fed off the surge protector.

Auxiliary Devices

Flashers

Provide one solid state flasher conforming to the requirements of section 6.3 of the NEMA TS2 Standard.

Flash Transfer Relays

Provide four flash transfer relays conforming to the requirements of section 6.4 of the NEMA TS2 Standard.

Cabinet Power Supply

Provide one power supply with each cabinet conforming to the requirements of section 5.3.5 of the NEMA TS2 Standard. Provide LED indicators for the 12 VDC, 12 VAC, and 24 VDC outputs. Provide jack plugs on the front panel for access to the +24 VDC for test purposes.

Bus Interface Units (BIU)

Provide three BIUs conforming to the requirements of section 8 of the NEMA TS2 Standard. Provide two BIUs with the main panel and one BIU with one of the detector racks.

Documentation

Cabinet Intersection Wiring Diagrams

At the time of the cabinet delivery, furnish with the cabinet three sets of printed 22x34-inch wiring diagrams .

D Measurement

The department will measure Contractor Furn Traffic Signal Control Cabinet [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3204	Contractor Furn Traffic Signal Control Cabinet Port Wash Rd & Bender Rd	EACH
SPV.0060.3205	Contractor Furn Traffic Signal Control Cabinet Port Wash Rd & Clovernook	EACH

Payment is full compensation for furnishing delivering and installing NEMA TS2 Type 2 Traffic Signal Control Cabinet at the location shown on the plans.

228. Trnspt Traffic Sig & Inter Lighting Materials Port Wash Rd & Bender Rd, Item SPV.0060.3206; Trnspt Traffic Sig & Inter Lighting Materials Port Wash Rd & Clovernook, Item SPV.0060.3207; Trnspt Traffic Sig & Inter Lighting Materials IH 43 Ramps & Good Hope, Item SPV.0060.3307; Trnspt Traffic Sig & Inter Lighting Materials Good Hope & Port Wash Rd, Item SPV.0060.3308; Trnspt Traffic Sig & Inter Lighting Materials IH 43 SB Ramps & STH 100, Item SPV.0060.3309; Trnspt Traffic Sig & Inter Lighting Materials IH 43 NB Ramps & STH 100, Item SPV.0060.3310; Trnspt Traffic Sig & Inter Lighting Materials Brown Deer Rd & CTH W, Item SPV.0060.3311; Trnspt Traffic Sig & Inter Lighting Materials Green Bay Rd & Range Line Rd, Item SPV.0060.3502.

A Description

This special provision describes the transporting of department furnished monotube poles, monotube arms, and monotube luminaire arms.

B Materials

Transport materials furnished by the department including: Monotube poles, monotube arms and monotube luminaire arms (to be installed on monotube assemblies).

Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

Provide all other needed materials in conformance with standard spec 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2.

Pick up the department furnished materials for Port Wash Rd & Bender Rd and Port Wash Rd & Clovernook at the City of Glendale and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

Pick up the department furnished materials for Good Hope & Port Wash Rd from the Milwaukee County Traffic Signal Electrical Shop located at 10320 W Watertown Plank Road, Wauwatosa, WI 53226. Notify Daniel Murphy, Daniel.Murphy@milwaukeecountywi.gov, to make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

C Construction

Perform work according to standard spec 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3.

D Measurement

The department will measure Trnspt Traffic Sig & Inter Lighting Materials [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3206	Trnspt Traffic Sig & Inter Lighting Materials Port Wash Rd & Bender Rd	EACH
SPV.0060.3207	Trnspt Traffic Sig & Inter Lighting Materials Port Wash Rd & Clovernook	EACH
SPV.0060.3307	Trnspt Traffic Sig & Inter Lighting Materials IH 43 Ramps & Good Hope	EACH
SPV.0060.3308	Trnspt Traffic Sig & Inter Lighting Materials Good Hope & Port Wash Rd	EACH
SPV.0060.3309	Trnspt Traffic Sig & Inter Lighting Materials IH 43 SB Ramps & STH 100	EACH
SPV.0060.3310	Trnspt Traffic Sig & Inter Lighting Materials IH 43 NB Ramps & STH 100	EACH
SPV.0060.3311	Trnspt Traffic Sig & Inter Lighting Materials Brown Deer Rd & CTH W	EACH
SPV.0060.3502	Trnspt Traffic Sig & Inter Lighting Materials Green Bay Rd & Range Line Rd	EACH

Payment is full compensation for transporting the monotube poles, monotube arms and monotube luminaire arms (to be installed on monotubes). Installation of these materials is included under a separate pay item.

229. Emergency Vehicle Detection System Port Wash Rd & Bender Rd, Item SPV.0060.3208; Emergency Vehicle Detection System Port Washington Rd & Clovernook Ln, Item SPV.0060.3209.

A Description

This specification describes furnishing an operational Emergency Vehicle Detection System ready for testing by the contractor with City of Glendale personnel present and subsequent installation.

A complete, functioning, Tomar “Strobecom II” Optical Preemption and Priority Control System. Complete with one Tomar model OSPOCV2-4 (4-channel) optical signal processor (OSP) cards, four Tomar Model DETOC21-1IC-W optical detectors with attached integrated confirmation light led (white), M913 detector cable (at least 1,000 feet (minimum on roll), amount noted in the miscellaneous quantities), four (4) MAST-MNT-KIT mounting brackets and any associated equipment (or approved equal) shall be furnished and installed by the contractor. Tomar Electronics personnel or product rep must be present for installation at time of activation/traffic signal turn-on.

B Materials

Emergency vehicle detection equipment shall be furnished and installed, and shall include:

- Tomar Model DETOC21-1IC-W optical detectors for each approach as shown on the plans
- Tomar Model OSPOCV2-4 optical signal processor (OSP), sufficient for 8-phase operation
- Tomar M913 detector cable
- Spare: (1) DETOC21-1IC-W Detector with Integrated Confirmation Light and (1) OSPOCV2-4 OSP Card

C Construction

Optical Detector with Integrated Confirmation Light (White)

The optical detector shall be mounted on the indicated signal mast arm by an approved mast arm clamp. The detector shall not be mounted on the signal head.

Emergency vehicle preemption sequence of operation shall be subject to the approval of the engineer prior to turn-on of the signal.

It shall be the responsibility of the contractor to provide the services of a knowledgeable representative of the manufacturer of the emergency vehicle preemption equipment to be present for not less than the first day of the traffic signal lighting and function test to ensure proper installation and functioning of the equipment. The optical detector shall be a light- weight, weatherproof, with two separately adjustable detectors on a single optical detector base and must only require one M913 detector cable for the complete function including integrated confirmation light. Internal circuitry shall transform optical energy from the optical emitter assembly into electrical signals for delivery via optical detector cable to the phase selection equipment.

The Tomar M913 optical detector cable shall be a durable, shielded, 3-conductor cable with a drain wire and the necessary electrical characteristics to carry power to the optical detector from the phase selector and to carry the optical detector signal to the phase selector. It shall conform to the written requirements of the manufacturer of the phase selector and optical detector.

Phase Selector

This equipment shall interface between the optical detector and the controller cabinet. It shall interface with the signal controller and provide the following functions while not compromising the control equipment fail-safe provisions:

- Sufficient power to all optical detectors with integrated confirmation lights required for the intersection
- Sensitivity to the optical detector signal via adjustable range potentiometers
- Differentiation of signals by optical detectors from one or more emitters on a first-come, first-served basis.
- Outputs to signal the controller to cause selection of the desired phase green display for the approaching vehicle.
- Smooth transition to non-priority operation upon passage of the vehicle through the intersection.

D Measurement

The department will measure Emergency Vehicle Detection System as each individual unit, in place and accepted.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3208	Emergency Vehicle Detection System Port Wash Rd & Bender Rd	EACH
SPV.0060.3209	Emergency Vehicle Detection System Port Washington Rd & Clovernook Ln	EACH

Payment is full compensation for furnishing delivering and installing Emergency Vehicle Detection System at the location shown on the plans.

230. Trnsprt and Install S-F FO Cable Pigtail Port Wash Rd & Bender Rd, Item SPV.0060.3210; Trnsprt and Install S-F FO Cable Pigtail IH 43 Ramps & Good Hope, Item SPV.0060.3331; Trnsprt and Install S-F FO Cable Pigtail Good Hope & Port Wash Rd, Item SPV.0060.3332; Trnsprt and Install S-F FO Cable Pigtail IH 43 SB Ramps & STH 100, Item SPV.0060.3333; Trnsprt and Install S-F FO Cable Pigtail IH 43 NB Ramps & STH 100, Item SPV.0060.3334; Trnsprt and Install S-F FO Cable Pigtail Brown Deer Rd & CTH W, Item SPV.0060.3335.

A Description

This special provision describes the transporting and installing of fiber optic cable pigtail 8-ct (intersections of Port Wash Rd & Bender Rd, IH 43 Ramps & Good Hope, IH 43 SB Ramps & STH 100, IH 43 NB Ramps & STH 100, and Brown Deer Rd & CTH W) and 12-ct (intersection of Good Hope & Port Wash Rd) in traffic signal cabinets.

B Materials

The department will furnish the pre-terminated fiber optic patch panel. The material will be provided with the traffic signal cabinet. The patch panel will have a pre-terminated fiber optic cable pigtail. Provide all patch panel attachment hardware.

C Construction

Install the patch panel on the side of the traffic signal cabinet opposite the electrical service at a location as approved by the engineer. Install the pre-terminated fiber optic cable in conduit from the patch panel to the communication vault as specified in standard spec 678.3.1. Fiber optic cable ends shall be covered securely to protect open ends during installation in raceways. Leave the remainder of the fiber optic cable coiled in the communication vault.

D Measurement

The department will measure Trnsprt and Install S-F FO Cable Pigtail [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3210	Trnsprt and Install S-F FO Cable Pigtail Port Wash Rd & Bender Rd	EACH
SPV.0060.3331	Trnsprt and Install S-F FO Cable Pigtail IH 43 Ramps & Good Hope	EACH
SPV.0060.3332	Trnsprt and Install S-F FO Cable Pigtail Good Hope & Port Wash Rd	EACH
SPV.0060.3333	Trnsprt and Install S-F FO Cable Pigtail IH 43 SB Ramps & STH 100	EACH
SPV.0060.3334	Trnsprt and Install S-F FO Cable Pigtail IH 43 NB Ramps & STH 100	EACH
SPV.0060.3335	Trnsprt and Install S-F FO Cable Pigtail Brown Deer Rd & CTH W	EACH

Payment is full compensation for transporting and installing pre-terminated patch panels; furnishing and installing attachment hardware; and cleaning up and disposing of waste.

231. Traffic Signal Vault, Item SPV.0060.3301.

A Description

This special provision describes furnishing and installing a Traffic Signal Vault and 2-piece vault lid.

B Materials

Furnish a communication vault and vault lid constructed of a combination of polymer concrete and fiberglass gray in color. All polymer concrete vaults are not acceptable.

Vault shall have an inside clear opening of 30” x 48” and the overall height shall be 48”. Stackable units are not acceptable.

The vault shall consist of a polymer concrete bottom ring with four corrugated fiberglass sidewalls and a polymer concrete top ring. The four corners of the vault shall be encapsulated in polymer concrete. No fiberglass taping of the sidewall panels will be accepted.

Furnish a vault lid with a minimum design load of 15,000 pounds and test load of 22,500 pounds. Testing shall be according to SCTE-77- 2007, tested over a 10” x 10” plate. Tests utilizing a 10” x 20” plate are not acceptable. The vault lid shall consist of two interlocking pieces with each piece approximately 33” x 25.5”.

The vault lid shall have a permanent stamp that reads *WISDOT TRAFFIC SIGNALS*. The manufactures name and load rating shall also be stamped on the lid cover. The vault lid shall have two slots measuring ½" x 4" to use as a cover lift out. The lid shall be secured utilizing four ½" stainless steel penta-head bolts with stainless steel washers.

Furnish manufactured gaskets to be placed between the lid and top of vault to resist water from entering the vault.

The vault and cover shall be designed with a field replaceable locking mechanism. The cover shall be able to be removed and the nut in the vault shall be able to be replaced without damaging the vault.

The vault sidewalls shall be manufactured of corrugated fiberglass and the spacing between each corrugation shall measure approximately 8" to facilitate conduit placement. The sidewalls shall have a smooth exterior and be gel-coated.

The vault shall have four ½" bolts embedded on the underside of the top ring to be used for lifting purposes.

Furnish fiber optic cable support assembly consisting of multiple brackets, racks, and rails required to suspend the required surplus cabling and any splice enclosure for a single vault. The support assemblies shall be made from or coated with a weather resistant material to ensure no corrosion.

Furnish self-curing caulking to provide a permanent bond and made of flexible rubber that is not affected by sunlight, water, oils, mild acids, and alkali. Use mildew-resistant and non-flammable, gray caulk.

C Construction

Construct communications vault according to standard spec 611.

Provide a manufacturer-approved knockout punch driver to provide openings in the vault for conduit if not provided. Voids between the conduit and vault shall not exceed ½". Caulk the interior and exterior of the communication vault. Cure caulking according to manufacturer's specifications before backfilling.

Secure vault lid to vault with the manufacturer supplied hardware.

Anchor the support assemblies to the existing vault using stainless steel hardware.

D Measurement

The department will measure the Traffic Signal Vault bid item as each individual vault, complete and accepted in place.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3301	Traffic Signal Vault	EACH

Payment is full compensation for furnishing and installing all materials including vaults, lids, bolts, washers, mounting hardware, and caulking; for excavating, bedding, backfilling and restoration of ground to original condition including sand, aggregate, concrete, or other required materials; and for disposing of surplus materials.

232. Trnspt & Install S-F Traffic Signal Cabinet IH 43 Ramps & Good Hope Rd, Item SPV.0060.3302; Trnspt & Install S-F Traffic Signal Cabinet IH 43 SB Ramps & STH 100, Item SPV.0060.3303; Trnspt & Install S-F Traffic Signal Cabinet IH 43 NB Ramps & STH 100, Item SPV.0060.3304; Trnspt & Install S-F Traffic Signal Cabinet Brown Deer Rd & CTH W, Item SPV.0060.3305; Trnspt & Install S-F Traffic Signal Cabinet Green Bay Rd & Range Line Rd, Item SPV.0060.3501.

A Description

This special provision describes the transporting and installing of department furnished materials for traffic signals as the plans show and as follows.

B Materials

Use materials furnished by the department including: the traffic signal controller and the traffic signal cabinet.

Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

Provide all other needed materials in conformance with standard spec 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2.

C Construction

Perform work according to standard spec 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 except as specified below.

Request a signal inspection of the completed signal installation to the engineer at least five (5) working days prior to the time of the requested inspection. The departments' Region Electrical personnel will perform the inspection.

D Measurement

The department will measure Trnspt & Install S-F Traffic Signal Cabinet [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3302	Trnspt & Install S-F Traffic Signal Cabinet IH 43 Ramps & Good Hope Rd	EACH
SPV.0060.3303	Trnspt & Install S-F Traffic Signal Cabinet IH 43 SB Ramps & STH 100	EACH
SPV.0060.3304	Trnspt & Install S-F Traffic Signal Cabinet IH 43 NB Ramps & STH 100	EACH
SPV.0060.3305	Trnspt & Install S-F Traffic Signal Cabinet Brown Deer Rd & CTH W	EACH
SPV.0060.3501	Trnspt & Install S-F Traffic Signal Cabinet Green Bay Rd & Range Line Rd	EACH

Payment is full compensation for transporting and installing the traffic signal controller and the traffic signal cabinet; for furnishing and installing all other items necessary (such as, wire nuts, splice kits and/or connectors, tape, insulating varnish, ground lug fasteners, etc.) to make the proposed system complete from the source of supply to the most remote unit and for clean-up and waste disposal.

233. Traffic Signal Cabinet 16-Phase, Good Hope Rd & Port Washington Rd, Item SPV.0060.3306.

A Description

This work shall consist of furnishing and installing a traffic signal cabinet with components conforming to NEMA TS2 2003 specifications.

The contractor shall furnish and install a cabinet which meets Wisconsin Department of Transportation NEMA TS2 Type1 Traffic Signal Control Cabinet Specifications (without special programming functions) of 2017 except where modified by these specifications, including all required traffic signal control equipment, and any auxiliary equipment, wiring diagrams, and manuals as called for in the specifications.

The cabinet supplier shall submit one paper copy to remain in the cabinet of all the documents required by the specification. Provide the autocad copy to Daniel Murphy, Daniel.Murphy@milwaukeecountywi.gov, at the Milwaukee County engineering section.

A cabinet inspection shall be requested prior to turn on with ample time for the supplier to correct any deficiencies prior to turn on. Notify Daniel Murphy, Daniel.Murphy@milwaukeecountywi.gov and the project engineer via email at least five working days prior to the time of the requested inspection. The County's personnel will perform the inspection.

B Materials

B.1 Surge Protection

The surge suppressor protecting the controller, conflict monitor, and detection equipment shall consist of two stages:

The design of the stage one suppressor shall be modular and it shall be installed in such a way that it may be removed and replaced with the intersection under power and in flashing operation. It shall have a permanently mounted and wired base and a removable circuit package. The status of the stage one surge protector shall be continuously and remotely monitored by alarm circuit 2. The stage one suppressor circuit package shall have two LED indicators for power ‘on’ and suppression ‘failure’ and shall be according to the following:

Stage One Suppressor	
Properties	Criteria
"Plug-in" suppression module	12 pin connector assembly
Clamp Voltage	250 V at 20,000 A typical
Response time	Less than 5 nanoseconds
Maximum Continuous service current	15 A at 120 VAC 60 Hz
High Frequency noise attenuation	At least 50 dB at 100,000 Hz
Operating temperature	-40 to 185 °F

The stage two, high speed, solid state, transient suppressor shall protect the system from transient over voltage without affecting power at the load. It shall suppress transients of either polarity and form either direction (source or load). The suppressor shall have a visual ‘on’ indicator lamp when the unit is operating normally. It shall also have a UL plastic enclosure, a four position terminal strip for power connection, and it shall utilize silicon avalanche diode technology. The stage two suppressor shall be according to the following:

Stage Two Suppressor	
Properties	Criteria
Nominal service voltage	120 V at 50/60 Hz
Maximum voltage protection level	± 330V
Minimum voltage protection level	± 220 V ± 5 %
Minimum surge current rating	700 A
Stand by power	Less than 0.5 Watts
Hot to neutral leakage current at 120 V RMS	Less than 5 µA
Maximum Response Time	5 nanoseconds
Operating and Storage temperature	-4 to 122 °F

Provide 5-20R Outlets at these locations:

a. On the right side above the power panel provide one Quad.
b. On the left side, at approximately the height of the upper shelf, provide one Quad.
c. On the back side of the police panel or on the power panel provide a GFCI Duplex.

B.2 Auxiliary Cabinet Equipment

A 250 W heater shall be installed on the interior right side wall in the lower back corner of the cabinet with a protective ventilated cover and a thermostat that is adjustable from 0 to 60 degrees F at a minimum. It shall be located properly to prevent damage to equipment and wiring.

B.3 Terminal Facilities

The terminal facility panel shall incorporate a relay to remove +24VDC from the common side of the load switches when the intersection is placed into mechanical flash. The relay shall have a momentary push button to apply power to the load switch inputs for the ease of troubleshooting.

B.4 Detection and Card Rack(s)

The cabinet shall be equipped with one TS2 detector rack capable of handling 4 channels of video detection inputs.

If the plans call for inductive loop detection, modify the number of channels of detection inputs on the detector racks to meet the requirements of the intersection such that each loop detector is installed on an individual channel. If multiple racks are required, they shall be capable of handling the same number of inputs. Provide a sufficient number of detector amplifiers to handle the number of detectors at the intersection. When required for proper cabinet operation provide a detector interface panel sized large enough to handle the requirements of the intersection. Interface panels shall allow for the connection of 32 or 16 independent field loops. The panels shall have barrier strip type terminals using 8-32 screws and be rated for 20 inch pounds of torque. Provide a ground bus terminal between each loop pair terminal to provide a termination for the loop lead-in cable ground wire. Secure the interface panels to a mounting plate attached to the left interior side wall of the cabinet.

The cabinet shall be EVP ready, with a position in a TS2 detector rack for an EVP card provided in a separate bid item and all items necessary to enable the use of confirmation beacons.

B.5 Equipment

The control cabinet is peripheral to the traffic signal controller and MMU2 and the cabinet shall be fully compatible with NEMA TS2 Version 2.06. The equipment items included shall be, but not necessarily limited to, cabinet, MMU2, BIUs, shelf-mounted detector racks, detector amplifiers as needed, power supply, load switches, flash relays, power distribution panel, interior cabinet wiring, and other associated electrical and electronic equipment interior to the control cabinet that is necessary to provide the type of operation described in these plans and specifications. The intersection cabinet shall be fully wired for 16 phases. Phases 9-12 yellow shall be available for use even if the plans call for phases 9-12 to be pedestrian phases. All functions as specified by NEMA TS2 Version 2.06 shall be wired and ready for use.

B.6 Ethernet Communications

A cat 5e cable shall be provided for each Ethernet capable device to be installed in the cabinet, including, but not necessarily limited to controller, mmu2, evp card and video detection.

C Construction

After the contractor has mounted the cabinet on the cabinet foundation and all of the field wiring has been installed, he/she shall connect all field wiring inside the cabinet and test the signal circuits for correct operation. All work shall conform to the latest version of the Wisconsin State Electrical Code (WSEC). Connecting and testing signal circuits shall be considered part of this item of work.

Milwaukee County will provide the controller to be installed in the cabinet.

Use each conduit entering the cabinet to its fullest before using a different conduit. Plug any unused conduit with a UL listed plug. Caulk the outside parameter of the cabinet where it meets the concrete base.

D Measurement

The department will measure Traffic Signal Cabinet, 16-Phase, as a single complete unit of work, acceptably completed according to the contract and to the satisfaction of the Milwaukee County Traffic Engineer or Milwaukee County Electrician.

E Payment

The department will pay for measured quantities as each individual unit, acceptably completed.

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3306	Traffic Signal Cabinet 16-Phase, Good Hope Rd & Port Washington Rd	EACH

Payment is full compensation for furnishing and installing the traffic signal cabinet with fiber optic communication, switches for flashing operation, and a full complement of devices as necessary to assure that the cabinet will perform the said functions.

234. Transport & Install S-F Radar Detection System IH 43 Ramps & Good Hope, Item SPV.0060.3312; Transport & Install S-F Radar Detection System IH 43 SB Ramps & STH 100, Item SPV.0060.3313; Transport & Install S-F Radar Detection System IH 43 NB Ramps & STH 100, Item SPV.0060.3314.

A Description

This special provision describes the transporting and installing of department furnished Radar Detection System on monotube poles or arms.

B Materials

Pick up the department furnished Radar System at the department's electrical shop located at 935 South 60th Street, West Allis. Notify the department's electrical field unit (EFU) at (414) 266-1170 to make arrangements for picking up the department furnished materials at least five working days prior to material pick-up.

C Construction

Install the department furnished pole/arm mounting brackets, extension arms (if required), and radar units per manufacturer recommendations in the locations determined by the department.

Install the power and communication cable to run continuously (without splices) from the traffic signal cabinet to the pole handhole plus an additional 16-feet in each pull box and an extra 10-feet in the pole handhole. Install the detector unit cable whip from the detector unit to the pole handhole. Splice the detector unit cable whip to the power and communication cable in the pole handhole using the provided junction box.

Mark each end of the lead in the traffic signal cabinet and each cable in the pole handhole to indicate the equipment label (i.e., RA1, RA2, etc.) on the plans. For a cabinet that is not operating the signal, the contractor will terminate the ends. If the cabinet is operating the signal, the cabinet wiring will be done by the department.

Notify department's Electrical Shop at (414) 266-1170 upon completion of the installation and aiming of the radar units.

The department will provide the vendor's contact information. Coordinate directly with the department's radar detection system vendor to arrange for the vendor to program the radar detection system on site. Notify the department and vendor at least five working days prior to the date of programming. Assist the department and vendor with fine adjusting of the radar units during the radar system programming, if necessary.

D Measurement

The department will measure Transport & Install S-F Radar Detection System [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3312	Transport & Install S-F Radar Detection System IH 43 Ramps & Good Hope	EACH
SPV.0060.3313	Transport & Install S-F Radar Detection System IH 43 SB Ramps & STH 100	EACH
SPV.0060.3314	Transport & Install S-F Radar Detection System IH 43 NB Ramps & STH 100	EACH

Payment is full compensation for transporting and installing the radar detection system, cable, mounting hardware, and radar units; and assisting the department and vendor during the radar system programming.

235. Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 Ramps & Good Hope, Item SPV.0060.3315; Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 SB Ramps & STH 100, Item SPV.0060.3316; Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 NB Ramps & STH 100, Item SPV.0060.3317; Trnspt & Install S-F EVP Heads With Confirm Lights Brown Deer Rd & CTH W, Item SPV.0060.3318.

A Description

This special provision describes the transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Heads with Confirmation Lights and mounting brackets at the intersections of IH 43 Ramps & Good Hope Rd, IH 43 SB Ramps & STH 100/Brown Deer Rd, IH 43 NB Ramps & STH 100/Brown Deer Rd, and STH 32/Brown Deer Rd & CTH W/Port Washington Rd.

B Materials

Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

C Construction

Install the EVP detector heads as shown on the plans. The department will determine the exact location to ensure that the installation does not create a sight obstruction. Mount the EVP detector heads and confirmation lights and wire them per manufacturer instructions. For a cabinet that is not operating the signal, the contractor will terminate the ends and install the discriminators and card rack in the cabinet. If the cabinet is operating the signal, the cabinet wiring will be done by the department.

Notify the department's Electrical shop at (414) 266-1170 upon completion of the installation of the Emergency Vehicle Preemption (EVP) Detector Heads.

D Measurement

The department will measure Trnspt & Install S-F EVP Heads With Confirm Lights [Location] as each individual unit, in place and accepted.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3315	Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 Ramps & Good Hope	EACH
SPV.0060.3316	Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 SB Ramps & STH 100	EACH
SPV.0060.3317	Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 NB Ramps & STH 100	EACH
SPV.0060.3318	Trnspt & Install S-F EVP Heads With Confirm Lights Brown Deer Rd & CTH W	EACH

Payment is full compensation for transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Heads, Confirmation Lights, and mounting brackets.

236. Remove & Reinstall EVP System Good Hope Rd & Port Washington Rd, Item SPV.0060.3319.

A Description

This special provision describes the removal and reinstallation of the Emergency Vehicle Preemption (EVP) system at the intersection of Good Hope Rd & Port Washington Rd.

B Materials

The EVP materials, except detector cable, shall be reused from the existing traffic signal equipment. The detector cable is quantified under a separate bid item.

C Construction

Notify Daniel Murphy, Daniel.Murphy@milwaukeecountywi.gov, and the engineer via email at least five working days prior to the removal of the EVP system at Good Hope Rd & Port Washington Rd. A Milwaukee County representative shall be on site for the removal. Contractor shall not remove existing EVP system until the engineer inspects and approves temporary traffic signals. Complete the removal work as soon as possible following the shutdown of this equipment.

Milwaukee County assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working traffic signal equipment to the engineer for concurrence. Any equipment not identified as damaged or not working, prior to removal, will be replaced by the contractor at no cost to Milwaukee County.

Remove the EVP detectors, mounting devices, and wiring/cabling from each signal standard, arm or pole. Dispose of the underground signal cable, internal wires and street lighting cable off the right-of-way in a manner consistent with state and federal regulations.

Contractor shall store the remaining materials from Good Hope Rd & Port Washington Rd until final installation.

Install the EVP detector heads as shown on the plans. Milwaukee County will determine the exact location to ensure that the installation does not create a sight obstruction. Mount the EVP detector heads and wire them per manufacturer instructions. For a cabinet that is not operating the signal, the contractor will terminate the ends and install the discriminators and card rack in the cabinet. If the cabinet is operating the signal, the cabinet wiring will be done by Milwaukee County.

Notify Daniel Murphy, Daniel.Murphy@milwaukeecountywi.gov, upon completion of the installation of the Emergency Vehicle Preemption (EVP) Detector Heads.

D Measurement

The department will measure Remove & Reinstall EVP System as each individual unit, in place and accepted.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3319	Remove & Reinstall EVP System Good Hope Rd & Port Washington Rd	EACH

Payment is full compensation for removing, transporting, storing, and reinstalling of Milwaukee County Emergency Vehicle Preemption (EVP) Detector Heads and mounting brackets.

237. Install Pull Box Rings and Covers Brown Deer Rd & CTH W, Item SPV.0060.3320.

A Description

This special provision describes the transporting and installing of pull box rings and covers.

B Materials

Furnish materials according to standard spec 653.2.

C Construction

Perform work according to standard spec 653.3.

D Measurement

The department will measure Install Pull Box Rings and Covers [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3320	Install Pull Box Rings and Covers Brown Deer Rd & CTH W	EACH

Payment is full compensation for transporting and installing manhole frames and covers; for materials including grounding lugs; and for excavating and backfilling.

238. Temporary EVP System IH 43 Ramps & Good Hope Rd, Item SPV.0060.3321; Temporary EVP System Good Hope Rd & Port Washington Rd, Item SPV.0060.3322; Temporary EVP System IH 43 SB Ramps & STH 100/Brown Deer Rd, Item SPV.0060.3323; Temporary EVP System IH 43 NB Ramps & STH 100/Brown Deer Rd, Item SPV.0060.3324; Temporary EVP System STH 32/Brown Deer Rd & CTH W/Port Washington Rd, Item SPV.0060.3325.

A Description

This special provision describes furnishing, installing, and maintaining temporary EVP systems at the temporary signalized intersection as shown in the plans.

B Materials

Furnish an emergency vehicle preemption system compatible with the local municipal systems and users.

C Construction

The Temporary EVP System, as shown in the temporary traffic signal plans or as directed by the engineer, shall be complete in place, tested, and in full operation during each stage and sub-stage of construction.

Install the temporary EVP system as shown in the plans and according to the manufacturer’s recommendations. Determine a suitable location for the temporary EVP detectors for each stage and sub-stage of construction. Detectors may be mounted on the temporary traffic signal span wire or wood poles. Relocate the temporary EVP detectors to a suitable location if construction activities and/or construction staging changes impede the detector operation. Arrange for testing of equipment prior to acceptance of the installation for each construction stage.

All cables associated with the temporary EVP system shall be routed to the cabinet. Each lead shall be appropriately marked as to which EVP channel it is associated.

Periodic adjustment and/or moving of the temporary EVP detectors may be required due to changes in traffic control, staging, or other construction operations.

Ensure that the temporary EVP system stays in clean working order. Periodic cleaning of the equipment may be required due to dirt and dust build-up.

Remove the temporary EVP system upon project completion.

Provide the engineer records of all EVP settings used during construction.

D Measurement

The department will measure Temporary EVP System [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3321	Temporary EVP System IH 43 Ramps & Good Hope Rd	EACH
SPV.0060.3322	Temporary EVP System Good Hope Rd & Port Washington Rd	EACH
SPV.0060.3323	Temporary EVP System IH 43 SB Ramps & STH 100/Brown Deer Rd	EACH
SPV.0060.3324	Temporary EVP System IH 43 NB Ramps & STH 100/Brown Deer Rd	EACH
SPV.0060.3325	Temporary EVP System STH 32/Brown Deer Rd & CTH W/Port Washington Rd	EACH

Payment is full compensation for furnishing and installing all required equipment, materials, and supplies; for maintaining and changing the EVP detectors to match the plans, traffic control, and construction staging; for relocating the temporary EVP detectors due to construction activities, if required; for testing the EVP system for each stage and sub-stage of construction; for periodically cleaning all temporary EVP detectors; for removing the temporary EVP system; and for cleaning up and properly disposing of waste.

239. Accessible Pedestrian Push Button System, Item SPV.0060.3336.

A Description

This special provision describes furnishing and installing Accessible Pedestrian Push Button System. This item shall consist of vandal resistant Accessible Pedestrian Signal, signs, and push button stations (PBS) that provides a vibro-tactile ADA and MUTCD compliant 2” push button with a raised directional arrow. All sounds are emitted from inside the unit via a weatherproof speaker. The unit shall use 2 wires and interface with a single cabinet control unit (CCU) located in the traffic control cabinet. The cabinet control unit shall be able to communicate to the controller hardwired inputs and outputs in a NEMA TS2 cabinet.

B Material

Furnish pedestrian push buttons conforming to all of the following requirements:

B.1 General

1. The System shall meet the functionality requirements of MUTCD 2009 – 4E.
2. The System shall meet NEMA TS 2 Section 2.1 Temperature & Humidity requirements.
3. The System shall meet NEMA TS 2 Section 2.1 Transient Voltage Protection requirements.
4. The System shall meet NEMA TS 2 Section 2.1 Mechanical Shock and Vibration requirements.
5. The System shall meet IEC 61000-4-4, IEC 61000-4-5 Transient Suppression requirements.
6. The System shall meet FCC Title 47, Part 15, Class A Electronic Noise requirements. The System shall be able to be set to vibrate a tactile arrow button during the WALK interval following a button push and/or every time the walk comes up.
7. The System shall have the field-selectable function known as “LOCATE TONE”. This means that during the FLASHING DON’T WALK and the DON’T WALK intervals, the system shall provide a locating tone that emanates from the Pedestrian Push Button Station. The system shall provide at least 3 different sounds to choose from.
8. The System shall have the field selectable function known as “Extended Push Activation”. This is defined as the audible WALK message shall only be activated and audible during the WALK interval if the button is depressed for a field selectable minimum period of time (from 0.5 to 6 seconds). Also, for the following walk and clearance intervals, the volumes have a separately settable minimum and maximum volume level.
9. The System shall have the field selectable function known as “Informational Message”. This means that a custom message giving the location of the street to cross and the intersection (or other information) will be vocalized only when the button is depressed for a minimum field selectable time.
10. The System shall provide a “Wait” message that plays once the button is activated until the Walk cycle goes into effect. This message must have the field selectable option of OFF or repeating every 4, 6, 8 or 10 seconds.

11. The System shall have standard “Travel Direction” options that can be selected at the time of installation.
12. The System shall have at least 10 field selectable WALK sound options including a cuckoo, a chirp, an MUTCD rapid tick or custom voice message.
13. The System shall provide at least 7 Ped-clearance sound choices including audible countdown (field selectable). The audible countdown shall represent the time remaining during the pedestrian Clearance interval. Timing is automatically adjusted to the CLEARANCE INTERVAL timing, provided by the traffic controller.
14. The System shall provide 2 language capabilities, selectable by user (as a field selectable feature).
15. The System shall provide an Emergency preemption message in conjunction with a preemption system (selectable feature).
16. The system LOCATE TONE, WALK, and DON’T WALK audible features shall have independent assignable minimum and maximum volume limits. CLEARANCE volume level shall be controlled by WALK volume setting.
17. The System shall have the option to mute sounds on all crosswalks except activated crosswalk (selectable feature).
18. The System shall have a real time clock capable of keeping time when there is no system power, for at least 2 years from the date of manufacture.
19. The System shall have the ability to have four separate program configurations with all features available, and any single configuration can be selected through an external input.
20. The System shall provide a user settable calendar function, allowing four separate configuration profiles to be configured to become active at different times of the day on a daily, weekly, or holiday basis.
21. The entire System shall be configurable from any PBS over Bluetooth.
22. The entire System shall be configurable from the CCU over Wi-Fi or Ethernet.
23. All field access to selectable options using a Bluetooth, Wi-Fi or Ethernet devices shall be protected using password security.
24. The system shall be configurable from a PC using Windows 7 or later.

B.2 Central Control Unit (CCU)

1. The Central Control Unit (CCU) Enclosure shall meet NEMA 250 – Type 1 requirements.
2. The CCU shall be installed inside the Traffic Cabinet and powered by the AC supply mains (115 VAC).
3. The CCU shall provide internal power to operate at least 16 PBSs.
4. The CCU shall be logically configurable to assign any PBS to one of 16 traffic phases.
5. The CCU shall receive pedestrian phase Walk, Don’t Walk and Clearance inputs from either the traffic cabinet load switches or an SDLC input.
6. The CCU shall be capable of operating as a NEMA TS2 Detector Rack Bus Interface Unit (BIU) in order to place PED calls over SDLC.
7. The CCU shall be able to self-test all PBSs and put a corresponding phase into recall should a PBS assigned to a phase fail the self-test.
8. The CCU shall provide optically isolated general purpose inputs.
9. The CCU shall be used with a cable hardwired to inputs and outputs.
10. The CCU shall have internal storage to log a minimum one hundred (100) events with a date-time stamp for each event.
11. The CCU shall have an internal real-time clock capable of being set in the field and propagating the time to each connected PBS.
12. The CCU firmware shall be updatable via either Wi-Fi or Ethernet. There shall be no requirement for the IC chips or module hardware to be removed or exchanged in order to complete the firmware update.
13. The CCU shall monitor PED interval conflicts, and signal affected PBSs to an off state when a conflict occurs.

14. The CCU shall meet NEMA 250 – Type 1 enclosures requirements.
15. The CCU shall have a backlit LCD screen and button interface to allow placing test calls and display status.

B.3 Push Button Station (PBS)

1. The Push Button Station (PBS) Enclosure shall meet NEMA 250 – Type 4X requirements.
2. The PBS shall be a single fixture that contains a 2” activation area, in which resides an ADA compliant vibrotactile push button with a raised directional tactile arrow, and a sign mounted above the button.
3. The PBS Speaker shall be 8 Ohms, 6 Watt, and weather-proof.
4. The button shall be cast aluminum, nickel-plated and powder coated black around the arrow, to provide high contrast to arrow color. The PBS arrow shall allow for change in orientation to one of four directions. Buttons in the median, if present, shall have a double arrow button.
5. The PBS Arrow Button Actuation shall use Hall Effect Sensor technology rated to greater than 20 million operations.
6. The PBS Arrow Button Push Force shall have three adjustable pressure settings between approximately 1 and 3lbs to activate a button push.
7. The PBS Arrow Button shall pulse and vibrate at approximately 20 Hz with displacement factor based on pounds of force used to actuate.
8. The PBS shall have a rear facing speaker projecting sound from front and back, providing 360º omnidirectional sound performance.
9. The PBS shall include internal Conflict Monitoring that monitors WALK, and DON’T WALK input signals for conflict conditions; disables system operation and logs errors if conflict occurs.
10. The PBS firmware and voice messages shall be updatable via Bluetooth. There shall be no requirement for the hardware to be changed out to update.
11. The system shall operate with the vendor’s client application to record and upload cumulative ped count and call data.
12. The PBS shall meet or exceed NEMA 250 type 4X enclosure requirements.
13. The PBS Construction shall be:
14. FRAME: Cast Aluminum, Powder Coated.
15. HOUSING: Reinforced, UL-listed Thermoplastic.
16. MESSAGE SIGN: Aluminum, Powder Coated, Ink Markings, or Reflective Vinyl Sheeting
17. PUSH BUTTON: Aluminum, Powder Coated.
18. Electronic circuits (printed circuit board assemblies) shall be in a water-tight housing/enclosure or encapsulated with a thermoplastic polyamide having a UL94-V0 flammability rating and allowing light and RF transmissions (i.e. over-molded), for environmental protection. The housing/closure or encapsulation shall be capable of providing NEMA 250 4X protection to all covered components.
19. The PBS Message Marking at the time of order may specify the Message Sign Markings to be the International Walking Person or the Informational Explanations for the three distinct pedestrian displays (WALK, DON’T WALK, and PED CLEAR) that a pedestrian would see on an active pedestrian signal.
20. All sounds for all PBSs shall be synchronized.
21. The PBS shall have a non-visible, ambient sensing microphone located in the pedestrian station in an environmentally protected housing.
22. The LOCATE TONE volume shall adjust automatically in response to ambient noise with field selectable adjustment levels from -30dB below to +20dB above ambient in 2.5dB increments.
23. All other sounds volumes shall adjust automatically in response to ambient noise with field selectable adjustment levels from -30dB below to +20dB above ambient in 5dB increments.
24. The PBS shall utilize high quality digital audio technology, with a minimum 16-bit sample at a 48 kHz sample rate.

25. The PBS firmware and voice messages shall be updatable via Bluetooth. There shall be no requirement for the IC chips or module hardware to be removed or exchanged in order to complete a firmware or audio update.

C Construction

Install the buttons on the traffic signal poles using bolts at the locations indicated in the plans at the heights specified by the ADA requirements. Install the cabinet control unit in the cabinet in a hanging box or on a shelf as space permits.

D Measurement

The department will measure Accessible Pedestrian Push Button System, as each individual unit, acceptably completed.

E Payment

Accessible Pedestrian Push Button System will be paid for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3336	Accessible Pedestrian Push Button System	EACH

Payment is full compensation for furnishing and installing all materials.

240. Concrete Control Cabinet Bases Type 9 Special Super P, Item SPV.0060.3337.

A Description

Work under this specification shall be done according to standard spec 654, contract plan detail, and these special provisions.

B Materials

Materials shall be according to standard spec 654.

C Construction

Construction shall be according to standard spec 654.

D Measurement

The department will measure Concrete Control Cabinet Bases Type 9 Special Super P bid items as each individual base, acceptably completed.

E Payment

The department will pay for the measured quantity at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3337	Concrete Control Cabinet Bases Type 9 Special Super P	EACH

Payment is full compensation for providing concrete bases; for embedded conduit and electrical components; for anchor rods, nuts, and washers; for bar steel reinforcement, if required; for excavating, backfilling, and disposing of surplus materials.

241. Trnspt & Install State Furn EVP Heads STH 57/Green Bay Rd & Range Line Rd, Item SPV.0060.3503.

A Description

This special provision describes the transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Heads and mounting brackets at the intersection of STH 57/Green Bay Rd & Range Line Rd.

B Materials

Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

C Construction

Install the EVP detector heads as shown on the plans. The department will determine the exact location to ensure that the installation does not create a sight obstruction. Mount the EVP detector heads and wire them per manufacturer instructions. For a cabinet that is not operating the signal, the contractor will terminate the ends and install the discriminators and card rack in the cabinet. If the cabinet is operating the signal, the cabinet wiring will be done by the department.

Notify the department's Electrical shop at (414) 266-1170 upon completion of the installation of the Emergency Vehicle Preemption (EVP) Detector Heads.

D Measurement

The department will measure transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Heads as each individual unit, in place and accepted.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3503	Trnspt & Install State Furn EVP Heads STH 57/Green Bay Rd &Range Line Rd	EACH

Payment is full compensation for transporting and installing of department furnished Emergency Vehicle Preemption (EVP) Detector Heads and mounting brackets.

242. Pile Dynamic Analyzer (PDA)Testing, Item SPV.0060.4000; Pile Dynamic Analyzer (PDA) Restrikes, Item SPV.0060.4001; CAse Pile Wave Analysis Program (CAPWAP) Evaluation, Item SPV.0060.4002.

A Description

The items consist of providing Pile Dynamic Analyzer (PDA) load testing and analyses/evaluation, as outlined in the contract plans and this special provision. (Note that in all instances where "capacity" is used for railroad structures here and elsewhere in these special provisions, it is synonymous with "resistance" for roadway structures). This Dynamic Pile Load Testing is being done to set pile capacity criteria. Production piles will be driven according to pile capacity criteria produced by the contractor after PDA testing and evaluation is completed at each substructure unit. PDA restrikes will be completed as described in this special provision, or as directed by the engineer, and the UPRR engineer if applicable.

The piles and pile driving will be paid for under standard specification 550. This applies to both piles installed using the PDA criteria and for production piles installed using the criteria developed by the contractor from the PDA installations.

Data collected during the testing described herein will form the basis for the final driving criteria to be applied to production piles in the substructure unit under consideration. Submit to the engineer, and the UPRR engineer if applicable, the name and qualifications of the person(s) completing this work. Provide documentation that the person(s) completing this work have successfully completed at least 5 PDA testing projects within the last 3 years, and that these identified projects are of a scope and complexity similar to that anticipated for this project. Persons without this minimum experience will not be allowed to complete work on this project. Also submit documentation of experience with PDA equipment manufactured by Pile Dynamics, Inc. and the CAse Pile Wave Analysis Program (CAPWAP). All dynamic monitoring shall be performed using a PDA (Model PAK, PAX, or PAL). Furnish all equipment necessary for the dynamic monitoring such as sensors, cables, or wireless transmitters, etc. The equipment shall conform to the requirements of ASTM D4945. A person with a minimum of 4 years of experience and who has achieved a minimum of Advanced Level on the Foundation QA Examination for Providers of PDA Testing Services, shall be in charge of PDA operations and of data interpretation. They shall be present on site, or by remote connection, at the time of all PDA testing.

B (Vacant)

C Construction

C.1 Test Locations

Perform dynamic pile load testing at the pile locations identified on the plans. These locations are referred to simply as 'PDA Test Piles' throughout the remainder of this specification. Piles noted as PDA Test Piles are a functional load-carrying part of the completed foundation unit, and not solely used for testing.

C.2 Driving Sequence

Perform PDA testing on the first piles installed in each substructure unit. PDA Test Piles shall be located as shown on the footing plan. No other piles in the substructure unit shall be used for PDA testing unless agreed to by the engineer, and the UPRR engineer if applicable. Do not drive any other piles in the unit until all required testing has been completed and the final driving criteria for that substructure unit has been determined in writing and accepted by the engineer, and the UPRR engineer if applicable.

C.3 Pile Driving

Drive PDA Test Piles to penetration depths (including minimum depths) and/or penetration capacities as directed by the engineer, and the UPRR engineer if applicable. Drive PDA Test Piles using the same methods and equipment that have been accepted for driving the production piles.

Drive PDA Test Piles to one of the following lengths:

- If the required plan driving capacity is achieved at a pile length less than plan length, stop driving the pile. Pile restrikes will be required as described in Section C6 of this special provision to document that the minimum plan required driving capacity is achieved.
- If PDA indicated pile capacity is greater than or equal to 85% of the required driving capacity, at the estimated plan length, stop driving. Pile restrikes will be required as described in Section C6 of this special provision to document that the minimum plan required driving capacity is achieved.
- If the pile capacity at plan length is less than 85% of the required driving capacity, continue to drive the pile until the capacity reaches 85% or more of the plan driving capacity. Upon achieving 85% or more, stop driving. Pile restrikes will be required as described in Section C6 of this special provision to document that the minimum plan required driving capacity is achieved.

In all cases, the required plan driving capacity will be shown either through end of initial drive data or from restrike data, as defined above.

C.4 Scheduling

Provide a written schedule to the engineer, and the UPRR engineer if applicable, showing all required PDA Test Pile activities for the following week. Submit this schedule a minimum of two working days prior to the first day included in the schedule.

Multiple concurrent PDA testing and/or analyses will be allowed. Any delays to the contractors schedule due to coordination or untimeliness of PDA testing or evaluation/analyses will not be grounds for extension of contract time.

C.5 Installation Testing

Perform dynamic measurements following procedures set forth in ASTM D4945 during the driving of piles designated as PDA Test Piles.

Continuous PDA monitoring may require multiple installations of PDA testing equipment depending on the supplied pile length. If multiple piles lengths are used to produce the final installed pile, multiple PDA equipment installations will be required. With the PDA testing equipment attached, drive the pile and monitor using the PDA equipment.

C.6 Restrike Tests

Perform restrike tests on all PDA test piles as part of the initial dynamic pile load testing program as described in section C5. See restrike criteria given in section C3.

Wait a minimum of 72 hours or a time period as directed by the engineer, and the UPRR engineer if applicable, after initial pile installation is complete; then, restrike each PDA test pile with the required dynamic testing instruments attached.

Warm the hammer before the restrike by applying at least 20 blows to a non-test pile, or by other means acceptable to the engineer, and the UPRR engineer if applicable.

The maximum amount of penetration required during the restrike test shall be 6 inches, or the maximum number of hammer blows required will be 30, whichever occurs first.

The pre-approved pile-driving hammer used for restrike testing shall be capable of supplying enough energy to develop a minimum of twice the required driving capacity shown on the plans.

C.7 CAPWAP Evaluation and Drive Criteria

Pile-driving criteria for each substructure unit shall be determined from dynamic pile tests conducted on the total length of each pile noted for PDA Testing in the plans. Submit the required driving capacity and the driving criteria, including ram stroke and fuel setting, for the production piles determined by dynamic pile testing to the engineer, and the UPRR engineer if applicable, for acceptance for the production pile installation. Electronically submit the driving criteria and a report with the results of the CAPWAP evaluation to the engineer, and the UPRR engineer if applicable.

Utilize the dynamic test data to establish the following pile driving criteria: (1) a minimum driven length below cutoff level, and (2) a maximum penetration rate per 10 hammer blows for 30 consecutive blows. Drive all remaining piles in each unit according to the established criteria for that unit.

Driving production piles shall continue until the required driving capacity is achieved for 30 consecutive hammer blows. Mark penetration per 10 consecutive hammer blows.

The engineer, or the UPRR engineer if applicable, may alter driving criteria as necessary to assure development of adequate pile capacity. In any pile where pile capacity or integrity is suspect, the engineer, or the UPRR engineer if applicable, may order PDA testing.

D Measurement

The department will measure Pile Dynamic Analyzer (PDA) Testing as each individual unit, acceptably completed, in which one unit includes all PDA-related effort on one pile during the initial driving.

The department will measure Pile Dynamic Analyzer (PDA) restrikes as each individual unit, acceptably completed, in which one unit includes all of the restrike and testing effort required on an individual pile when it is restruck.

The department will measure CAse Pile Wave Analysis Program (CAPWAP) Evaluation as each individual unit, acceptably completed, in which one unit includes all analyses and effort required to provide drive criteria for installation of production piles in one substructure unit.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4000	Pile Dynamic Analyzer (PDA)Testing	EACH
SPV.0060.4001	Pile Dynamic Analyzer (PDA) Restrikes	EACH
SPV.0060.4002	CAse Pile Wave Analysis Program (CAPWAP) Evaluation	EACH

Payment for Pile Dynamic Analyzer (PDA) Testing is full compensation for facilitating the initial dynamic pile load test on a given pile, including possible multiple sensor installations.

Payment for Pile Dynamic Analyzer (PDA) Restrikes is full compensation for facilitating and performing one restrike test on a pile, including the sensor installation, mobilization of equipment, hammer warm-up, and pile restriking.

Payment for CAse Pile Wave Analysis Program (CAPWAP) Evaluation is full compensation for providing the personnel, software and equipment to evaluate the results of the monitoring for each substructure unit for the purpose of establishing production pile driving criteria, and the electronic submittal of the driving criteria and report with the results of the CAPWAP evaluation.

243. Removing and Resetting Noise Wall Panels B-40-578, Item SPV.0060.4005.

A Description

This special provision describes removing existing noise wall panels and posts from the existing bridge parapet, storing them, and resetting them upon completion of the new parapet.

B (Vacant)

C Construction

Remove the noise wall panels and posts necessary to allow completion of the parapet work detailed in the plans, taking care not to damage them. Store the noise wall panels and posts in an area away from construction activities to prevent damage. In the event that damage does occur to any item that is designated for re-use in the new work, repair or replace the damaged item to the satisfaction of the engineer at no expense to the department.

D Measurement

The department will measure Removing and Resetting Noise Wall Panels, B-40-578 as a single complete unit of work, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4005	Removing and Resetting Noise Wall Panels B-40-578	EACH

Payment is full compensation for removing the noise wall panels and posts as necessary; properly storing the noise wall panels and post to avoid damage; and resetting the noise wall panels, including necessary hardware for the post to the new parapet.

244. Anchor Assemblies Noise Barrier Structures B-40-578, Item SPV.0060.4006.

A Description

Furnish and install anchor bolt assemblies for noise barriers that will be installed on bridge parapet as shown on the plans.

B Materials

Anchor bolts shall be of size, spacing, and grade as given on the plans and conform to ASTM F1554 and Supplementary Specification S4. Provide ASTM A563 heavy hex nuts and ASTM F436 washers, all hot-dip galvanized according to ASTM A153, class C, supplemented by ASTM F2329. Provide four nuts and washers per anchor bolt for Anchor Assemblies Noise Barriers Structures. Provide embedded anchor plates and/or anchor plate-templates for anchor assemblies as shown on the plans.

Hot-dip galvanize the entire anchor assembly. Galvanize steel angles conforming to ASTM A123 and galvanize anchor bolts, nuts and washers conforming to ASTM A153, class C, supplemented by ASTM F2329. Provide enlarged threads on nuts for proper fit after galvanizing.

C Construction

Install embedded anchor assemblies in concrete structures at locations as shown on the plans. Mount anchor assemblies to formwork or otherwise provide positive support of anchor assembly within formwork as necessary to prevent movement, shifting or misalignment of the anchor assembly during subsequent concrete placement. Protect or clean exposed anchor bolt threads from concrete splatter.

Coordinate location and spacing of anchor assemblies embedded in bridges and retaining walls for mounting noise barriers on bridges and retaining walls with approved noise barrier shop drawings.

D Measurement

The department will measure Anchor Assemblies Noise Barriers Structures by each individual anchor assembly, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4006	Anchor Assemblies Noise Barrier Structures B-40-578	EACH

Payment is full compensation for furnishing and installing the anchorages.

245. Eye Bolt Drilled In, Item SPV.0060.4010.

A Description

This special provision describes providing and installing drilled in eye bolts at existing structures.

B Materials

Furnish eye bolt and loop insert as shown in the plans.

Furnish adhesive anchors as specified in standard spec 502.2.12.

C Construction

Install adhesive anchors and eye bolts as specified in standard spec 502.3.14 and per manufacturer's recommendations.

D Measurement

The department will measure Eye Bolt Drilled In as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4010	Eye Bolt Drilled In	EACH

Payment is full compensation for furnishing all materials, for installation, and for pullout testing including additional engineer-directed verification testing.

246. Bearing Assemblies Fixed UPRR B-40-921, Item SPV.0060.4015; Bearing Assemblies Expansion UPRR B-40-921, Item SPV.0060.4016.

A Description

This special provision describes detailing, fabricating, furnishing, casting, machining or preparing otherwise, delivering, and installing steel bearing assemblies according to the details shown on the plans, part 5 of chapter 15 of volume 2 of the American Railway Engineering and Maintenance-of-Way Association (AREMA) code, standard spec 506, as directed by the Union Pacific Railroad Company (UPRR) engineer, and as hereinafter provided. UPRR bearings, where called for on the plans, shall be defined as steel/bronze flat sliding bearings. Pot bearings are not allowed per AREMA 15-5.1.5.c and 15-5.7.1.c. Where the AREMA code conflicts with standard spec 506, the AREMA code shall control.

This work includes furnishing and installing complete bearing assemblies as the plans show including rocker plate, slider plate, sole plate, base plate, masonry plate, bronze sliding surfaces, shear resisting mechanism (pintles, guide/stop bars and hold-down tabs), neoprene bedding pad, structural bolts for connecting upper portion of bearing assembly to the superstructure member, anchor bolts and non-shrink grout for attaching the masonry plate to the concrete substructure beam seat.

B Materials

B.1 General

Use new and unused materials with no reclaimed material incorporated into the finished bearings, that conform to the applicable provisions of the AREMA code and standard spec 506 and to the following standards. Any visual defects will be cause for rejection.

B.2 Bearing Types

Fixed bearings allow rotation in indicated directions as shown on the plans but do not allow any horizontal movement.

Expansion bearings allow rotation in indicated directions as shown on the plans. Horizontal movement is allowed in only one direction as shown on the plans and must resist horizontal forces in constrained directions.

B.3 Steel Plate

Use steel plate that conforms to the requirements of ASTM A588.

B.4 Stainless Steel

Use stainless steel that conforms to the requirements of ASTM A276, Type 410, Annealed.

B.5 Self-Lubricating Bronze Plate

Manufacture bronze plate according to ASTM B22.

Provide lubricant consisting of graphite and metallic substances with a lubricating binder that completely covers adjoining sliding surfaces. Do not use molybdenum disulfide or other ingredients that may promote electrolytic or chemical action between sliding surfaces. Do not use shellac, tar or asphalt, or petroleum solvents as binders.

B.6 Neoprene Bedding Pad

Provide bedding pads made of neoprene conforming to the requirements of AREMA 15-5.6.2.1(a) and the same size as the masonry plate according to AREMA 15-5.6.3.1 to meet the following test requirements:

Physical Property	ASTM Test Method	Requirement
Hardness, Shore A Durometer	D2240	50 min., 60 max.
Tensile Strength, min.	D412	2250 psi
Ultimate Elongation, min.	D412	350%
Compression Set After 22 Hours	D395 (Method B)	
Temperature		212 degrees F
Compression set, max.		35%

B.7 Connecting Bolts

Use high strength bolts that conform to the requirements of AREMA chapter 15 and standard spec 506. Use lock washers that are steel, regular, helical spring washers meeting ANSI B18.21.1. Galvanize lock washers according to ASTM F2329. Coordinate all bolted connections between the bearing manufacturer and the structural steel fabricator for the steel superstructure members. Use bolts to connect the top plate of the bearing to the steel superstructure members using a “snug tight” connection as defined in AREMA 15-3.2.3.

B.8 Anchor Bolts

Provide anchor rods as shown on the plans and according to ASTM F1554 (Grade 105) and hot-dip galvanize according to ASTM F2329.

B.9 Grout

Use non-metallic, non-corrosive, non-shrink grout for filling anchor bolt blockouts per ASTM C1107 with minimum 28-day compressive strength called for on the plans.

C Construction

C.1 Detailing Requirements

C.1.1 General

Bearings have been designed and shall be manufactured for the loads and movements given on the plans and according to AREMA chapter 15, part 5. Detail shop drawings conforming to the design shown in the plans. Include all bearing components, rocker plates, slider plates, self-lubricating bronze plates, stainless steel plates, sole plates, base plates, masonry plates, neoprene bedding pads, connection bolts, and concrete anchor bolts in the shop drawing details. Do not detail any field welding of bearings. If any bearing element in the shop drawings deviates from plan details, submit calculations for that element with the shop drawing submittal for review by the engineer and the UPRR engineer. Ensure complete shop drawing approval by the engineer and the UPRR engineer before ordering materials.

Meet the following additional requirements:

C.1.2 Sole and Masonry Plates

Provide shim plates or shim packs with the masonry plates that the plans show, for field adjustment to account for construction tolerances. Provide sole plates with a machined recess to allow the snug placement of bronze plates.

C.1.3 Rocker, Slider and Base Plates

Apply, as appropriate, the provisions of AREMA chapter 15, part 5 to the detailing of the rocker, slider and base plates used in flat sliding bearings.

C.1.4 Shear Resisting Mechanism

Conform to the requirements of AREMA 15-5.3.8 and as described in this section. Weld guide bars to the slide plates. Detail guide bars for the specified horizontal loads, but not less than 10 percent of the vertical capacity of the bearing.

Provide guided members with their contact area within the guide bars in all operating positions. Provide a total clearance between guide bars and the guided member of no greater than 1/8 inch.

C.1.5 Finish of Steel Components

Finish all steel surfaces in contact with bronze or different steel surfaces, to a smoothness as indicated on the plans, or less.

C.1.6 Bronze Plate

Fabricate lubricated bronze plate with the thickness given on plans and install in a square-edged recess that the plans show. Make the shoulders of the recesses sharp and square.

C.1.7 Translation Capacity

Provide the translation capability for both guided and non-guided bearings by means of a polished steel sliding plate that bears on a lubricated bronze plate.

C.1.8 Geometric Limitations

Limit the horizontal dimensions to the available bearing seat area of the concrete and the bottom flanges as detailed on the plans. Submit any modifications required to accommodate the bearings to the UPRR engineer and the engineer for approval prior to ordering materials. Prepare any modifications required at no additional cost to the department.

C.1.9 Future Maintenance

Manufacture bearings so that future maintenance of the bearings can be performed. Provide the manufacturer's instructional manual to the UPRR engineer and the engineer for the inspection and maintenance of the bearings. Include in this manual all the necessary steps to inspect and replace any and all portions of the bearings. Restrict vertical upward movement of the superstructure and structural steel, due to jacking, to less than 0.5 inch. Prepare procedures for future replacements of individual components and submit for approval of the UPRR engineer and the engineer prior to the manufacture of any bearings for this project.

C.2 Structural Steel Coordination

Coordinate all connections and fit up between the bearing manufacturer and the structural steel fabricator. Submit any modifications from details shown in the plans required to accommodate the bearings chosen to the UPRR engineer and the engineer for approval prior to ordering materials. Prepare any modifications required at no additional cost to the department.

C.3 Submittals

Submit the following items to the UPRR engineer and the engineer for review and approval prior to ordering materials of the bearing assemblies:

- Shop drawings for all components and assemblies, including general arrangements and large-scale details. Include with the shop drawings tables showing load capacity and movement rating, if applicable, of each bearing, including initial offset required at various ambient temperatures. Include the manufacturer's instructions for proper installation of the bearing assemblies in the shop drawings. Shop drawings which lack manufacturer's installation instructions will be returned without approval.
- Welding procedures. Use qualification procedures of AWS D1.5 and D1.6 for all shop welders, welding operators, welding equipment, and welding procedures.
- Drawings indicating surfaces to be painted or zinc metalized according to section C.7 of this special provision and type of coating used.

C.4 Responsibility

Review and approval of the manufacturer's shop drawings by the UPRR engineer and the engineer does not relieve the manufacturer of complete responsibility for shop drawing accuracy and completeness.

C.5 Shop Inspection

The UPRR engineer and the engineer reserve the right to visit the manufacturer's fabrication shop for purposes of inspecting the manufacturing, assembly, testing, and painting of the bearings. Allow the inspectors free access to the necessary parts of the manufacturer's plant. Notify the UPRR engineer and the engineer at least two weeks in advance of manufacturing.

C.6 Fabrication Requirements

C.6.1 Tolerances

Provide fabrication and tolerances according to the requirements of AREMA chapter 15, part 5, and as herein specified.

C.6.2 Determination of Flatness

Use the following method to determine the flatness of bearings after welding and fabrication:

- Place a precision straightedge that is longer than the nominal dimension to be measured in contact with the plate surface to be measured.
- Select a feeler gage with a thickness corresponding to the flatness tolerances of the AREMA code cited above and having a tolerance of +/-0.001 inch, and attempt to insert it under the straightedge.
- Flatness is acceptable if the feeler does not pass under the straightedge.

C.7 Painting or Metalizing

Paint or zinc metalize the bearing assemblies according to AWS C2.18-93 and AWS C2.23:2003. Do not galvanize. Do not paint or metalize any surfaces covered by stainless steel or bronze plate. Mask off tapped holes during painting or metalizing.

C.8 Sampling, Testing, and Inspection

Sample according to AREMA chapter 15, part 5, the standard specifications, or as determined by the UPRR engineer and the engineer.

Perform all testing in the presence of a representative of the UPRR and the department or their designated inspection agency.

Perform three separate tests. Conduct the first test on all bearing types with the bearing loaded to 150% of the vertical design capacity. Maintain uniform contact on all rotational elements during the test. Maintain the test load for at least one hour.

Conduct the second test to measure the coefficient of friction on a representative sliding bearing. During this test, load the bearing to 100% of the vertical design capacity while measuring the coefficient of friction. Measure the coefficient of friction at the bearing design capacity on the 5th, 15th, and 100th cycles at a speed of 1-inch/minute. Run a total of 100 cycles. Calculate the sliding coefficient of friction as the horizontal load required to maintain continuous sliding at a given speed divided by the bearing's design capacity vertical load. Prior to testing, apply the vertical load continuously for a minimum of one hour. Do not exceed a measured sliding coefficient of friction of 0.10 at 68 degrees F, except when approved by the UPRR engineer and the engineer.

Conduct the third test on fixed and guided bearing assemblies to verify the horizontal load carrying capacity. During this test, load the bearing to 100% of the vertical design capacity while applying a horizontal load equal to 150% of the horizontal design load capacity to the assembly.

Replace any bearing showing failure of any component parts during or after these load tests at no additional cost to the department.

The following indicates failure during testing:

- Binding of bearing components or other movement restrictions occur under design displacements and / or rotations.
- “Lift-off” or separation between plates and rocker under rotation.
- The measured static and dynamic coefficient of friction exceeds 10%.
- Cracks or permanent deformation of the bronze plate, stainless steel sheet, other components, or welds.

Furnish to the UPRR engineer and the engineer certified copies of the test reports on the physical properties of the component materials for the furnished bearings and a certification by the bearing manufacturer stating the furnished bearing assemblies conform to all the requirements shown on the plans and specifications contained herein.

Furnish to the UPRR engineer or the engineer random samples of component materials used in the bearings for testing by the UPRR or the department. The UPRR or the department reserves the right to have the manufacturer perform the specified load tests on one or more of the furnished bearings. A furnished bearing is defined as a steel/bronze bearing assembly that has been delivered to the site. Replace the tested bearing, if it shows failure, at no additional cost to the department. Load test the remaining bearings for acceptance at the manufacturer’s expense.

C.9 Identification, Storage, and Handling

Fully assemble each bearing at the manufacturing plant and deliver to the construction site as complete units. Submit copies of all delivery tickets to the UPRR engineer and the engineer.

Stamp each masonry plate on their edge faces with the manufacturer’s name, structure number, bearing number as shown on the plans, the installed location, bearing orientation, centerlines for alignment in the field, upstation direction, and top surface location. Place the stamp on a surface visible after installation so it remains clearly visible after storage, painting, shipment to the fabricator, and delivery to the project field site.

Store each bearing in the fabrication shop or at an independent warehouse in a clean, dry, and covered facility until required at the project construction site. Transport and deliver the bearings to the project site when required for installation by others under a separate construction and erection contract. While in storage, keep the bearings banded, wrapped, and secured in a condition suitable for shipment. Store and ship the bearings in moisture-proof and dust-proof covers. Wrapping material is subject to the UPRR engineer’s and the engineer’s approval. Do not stack the bearings. Hold the bearings together with removable restraints so sliding surfaces are not damaged.

Do not disassemble the bearing devices prior to installation without the knowledge and consent of the UPRR engineer and the engineer and manufacturer.

Repair or replacement of damaged bearing assemblies, in part or in whole, will be at the discretion of the UPRR engineer or the engineer at no additional cost to the department.

C.10 Installation

Install the bearings in conformance to AREMA 15-5.8.5 and as described in this section. Install the bearings in strict accordance with the manufacturer’s instructions as approved by the UPRR engineer and the engineer. Furnish technical assistance to the contractor and the UPRR engineer and the engineer through the personal services of a technical representative who is a full-time employee of the manufacturer during installation of the bearings. The manufacturer’s technical representative is required to be present for the placement of the first bearing. At the option of the UPRR engineer or the engineer or contractor, the technical representative may be required to be present for the placement of any number of additional bearings.

D Measurement

The department will measure Bearing Assemblies Fixed UPRR B-40-921 and Bearing Assemblies Expanstion UPRR B-40-921by the unit for each bearing assembly, acceptably completed according to the contract.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4015	Bearing Assemblies Fixed UPRR B-40-921	EACH
SPV.0060.4016	Bearing Assemblies Expansion UPRR B-40-921	EACH

Payment is full compensation for detailing, fabricating, casting, machining or preparing otherwise, galvanizing, metalizing, painting, testing, storing, furnishing, transporting, and installing acceptable bearings – including rocker plate, slider plate, sole plate, base plate, masonry plate, stainless steel and bronze sliding surfaces, shear resisting mechanism (pintels, guide/stop bars and hold-down tabs), neoprene bedding pad, structural bolts for connecting upper portion of bearing assembly to the superstructure member, anchor bolts and non-shrink grout; for preparing shop drawings; and for providing technical assistance at the project site.

247. Crosshole Sonic Log (CSL) Testing, Wall Secant Pile 59.06-Inch, Item SPV.0060.4020.

A Description

A.1 General

This special provision describes providing specialized equipment and trained testing personnel and to perform Crosshole Sonic Log (CSL) testing of drilled shafts according to the plans and as hereinafter provided.

Crosshole Sonic Logging, (CSL), is a nondestructive testing (NDT) method that measures the time for an ultrasonic pulse to travel from a signal source inside an access tube to a receiver inside another access tube and evaluates the integrity of drilled shafts.

A.2 CSL Testing Personnel Requirements

The contractor shall provide a CSL testing expert to direct and perform all aspects of the CSL testing and provide interpretation of results. The CSL testing expert shall be a professional engineer licensed in the State of Wisconsin, be employed by an independent testing agency, and have experience on a minimum of 5 projects performing CSL testing of drilled shafts. The independent testing agency shall have a minimum of 3 years of experience in performing CSL testing of drilled shafts. Submit the qualifications of the proposed CSL testing expert to the engineer for approval prior to beginning drilled shaft installation.

B (Vacant)

C Construction

C.1 CSL Testing Coordination

Schedule and coordinate drilled shaft construction with the CSL testing expert. Alter normal construction procedures as necessary to facilitate the CSL testing procedure. This includes providing suitable and safe access to the site and specific locations of drilled shafts to be tested and aiding the CSL expert to facilitate the CSL testing.

C.2. CSL Testing

Perform CSL testing and analysis on each completed drilled shaft. Conduct CSL testing according to ASTM D 6760. Notify the engineer, and the UPRR engineer if applicable, of the date and time of each CSL test at least 48 hours prior to the scheduled test. Perform CSL testing after the drilled shaft concrete has cured at least 72 hours and after the concrete compressive strength reaches or exceeds 2,500 psi.

Pull the CSL probes simultaneously, starting from the bottoms of the access tubes, over an electronic depth measuring device. Perform the CSL tests with the source and received probes in the same horizontal plane. Continuously record CSL signals at depth intervals of 2.5 inches or **less from the** bottom of the tubes to the top of each shaft. Perform CSL testing on every possible tube combination.

Immediately report potential local defects indicated by testing to the engineer and the UPRR engineer.

Grout the access tubes after testing is complete, at the direction of the engineer, and the UPRR engineer if applicable. Place the grout with a pump, starting at the bottom of each access tube.

C.3 CSL Evaluation

Evaluate the concrete in the shaft using the following classification on each CSL profile:

- Satisfactory:
  - FAT increase 0% to 20%, and;
  - Energy reduction less than or equal to 9 decibels
- Defect:
  - FAT increase greater than 20%, or;
  - Energy reduction greater than 9 decibels

C.4 CSL Testing Reports

Within three working days of completion of CSL testing and receipt of shaft construction record, submit a CSL Testing Report for each tested drilled shaft to the engineer and the UPRR engineer summarizing CSL testing results. At a minimum the CSL testing reports must include:

(1) A description of the testing equipment, the date and location of test, and the number of days between concrete placement and CSL testing.

(2) The CSL ultrasonic profiles with analyses of the following all tube pair combinations tested:

a. First pulse arrival time (FAT) versus depth.

b. Relative pulse energy / amplitude versus depth.

c. A presentation of the nested signal peak as a function of time plotted versus depth (waterfall diagram).

d. Note all shaft-specific construction information (e.g. elevations of the top of shaft, bottom of casing, bottom of shaft, etc.), on all pertinent graphical displays.

(3) Indication of size and location along the depth of the shaft of all defects.

(4) A discussion and assessment of the data quality and integrity of the tested drilled shaft, including a discussion of all interpretations in conflict with the evaluation criteria in subsection C.3, as well as a discussion of all other unusual results.

(5) Conclusions or recommendations concerning the acceptability of the drilled shaft based on the interpretation of the CSL testing results against the evaluation criteria in subsection C.3.

D Measurement

The department will measure Crosshole Sonic Log (CSL) Testing, Wall Secant Pile 59.06 by the unit for each drilled shaft tested, acceptably completed, regardless of the number of access tubes in the shaft.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4020	Crosshole Sonic Log (CSL) Testing, Wall Secant Pile 59.06-Inch	EACH

Payment will be full compensation for furnishing testing equipment and performing CSL testing, evaluating and interpreting results, and providing test reports.

Furnishing and installing CSL access tubes are included in the shaft bid items.

248. Thermal Integrity Profiler (TIP) Testing, Wall Secant Pile 59.06-Inch, Item SPV.0060.4025.

A Description

A.1 General

This special provision describes providing specialized equipment and trained testing personnel and to perform Thermal Integrity Profiler (TIP) testing of drilled shafts continuously during concrete placement and curing according to ASTM D7949 “Standard Test Methods for Thermal Integrity Profiling of Concrete Deep Foundations”, the plans and as hereinafter provided.

Thermal Integrity Profiler (TIP) testing records temperature of curing concrete (hydration energy) along the length of a drilled shaft to assess the quality of drilled foundation shafts, drilled tangent pile wall shafts or drilled secant pile wall shafts hereinafter referred to as “drilled shafts”. Data will be acquired using Thermal Wires™, hereinafter referred to as “thermal wires”, tied to the reinforcement bar cage and installed prior to concreting. The expected temperature at any location is dependent on the shaft diameter, mix design, time of measurement and distance to the center of the shaft. TIP measurements are used to estimate the shape of the shaft along the length of the shaft. These estimates are compared with concreting logs to assess the overall quality of the shaft.

TIP testing can be performed using embedded thermal wires or using probes lowered into embedded tubes. This special provision specifies the thermal wire method.

A.2 TIP Testing Personnel Requirements

The contractor shall provide a TIP testing expert to direct and perform all aspects of the TIP testing and provide interpretation of results. The TIP testing expert must be a professional engineer licensed in the State of Wisconsin. The TIP testing expert shall be employed by an independent testing agency with documented and approved experience in TIP testing. Submit the qualifications of the proposed TIP testing expert to the engineer for approval prior to beginning drilled shaft installation.

B Materials

Provide a TIP testing data acquisition system consisting of multiple thermal wires embedded in the drilled shaft concrete to be TIP tested and connected to a computer based data recorder. The data collection system shall be capable of automatically collecting temperature verses time after casting data along the length of the drilled shaft at intervals of 15 minutes. The thermal wires and TIP testing data acquisition system shall be as manufactured by:

Pile Dynamics Incorporated
30725 Aurora Road
Cleveland Ohio 44139
Phone: (216) 831-6131
Web Page: www.pile.com

Provide equipment with the following minimum requirements:

a. A computer-based TIP Data Acquisition System to monitor and download temperature versus time after casting.

b. Ability to automatically collect data at user defined time intervals (typically 15 minutes).

C Construction

C.1 TIP Testing Coordination

Schedule and coordinate drilled shaft construction with the TIP testing expert. Alter normal construction procedures as necessary to facilitate the TIP testing procedure. This includes providing suitable and safe access to the site and specific locations of drilled shafts to be tested and providing assistance to the TIP expert to facilitate the TIP testing.

C.2 Thermal Wire Installation

(1) Install thermal wires as shown in the plans the full length of drilled shafts and according to the procedures and recommendations of the TIP expert. For the initial installation of thermal wires on the contract, the TIP expert shall be on site to provide guidance and training on the installation and hookup of the thermal wires.

(2) For the drilled shafts indicated on the plans to be TIP tested, the contractor shall install the number of thermal wires that is equal to or greater than the shaft diameter. For example a drilled shaft diameter of 4.5 feet shall have minimum 5 thermal wires evenly spaced around the perimeter of the reinforcement cage and as shown in the plans. The minimum number of thermal wires for any shaft diameter shall be 4.

(3) Align and attach the thermal wires to the main longitudinal reinforcement of the drilled shaft spaced approximately equally around the perimeter of the drilled shaft reinforcement cage. Stretch the thermal wires to minimize the wire slack and tie vertically at a maximum of every 3 feet to the main longitudinal reinforcement. Locate the thermal wire on the main longitudinal reinforcement bar such that it is 90° to the line connecting the reinforcement to the center of the shaft.

(4) Provide and install one additional thermal wire supported and attached to a longitudinal reinforcement bar positioned parallel to and offset from the perimeter reinforcement at a fixed and known radial distance closer to the center of the shaft; typically, at least 2 inches or as shown in the plans. Record the offset distance to the closest perimeter thermal wire before placing the reinforcement bar cage into the drilled shaft.

C.2. TIP Testing

Connect the thermal wires to a Thermal Access Port (TAP) prior to or immediately following drilled shaft concrete placement. Care shall be taken to record the position of each cable in the cage by serial number. The exact timing and duration of data measurement will be determined by the contractor's TIP testing expert. Data shall be collected at time intervals of 15 minutes for the duration of time sufficient to reach and record the peak heat of hydration temperature, but for a minimum of 48 hours or longer minimum duration as recommended by the TIP expert, the engineer, or the UPRR engineer, which timeline is greater. After completion of the data collection period, the TAP shall be connected to the main TIP data acquisition unit and the data files shall be downloaded for inspection and evaluation of temperatures versus time for depth along the length of the drilled shaft.

Potential local defects indicated by locally low temperatures relative to the average temperature at that depth, or average temperatures significantly lower than the average temperatures at other depths, shall be immediately reported to the engineer, and the UPRR engineer if applicable.

C.3. TIP Testing Reports

Within five working days of completion of TIP testing and receipt of shaft construction record, submit a TIP Testing Report for each drilled shaft tested to the engineer, and the UPRR engineer if applicable, summarizing TIP testing results. At a minimum the TIP testing reports must include:

(1) Shaft specific construction information (e.g. elevations of the top of shaft, bottom of casing, bottom of shaft, etc.) should be noted on all pertinent graphical displays , so that the temperature plots are adjusted for end effects.

(2) Graphical displays of temperature measurements in each thermal wire versus depth at peak temperature.

(3) Indication of unusual temperatures, particularly significantly cooler local deviations of the average at any depth from the overall average over the entire length, in either probe or thermal wire measurements

(4) The overall average temperature at peak temperature. This temperature is proportional to the average radius computed from the actual total concrete volume installed. Radius at any point can then be determined from the temperature at that point compared to the overall average temperature.

(5) A depiction of the shaft radius vs. depth including the concrete cover at peak temperature. Variations in temperature between wires (at each depth) which in turn correspond to variations in cage alignment should be noted.

(6) The cage alignment or offset from center should be noted.

(7) Conclusions or recommendations concerning the acceptability of the drilled shaft based on the interpretation of the TIP testing results obtained.

D Measurement

The department will measure Thermal Integrity Profiler (TIP) Testing by the unit for each drilled shaft tested, acceptably completed, regardless of the number of thermal wire strings in the shaft.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4025	Thermal Integrity Profiler (TIP) Testing, Wall Secant Pile 59.06-Inch	EACH

Payment will be full compensation for furnishing and installing the thermal wires, data collection unit, evaluation and interpretation of results, providing test reports.

249. Trial Wall Panel Secant Pile 59.06-Inch, Item SPV.0060.4030.

A Description

The work consists of installing a trial (non-production) secant pile wall panel to verify the proposed means and methods of drilled shaft installation for construction of secant pile walls, and drilled foundation shafts of the same size, included in the contract.

The trial secant pile wall panel must be installed by the same contractor and work crews who will perform the production drilled shaft installation work for the secant pile walls, and the drilled foundation shafts of the same size, on the contract. If the secant pile walls, and the drilled foundation shafts of the same size, will be constructed by separate contractors and work crews, install separate trial walls constructed by the separate contractors and work crews as described below. No additional payment will be made for separate or additional trial walls. The same equipment and installation procedures intended to be used for the production work on the contract and in accordance to the accepted drill foundation shaft installation plan must be followed for construction of the trial secant pile wall panel.

Engineer acceptance of a successfully constructed trial secant wall panel is necessary prior to beginning the installation of any other secant piles, or drilled foundation shafts of the same size, included in the contract.

B Materials

Use materials for the trial panels as specified for the bid items Wall Secant Pile 59.06-Inch and as outlined for production shafts in the plans. If different materials are specified in the different bid items, incorporate the stronger materials in the phase 2 shafts.

C Construction

Construct the trial secant pile wall panel as specified under the item Wall Secant Pile 59.06-Inch and the accepted drilled foundation shaft installation plan. The trial secant pile wall panel shall consist of three overlapping 59.06-inch diameter drilled shafts, incorporating two phase 1 shafts and one phase 2 shaft. Dispose of obstructions as described under the special provision for obstructions. Reinforce the shafts as shown in the construction plans for Structure R-40-641. Provide and install 5 crosshole sonic logging (CSL) tubes and 5 thermal integrity profile (TIP) wires in all shafts of the trial secant pile wall panel. Drilled shafts within the trial secant pile wall panel shall extend to a depth that is equal to the maximum depth of production shafts required for Structure R-40-641.

Dispose all soil excavation and excess materials removed from drilled shaft excavations for construction of the trial secant pile wall panel in accordance to the requirements of the contract.

Excavate the trial secant pile wall panel and completely expose the entire face to a depth of 20-feet below the top of the trial secant pile wall panel. Provide safe access in accordance to OSHA regulations for the engineer to inspect the entire exposed face of the full-width trial secant pile wall panel for a period of at least three business days after the face of the trial secant pile wall panel is excavated and exposed. Provide shoring, if necessary, to accomplish this.

The trial secant pile wall panel will be subject to non-destructive testing as specified for the items Wall Secant Pile 59.06-Inch, as called out in the non-destructive testing pay items and as directed by the engineer. Acceptance of the trial secant pile wall panel will be as specified for the item Wall Secant Pile 59.06-Inch. Upon acceptance by the engineer, remove the trial secant pile wall panel to at least elevation 675.0 or as otherwise directed by the engineer, and backfill the trial secant pile wall panel. Backfill the excavation to meet minimum standard compaction requirements per the standard specifications. Any necessary sheeting, shoring, and removal of the trial secant pile wall panel shall be included in the cost of the trial secant pile wall panel.

D Measurement

The department will measure Trial Wall Panel Secant Pile 59.06-Inch by the unit for each trial wall tested, consisting of three consecutive overlapping secant shafts, acceptably completed.

Separate or additional, or unsuccessful or rejected trial secant pile wall panel installations, or trial secant pile wall panels not meeting specifications, will not be measured for payment nor be cause for additional compensation.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4030	Trial Wall Panel Secant Pile 59.06-Inch	EACH

Payment is full compensation for excavating and drilling the trial secant pile wall panel; handling and properly disposing of excavated material; removing obstructions; providing and placing the concrete for secant pile drilled shafts to the diameter and depth required; providing and installing reinforcing steel; providing and placing CSL tubes; core sample; meeting QMP drilled shafts special provision; performing, evaluating and reporting all non-destructive testing on all shafts; shoring; removal; backfilling and site restoration; and to otherwise meet these specifications.

250. Trial Wall Panel Secant Pile 59.06-Inch UPRR, Item SPV.0060.4031.

A Description

The work consists of installing a trial (non-production) secant pile wall panel to verify the proposed means and methods of drilled shaft installation for construction of secant pile walls, and drilled foundation shafts of the same size, included in the contract.

The trial secant pile wall panel must be installed by the same contractor and work crews who will perform the production drilled shaft installation work for the secant pile walls, and the drilled foundation shafts of the same size, on the contract. If the secant pile walls, and the drilled foundation shafts of the same size, will be constructed by separate contractors and work crews, install separate trial walls constructed by the separate contractors and work crews as described below. No additional payment will be made for separate or additional trial walls. The same equipment and installation procedures intended to be used for the production work on the contract and in accordance to the accepted drill foundation shaft installation plan must be followed for construction of the trial secant pile wall panel.

Engineer, and UPRR engineer if applicable, acceptance of a successfully constructed trial secant wall panel is necessary prior to beginning the installation of any other secant piles, or drilled foundation shafts of the same size, included in the contract.

B Materials

Use materials for the trial panels as specified for the bid items Wall Secant Pile 59.06-Inch UPRR and as outlined for production shafts in the plans. If different materials are specified in the different bid items, incorporate the stronger materials in the phase 2 shafts.

C Construction

Construct the trial secant pile wall panel as specified under the item Wall Secant Pile 59.06-Inch UPRR and the accepted drilled foundation shaft installation plan. The trial secant pile wall panel shall consist of three overlapping 59.06-inch diameter drilled shafts, incorporating two phase 1 shafts and one phase 2 shaft. Dispose of obstructions as described under the special provision for obstructions. Reinforce the shafts as shown in the construction plans for Structure B-40-921. Provide and install 5 crosshole sonic logging (CSL) tubes and 5 thermal integrity profile (TIP) wires in all shafts of the trial secant pile wall panel. Drilled shafts within the trial secant pile wall panel shall extend to a depth that is equal to the maximum depth of production shafts required for Structure B-40-921.

Dispose all soil excavation and excess materials removed from drilled shaft excavations for construction of the trial secant pile wall panel in accordance to the requirements of the contract.

Excavate the trial secant pile wall panel and completely expose the entire face to a depth of 20-feet below the top of the trial secant pile wall panel. Provide safe access in accordance to OSHA regulations for the engineer, and the UPRR engineer if applicable, to inspect the entire exposed face of the full-width trial secant pile wall panel for a period of at least three business days after the face of the trial secant pile wall panel is excavated and exposed. Provide shoring, if necessary, to accomplish this.

The trial secant pile wall panel will be subject to non-destructive testing as specified for the items Wall Secant Pile 59.06-Inch UPRR, as called out in the non-destructive testing pay items and as directed by the engineer, and the UPRR engineer if applicable. Acceptance of the trial secant pile wall panel will be as specified for the item Wall Secant Pile 59.06-Inch UPRR. Upon acceptance by the engineer, and the UPRR engineer if applicable, remove the trial secant pile wall panel to at least elevation 651.5 or as otherwise directed by the engineer, and the UPRR engineer if applicable, and backfill the trial secant pile

wall panel. Backfill the excavation to meet minimum standard compaction requirements per the standard specifications. Any necessary sheeting, shoring, and removal of the trial secant pile wall panel shall be included in the cost of the trial secant pile wall panel.

D Measurement

The department will measure Trial Wall Panel Secant Pile 59.06-Inch UPRR by the unit for each trial wall tested, consisting of three consecutive overlapping secant shafts, acceptably completed.

Separate or additional, or unsuccessful or rejected trial secant pile wall panel installations, or trial secant pile wall panels not meeting specifications, will not be measured for payment nor be cause for additional compensation.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4031	Trial Wall Panel Secant Pile 59.06-Inch UPRR	EACH

Payment is full compensation for excavating and drilling the trial secant pile wall panel; handling and properly disposing of excavated material; removing obstructions; providing and placing the concrete for secant pile drilled shafts to the diameter and depth required; providing and installing reinforcing steel; providing and placing CSL tubes; core sample; meeting QMP drilled shafts special provision; performing, evaluating and reporting all non-destructive testing on all shafts; shoring; removal; backfilling and site restoration; and to otherwise meet these specifications.

251. Track, Shoring and Existing Structure Monitoring UPRR, Item SPV.0060.4040.

A Description

The work consists of monitoring existing and temporary structures, shoring systems, and track carrying UPRR active track loading.

B Materials

B.1 General

Provide adhesive-backed reflective targets to affix to each rail of active track.

Utilize survey equipment for control and monitoring with an accuracy of 0.01’. GPS quality is not acceptable.

B.2 Submittals

B.2.1. Monitoring Plan

Submit a detailed monitoring plan for review and approval to the engineer and the UPRR engineer prior to beginning any work.

B.2.2. Contingency Plan

Provide an established contingency plan(s) to the engineer and the UPRR Engineer for review and approval in case shutdown values are reached. At that time, all construction operations shall stop until the matter is resolved. Coordinate contingency plan to be compatible with the force work agreement between UPRR and the department. Provide detailed means and methods, with options if necessary in the contingency plan.

C Construction

C.1 Monitoring Program

Monitor UPRR active track, shoring and existing structures for settlement and/or displacement during an adjacent excavation, pile driving or other activity as directed by the engineer and the UPRR engineer. All construction shall maintain track, shoring and existing structures carrying active tracks within the following requirements:

Track, Shoring & Existing Structure Deflection/Settlement Limits

i. The top of rail shall not permanently deflect more than ¼ inch vertical or horizontal.

ii. Any point of the shoring shall not deflect more than 3/8" for shoring located at 18' from CL of track or closer.

iii. Any point of the shoring shall not deflect more than 1/2" for shoring located more than 18' from CL of track, unless the shoring is supporting a cut entirely located in Zone B.

iv. Any point of existing substructure supporting Railroad Track(s) shall not permanently deflect more than 3/8 inch vertical or horizontal.

Develop a plan view showing the location of all monitoring points, subject to the requirements of subsection C.1.2.

C.1.2 Targets

Affix monitoring targets to each rail of each track throughout the project limits. Do not access track other than to initially place the track monitoring targets. Place monitoring targets such that monitoring is possible when a train is present. Monitoring during the passing of a train, however, is not required.

Affix monitoring targets at the top of the shoring and, if a braced system, at points of bracing. Monitor any existing substructures supporting Railroad Track(s) within the vicinity of the work with a minimum of 4 monitoring targets per existing substructure element. The distance between monitoring points on rail and shoring shall be spaced no more than 10 feet apart, and rail monitoring points must extend at least 20 feet beyond end of shoring system(s). Place monitoring points on rail and shoring no more than 10 feet apart and extend rail monitoring points at least 20 feet beyond end of shoring system(s). Away from shoring systems, place monitoring points at the same stations as geotechnical track embankment instrumentation installations.

Remove targets once monitoring phase is complete.

C.1.3 Execution

Establish a benchmark in the vicinity of the construction. Establish locations for shooting elevations on the targets at each area of construction. Process survey data into an easy-to-interpret digital format and submit to the engineer and the UPRR engineer upon request. Format the document to keep all prior survey results in one, easy to reference location. Commence monitoring two weeks before any new embankment is placed, or once any construction activity is within Zone A.

Monitor active track at the same intervals and at the same stations as monitoring of geotechnical track embankment instrumentation installations. While shoring carries active tracks, perform monitoring no less than three times a day. Continue monitoring of new structure once the new structure carries active tracks no less than once a day for 7 days or as required by the engineer and the UPRR engineer.

C.2 Contingency Plans

Start the contingency countermeasures from the approved contingency plan once the limits of the Threshold and Shutdown values for horizontal and/or vertical deflection and/or settlement:

Track monitoring values:

(i) Threshold value = 1/8 inch permanent vertical or horizontal deflection.

(ii) Shutdown value = 1/4 inch permanent vertical or horizontal deflection.

Shoring Monitoring values:

(i) Shutdown value = 3/8 inch permanent horizontal deflection for shoring located at 18' or closer to track CL.

(ii) Shutdown value = 1/2 inch permanent horizontal deflection for shoring located further than 18' from track CL, unless the shoring is supporting a cut entirely located in Zone B.

Existing Structure Monitoring values:

(i) Shutdown value = 3/8 inch permanent vertical or horizontal deflection and/or settlement.

Anticipate the need to implement each Contingency Plan with required materials, equipment and personnel. Once the Threshold value is met, determine the appropriate contingency plan and immediately discuss this plan with, and receive confirmation from, the engineer and the UPRR engineer. Once the Shutdown value is exceeded, stop all project work and commence the chosen contingency plan. The engineer and the UPRR engineer may choose to allow and/or require the immediate implementation of specific approved contingency plans once the Shutdown value is exceeded.

D Measurement

The department will measure Track, Shoring and Existing Structure Monitoring by the unit for each crossing consisting of monitoring track, shoring and structures carrying active UPRR track loading, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4040	Track, Shoring and Existing Structure Monitoring UPRR	EACH

Payment is full compensation for affixing targets; surveying and recording horizontal and vertical deflections; reporting deflections; submitting monitoring and contingency plans; undertaking and completing contingency countermeasures; and to otherwise meet these specifications.

252. Tieback Anchors, Item SPV.0060.4050; Tieback Anchor Performance Tests, Item SPV.0060.4051; Tieback Anchor Extended Creep Tests, Item SPV.0060.4052.

A Description

A.1 Qualifications of the Contractor

The work under this item consists of permanent, pressure-grouted or post grouted, ground anchors designed, furnished, installed, tested, and stressed.

Install ground anchors that shall develop the load carrying capacity indicated on the plans conforming to the testing subsection of these special provisions.

The contractor has the option to provide an alternate permanent earth anchor system with the approval of the department. The contractor shall then be responsible for selecting the permanent earth anchor type, method of installation, and for determining the bond length and anchor diameter that shall develop the factored design loads indicated on the plans. The analysis, design, construction and testing of the post tiebacks shall conform to the AASHTO LRFD Bridge Design Specifications and the AASHTO LRFD Bridge Construction Specifications.

A.2 General

The contractor performing the work described in these special provisions must have installed ground anchors for excavation retaining walls for a minimum of 5 years. Submit a list containing at least five projects where the contractor has installed ground anchors. Specifically, experience must demonstrate competence in the use of pressure or post grouting. At least one project must show evidence of permanence with a 5-year minimum age. The project experience documentation must include a brief project description, construction methods used during installation, local soil conditions, actual construction time and contact information consisting of an individual’s name and current phone number. Contacts must be capable of verifying project participation.

Submit staff experience records of the engineer, drill operators, and on-site supervisors who will be assigned to the project. The staff records must contain a summary of each individual’s experience and it must be complete enough for the engineer to determine whether each individual has satisfied the following qualifications.

Assign an engineer to supervise the work who has at least four years of experience in the design and construction of anchored earth retaining structures in similar soils. Do not use consultants or manufacturer’s representatives in order to meet the requirements of this section. Drill operators and on-site supervisors must have a minimum of one-year experience installing ground anchors with the contractor’s organization.

Submit qualifications and staff experience records at the preconstruction meeting or 21 calendar days prior to the start of ground anchor installation, whichever date is earlier. The engineer will approve or reject the contractor's qualifications and staff experience records within 14 calendar days after receipt of the submission. Do not start work on any ground anchor installation until approval of the contractor's qualifications and staff experience are given by the engineer. The engineer may suspend the ground anchor work if the contractor substitutes unqualified personnel for approved personnel during construction. If work is suspended due to the substitution of unqualified personnel, the adjustment in contract time resulting from the suspension of work will not be allowed.

A.3 Submittals

Prepare and submit to the engineer for review and approval working drawings and a design submission describing the ground anchor system or systems intended for use. The working drawings and design submission must be submitted thirty business days before the commencement of the ground anchor work. The working drawing and design submission must include certificates of compliance for the following materials, if used. The certificates must state that the material or assemblies to be provided will fully comply with the requirements of the contract.

- Prestressing steel or bar;
- Portland cement;
- Prestressing hardware;
- Bearing plates.

The engineer will approve or reject the contractor's submittals within 30 business days after receipt of the submission.

Submit to the engineer for review and approval or rejection mill test reports for the prestressing steel and the bearing plate steel. The engineer may require the contractor to provide samples of any ground anchor material intended for use on the project. The engineer will approve or reject the prestressing steel and bearing plate steel within five business days after receipt of the test reports. Do not incorporate the prestressing steel and bearing plates in the work without the engineer's approval.

Submit to the engineer for review and approval or rejection calibration data for each test jack, pressure gauge and reference pressure gauge to be used. The engineer will approve or reject the calibration data within 5 business days after receipt of the data. Do not commence testing until the engineer has approved the jack, pressure gauge, and reference pressure gauge calibrations.

Submit to the engineer within 10 calendar days after completion of the ground anchor work, a report containing the following information:

- As-Built plans showing the location and vertical and horizontal orientation of the tiebacks, capacity, tendon type, total length, and unbonded length as installed.
- Steel tendon, corrosion protection elements and grout certifications and/or mill reports.
- Grouting records indicating the following:
    1. Cement type;
    2. Cube test strength results;
    3. Grout volume for bonded and unbonded lengths;
    4. Grout pressure.
- Show on the as-built plans the type of testing performed for each post tieback.
- Tieback tests results (Performance and proof test data with load-anchor elongation curves).
- Other records as required per standard spec 106.

A.4 Definitions

Anchorage Devices. The anchor head wedges or nuts, which grip the prestressing steel.

Bearing Plate. The steel plate, which distributes the ground anchor force to the structure.

Bond Length. The length of the ground anchor, which is bonded to the ground and transmits the tensile force to the soil or rock.

Factored Design Load. The factored design load is the maximum anticipated factored load that will be applied to the ground anchor during its service life after stressing and testing have been completed. Design loads and applicable load factors are per AASHTO LRFD Bridge Design Specifications.

Ground Anchor. A system, referred to as a tieback or an anchor, used to transfer tensile loads to soil or rock. A ground anchor includes all prestressing steel, anchorage devices, bearing plates, grout, coatings, corrosion protection, and sheathings and couplers if used.

Minimum Specified Ultimate Tensile Strength. The minimum breaking strength of the prestressing steel as defined by the specified standard.

Tendon Bond Length. The length of the tendon, which is bonded to the anchor grout.

Total Anchor Length. The unbonded length plus the tendon bond length.

Unbonded Length. The length of the tendon, which is not bonded to the grout. The grout surrounding the unbonded length is a void filler and provides corrosion protection.

B Materials

B.1 References

AASHTO Standards

- M85 Portland Cement
- M183 Structural Steel
- M275 Threadbar Prestressing Steel
- M203 Seven-wire, low relaxation strands
- M222 High-Strength Low-alloy Structural Steel with 50,000 psi Minimum Yield Point to 4 Inches Thick
- M252 Corrugated Polyethylene Drainage Tubing

ASTM Standards

- A53 Specification for Steel Pipe
- A252 Specification for Welded and Seamless Steel Pipe Files
- A500 Specification for Cold-formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- A722 Threadbar Prestressing Steel
- A779 Compact Seven-wire, low relaxation strands
- D1248 Specification for Welded and Seamless Steel Pipe Files
- D1784 Specification for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds
- D4101 Specification for Propylene Plastic Injection and Extrusion Materials

Post-Tensioning Institute Standards

- “Guide Specification for Post-Tensioning Materials,” Post-Tensioning Manual, Post Tensioning Institute
- “Specification for Unbonded Single Strand Tendons,” Post-Tensioning Institute
- “Recommendations for Prestressed Rock and Soil Anchors,” Post-Tensioning Institute

B.2 Tieback Anchors

Admixtures that control bleed, improve flowability, reduce water content, and retard set may be used in the grout subject to the approval of the engineer. Expansive admixtures may only be added to the grout used for filling sealed encapsulations, trumpets, and anchorage covers. Accelerators are not permitted. Admixtures, if used, must be compatible with the prestressing steels and mixed per the manufacturer’s recommendations.

Fabricate exposed anchorage covers from steel or ductile cast iron with a minimum thickness of 0.10 inches. Securely attach the cover to the anchorage device or bearing plate. If the cover is to be grease filled, then the cover must form a permanent watertight enclosure for the anchorage device.

Use anchorage devices capable of developing 95 percent of the minimum specified ultimate tensile strength of the prestressing steel tendon. The anchorage devices must conform to the static strength requirements of section 3.1.6 (1) and section 3.1.8 (1) of the PTI “Guide Specification for Post-Tensioning Materials”.

Fabricate the bearing plate from steel conforming to ASTM A572 Grade 50 or AASHTO M223 Grade 50 specifications.

Fabricate the bondbreaker from a smooth plastic tube or pipe having the following properties:

- Resistant to chemical attack from aggressive environments, grout or grease.
- Resistant to aging by ultra-violet light.
- Fabricated from material non-detrimental to the tendon or bar.
- Capable of withstanding abrasion, impact, and bending during handling and installation.
- Enable the tendon to elongate during testing and stressing.
- Allow the tendon to remain unbonded after lock-off.

Use Type I, II, or III Portland cement conforming to AASHTO M85 for grout. The corrosion inhibiting grease must conform to the requirements of section 3.2.5 of the PTI, “Specification for Unbonded Single Strand Tendons”.

Fabricate heat shrinkable tubes from a radiation crosslinked polyolefin tube internally coated with an adhesive sealant. Before shrinking, the tube must have a nominal wall thickness of 24 mils. The adhesive sealant inside the tube must have a nominal thickness of 20 mils.

Fabricate ground anchor tendons from a single bar. Additionally, the ground anchor tendons must conform to the following:

- Steel bars conforming to AASHTO M275, or ASTM A722.
- Seven-wire, low relaxation strands conforming to M203.

Use steel couplers capable of developing 95 percent of the minimum specified ultimate tensile strength of the tendon.

Use a sheath as part of the corrosion protection system for the unbonded length portion of the tendon. Fabricate the sheath from one of the following:

- A polyethylene tube pulled or pushed over the prestressing steel. The polyethylene must be Type II, III, or IV as defined by ASTM D1248 (or approved equal). The tubing must have a minimum wall thickness of 60 mils plus/minus 10 mils.
- A hot-melt extruded polypropylene tube. The polypropylene must be cell classification PP 210 B5554211 as defined by ASTM D4101 (or approved equal). The tubing must have a minimum wall thickness of 60 mils plus/minus 10 mils.
- A hot-melt extruded polyethylene tube. The polyethylene must be high density Type III as defined by ASTM D3350 and ASTM D1248 (or approved equal). The tubing must have a minimum wall thickness of 60 mils plus/minus 10 mils.
- Steel tubing conforming to ASTM A500, minimum wall thickness of 0.20 inches.
- Steel pipe conforming to ASTM A53, Schedule 40 minimum.
- Plastic pipe conforming to ASTM A1185, Schedule 40 minimum.
- A corrugated tube conforming to the requirement of the tendon bond length encapsulation.

Spacers must permit grout to freely flow up the drill hole. Fabricate spacers from plastic, steel, or material that is non-detrimental to the prestressing steel. Do not use wood. A combination centralizer-spacer may be used.

Fabricate the trumpet used to provide a transition from the anchorage to the unbonded length corrosion protection from a steel pipe or tube conforming to the requirements of ASTM A53 for pipe or ASTM A500 for tubing. The trumpet must have a minimum wall thickness of 0.125 inches for diameters up to four inches and 0.20 inches for larger diameters.

Use potable water for mixing grout.

Fabricate tendons conforming to the following specifications.

- The tendons may be either shop or field fabricated from prestressing steel and materials conforming to the requirements of the Materials subsection of these special provisions. Fabricate the tendon as shown on the approved working drawings.
- The cement grout cover must provide corrosion protection of the tendon.
- Position spacers so their center-to-center spacing does not exceed ten feet. In addition, locate the upper spacer a maximum of five feet from the top of the tendon bond length, and locate the lower spacer a maximum of five feet from the bottom of the tendon bond length.
- The minimum unbonded length of the bar tendon must be 15 feet or as indicated on the plans or the approved working drawings, whichever is greater. The unbonded length must extend a minimum of 5 feet beyond the critical failure surface measured from the lowest subgrade level from the back of the retaining wall in the soil mass being retained by the wall. If the entire drill hole (tendon bond length and unbonded length) is grouted in one operation, then for the corrosion protection of the unbonded length provide either a sheath completely filled with corrosion inhibiting grease or grout, or a heat shrinkable tube internally coated with an elastic adhesive. If grease is used under the sheath, make provisions to prevent the grease from escaping at the ends of the sheath. The grease must completely coat the tendon, fill the void between the tendon and the sheath, and fill the interstices between the wires of the seven-wire strands. Provide a transition between the bond length and the unbonded length corrosion protection as illustrated in the working drawings. If the sheath is grout filled, a separate bond breaker must be provided. The bond breaker must prevent the tendon from bonding to the grout surrounding the unbonded length. If a grease-filled sheath corrosion protection is provided and the drill hole above the bond length is grouted after the ground anchor has been locked off, then grout the tendon inside a second sheath.
- The total anchor length must not be less than the minimum length indicated on the plans or the approved working drawings.
- Size the bearing plates so that:
    1. The bending stresses in the plate do not exceed the yield strength of the steel when a load equal to 95 percent of the minimum specified ultimate tensile strength of the tendon is applied;
    2. The average bearing stress on the concrete does not exceed that recommended in section 3.1.7 of the PTI, “Guide Specification for Post-Tensioning Materials”.
- Weld the trumpet to the bearing plate. The trumpet must have an inside diameter equal to or larger than the hole in the bearing plate. The trumpet must be long enough to accommodate movements of the structure during testing and stressing. For strand tendons with encapsulation over the unbonded length, the trumpet must be long enough to enable the tendon to make a transition from the diameter of the tendon in the unbonded length to the diameter of the tendon at the anchorhead without damaging the encapsulation. Trumpets filled with corrosion-inhibiting grease must have a permanent Buna-N synthetic rubber or approved equal seal provided between the trumpet and the unbonded length corrosion protection. Trumpets filled with grout must have a temporary seal provided between the trumpet and the unbonded length corrosion protection or the trumpet must overlap the unbonded length corrosion protection by a minimum of one foot and fit tightly over the unbonded length corrosion protection.

Damage to the prestressing steel because of abrasions, cuts, nicks, welds and weld splatter will be cause for rejection by the engineer. Protect the prestressing steel if welding is to be performed in the vicinity. Grounding of welding leads to the prestressing steel is forbidden. Protect the prestressing steel from dirt, rust or deleterious substances. If heavy corrosion or pitting is noted, the engineer will reject the affected tendons.

Use care in handling and storing the tendons at the site. Before inserting a tendon in the drill hole, the contractor and the engineer will examine the tendon for damage to the encapsulation and the sheathing. If, in the opinion of the engineer, the smooth sheathing has been damaged, repair it with ultra high molecular weight polyethylene tape.

C Construction

C.1 Anchor Installation

C.1.1 General

Unless otherwise directed, select the drilling method, pressure grouting, post grouting, the grouting procedure, and the grouting pressure used for the installation of the ground anchor.

C.1.2 Drilling Method

Unless otherwise directed, the contractor may choose to utilize rotary drilling with casing, duplex or dual rotary drilling method, rotary drilling with stabilizing fluid, percussion drilling with casing, hollow stem auger drilling or driven casing provided that the anchor hole is maintained in a stable condition at all times, preventing collapse or excessive over-excavation of soils. Pervasive hole caving or ground loss problems must be repaired by grouting at the contractor's expense to prevent damage to the adjacent ground mass and supported structures.

At the ground surface, locate the drill hole within twelve inches of the location shown on the plans or the approved working drawings. Locate the drill hole so the longitudinal axis of the drill hole and the longitudinal axis of the tendon are parallel. In particular, do not drill the ground anchor hole in a location that requires the tendon to be bent in order to enable the bearing plate to be connected to the supported structure. At the point of entry, the horizontal angle made by the ground anchor and the structure must be within plus/minus 3 degrees of a line drawn perpendicular to the plane of the structure unless otherwise shown on the plans or approved working drawings. Do not extend the ground anchors beyond the right-of-way or easement limits shown on the plans.

The tendon must be inserted into the drill hole to the desired depth without difficulty. When the tendon cannot be completely inserted, remove the tendon from the drill hole and clean or redrill the hole to permit insertion. Do not drive or otherwise force partially inserted tendons into the hole.

C.1.3 Grouting Method

Use a neat cement grout. The cement must not contain lumps or other indications of hydration. Admixtures, if used, must be mixed conforming to the manufacturer's recommendations.

Use grouting equipment that produces a grout free of lumps and undispersed cement. Use a positive displacement grout pump. The pump must be equipped with a pressure gauge in order to monitor grout pressures. The pressure gauge must be capable of measuring pressures of at least 150 psi or twice the actual grout pressures used by the contractor whichever is greater. The grouting equipment must be sized to enable the grout to be pumped in one continuous operation. The mixer must be capable of continuously agitating the grout.

Inject the grout from the lowest point of the drill hole. The grout may be pumped through grout tubes, casing, hollow-stem-augers, or drill rods. The grout may be placed before or after insertion of the tendon. Record the quantity of the grout and record the grout pressures. The grout pressures and grout takes must be controlled to prevent uncontrolled heave or fracturing.

The grout above the top of the bond length may be placed at the same time as the bond length grout but it may not be placed under pressure. The grout at the top of the drill hole must not contact the back of the structure or the bottom of the trumpet.

Upon completion of grouting and post grouting, the grout tube may remain in the hole but it shall be filled with grout. Do not load the tendon for a minimum of three days after grouting.

C.2 Installation of Trumpet and Anchorage

The corrosion protection surrounding the unbonded length of the tendon must extend up beyond the bottom seal of the trumpet or one foot into the trumpet if no trumpet seal is provided. If the protection does not extend beyond the seal or sufficiently far enough into the trumpet, extend the corrosion protection or lengthen the trumpet.

The corrosion protection surrounding the unbonded length of the tendon must not contact the bearing plate or the anchor head during testing and stressing. If the protection is too long, trim the corrosion protection to prevent contact.

Completely fill the trumpet with corrosion inhibiting grease or grout. Trumpet grease can be placed any time during construction. Place trumpet grout after the ground anchor has been tested and stressed. Demonstrate to the engineer that the procedures selected for placement of either grease or grout will produce a completely filled trumpet.

Cover all anchorages permanently exposed to the atmosphere with a corrosion inhibiting grease-filled or grout-filled cover. Demonstrate to the engineer that the procedures selected for placement of either grease or grout will produce a completely filled cover.

C.3 Anchor Testing

C.3.1 General

Test each ground anchor. Do not apply any load greater than 10 percent of the factored design load to the ground anchor prior to testing. The maximum test load must not exceed 80 percent of the minimum specified ultimate tensile strength of the tendon. The test load must be simultaneously applied to the entire tendon. Stressing of single elements of multi-element tendons is not permitted.

Supply the following testing equipment:

- A dial gauge or veneer scale capable of measuring to 0.01 inches used to measure the ground anchor movement. The movement-measuring device must have a minimum travel equal to the theoretical elastic elongation of the total anchor length at the maximum test load and it must have adequate travel so the ground anchor movement may be measured without resetting the device.
- A hydraulic jack and pump used to apply the test load. The jack and a calibrated pressure gauge must be used to measure the applied load. The jack and pressure gauge must be calibrated as a unit by an independent firm. The calibration must have been performed within forty-five business days of the date submitted. Testing cannot commence until the engineer has approved the calibration. The pressure gauge must be graduated in 100-psi increments or less. The ram travel of the jack must not be less than the theoretical elastic elongation of the total anchor length at the maximum test load.
- A calibrated reference pressure gauge must also be kept at the site. Calibrate the reference gauge with the test jack and pressure gauge.
- Provide an electrical resistance load cell and readout for use when performing a creep test.
- Place the stressing equipment over the ground anchor tendon in such a manner that the jack, bearing plates, load cells and stressing anchorage are axially aligned with the tendon and the tendon is centered within the equipment.

C.3.2 Performance Tests

Install and conduct the performance tests. The anchors for the performance test must be similar to the production anchors shown on the plans and must be selected as directed by the engineer. Record the encountered soil information through the entire depth of drilling holes. Submit performance test results and soil information to the engineer for approval. If the tested anchor(s) fail(s) to pass the performance tests, at least five workdays shall be allowed for the engineer to evaluate the test anchor(s) and the soil condition. Additional performance tests may be required upon request from the engineer. The additional performance test(s), as required, and time for the engineer to evaluate the test anchor(s), will be included in the work and will not be paid for separately. Do not order material for production anchors until the approval of the performance test results are given.

Conduct performance tests according to the following procedures on five percent of the ground anchors or a minimum of three ground anchors per wall, whichever is greater. The engineer will select the ground anchors to be performance tested. Test the remaining ground anchors according to the proof test procedures.

Conduct performance tests by incrementally loading and unloading the ground anchor according to the following schedule. Raise the load from one increment to another immediately after recording the ground anchor movement. Measure and record the ground anchor movement to the nearest 0.01 inches with respect to an independent fixed reference point at the alignment load and at each increment of load. Monitor the load with a pressure gauge. Place the reference pressure gauge in series with the pressure gauge during each performance test. If the load determined by the reference pressure gauge and the load determined by the pressure gauge differ by more than ten percent, recalibrate the jack, pressure gauge and reference pressure gauge at no expense to the department. At load increments other than the maximum test load, hold the load just long enough to obtain the movement reading.

Performance Test Schedule

Load
AL
0.20 FDL*
AL
0.20 FDL
0.40 FDL*
AL
0.20 FDL
0.40 FDL
0.60 FDL*
AL
0.20 FDL
0.40 FDL
0.60 FDL
0.75 FDL
AL
0.20 FDL
0.40 FDL
0.60 FDL
0.75 FDL
1.00 FDL*
AL
0.20 FDL
0.40 FDL
0.60 FDL
0.75 FDL
0.90 FDL
1.15 FDL* (Max. test load)
Reduce to lock-off load – 0.60 FDL

Where, AL = Alignment Load

FDL = Factored Design Load for Tieback

* = Graph required

Hold the maximum test load in a performance test for ten minutes. Repump the jack as necessary in order to maintain a constant load. Start the load-hold period as soon as the maximum test load is applied. Measure and record at 1, 2, 3, 4, 5, 6, and 10 minutes the ground anchor movement with respect to a fixed reference. If the ground anchor movement between one minute and ten minutes exceeds 0.04 inches, hold the maximum test load for an additional 50 minutes. If the load-hold period is extended, record the ground anchor movement at 15, 20, 25, 30, 45 and 60 minutes.

Plot the ground anchor movement versus load for each load increment marked with an asterisk (*) in the performance test schedule and plot the residual movement of the tendon at each alignment load verses the highest previously applied load.

C.3.3 Proof Tests

Perform the proof test by incrementally loading the ground anchor according to the following schedule. Raise the load from one increment to another immediately after recording the ground anchor movement. Measure and record the ground anchor movement to the nearest 0.01 inches with respect to an independent fixed reference point at the alignment load and at each increment of load. Monitor the load with a pressure gauge. At load increments other than the maximum test load, hold the load just long enough to obtain the movement reading.

Hold the maximum test load in a proof test for ten minutes. Repump the jack as necessary in order to maintain a constant load. Start the load-hold period as soon as the maximum test load is applied. Measure and record the ground anchor movement with respect to a fixed reference at 1, 2, 3, 4, 5, 6, and 10 minutes. If the ground anchor movement between 1 minute and 10 minutes exceeds 0.04 inches, hold the maximum test load for an additional 50 minutes. If the load-hold period is extended, record the ground anchor movements at 15, 20, 25, 30, 45 and 60 minutes.

Proof Test Schedule

Load
AL
0.20 FDL
0.40 FDL
0.60 FDL
0.75 FDL
1.00 FDL
1.15 FDL (Max. test load)
Reduce to lock-off load – 0.60 FDL

Where, AL = Alignment Load

FDL = Factored Design Load for Tieback

Plot the ground anchor movement versus load for each load increment in the proof test.

Submit proof tests for review by the engineer within 7 days of testing.

C.3.4 Extended Creep Tests

Extended creep tests are required, at least two ground anchors per wall must be extended creep-tested or as shown on the plans, whichever is greater.

Perform the extended creep test by incrementally loading and unloading the ground anchor according to the performance test schedule given above. At the end of each loading cycle, hold the load constant for the observation period indicated in the extended creep test schedule below. The times for reading and recording the ground anchor movement during each observation period are 1, 2, 3, 4, 5, 6, 10, 15, 20, 25, 30, 45, 60, 75, 90, 100, 120, 150, 180, 210, 240, 270 and 300 minutes as appropriate. Each load-hold period starts as soon as the test load is applied. In an extended creep test, the pressure gauge and reference pressure gauge will be used to measure the applied load and the load cell will be used to monitor small changes in load during a constant load-hold period. Repump the jack as necessary in order to maintain a constant load.

Plot the ground anchor movement and the residual movement measured in an extended creep test as described for the performance test above. Also plot the extended creep movement for each load hold as a function of the logarithm of time.

Extended Creep Test Schedule

Load	Observation Period (min.)
AL	
0.20 FDL	10
0.40 FDL	30
0.60 FDL	30
0.75 FDL	45
0.90 FDL	60
1.15 FDL	300

Where, AL = Alignment Load

FDL = Factored Design Load for Tieback

Reduce to lock-off load – 0.60 FDL

C.3.5 Ground Anchor Load Test Acceptance Criteria

A performance- or proof-tested ground anchor with a 10-minute load-hold period is acceptable if the:

- The tieback resists the maximum test load with less than 0.04-inches of movement between 1 minute and 10 minutes.
- The total elastic movement of the tendon measured at the anchor head obtained from a proof or performance test must exceed 80 percent of the theoretical elastic elongation of the stressing or unbonded length for load increments 0.25 DL and above.
- The total movement of tendon must not exceed 100 percent of the theoretical elastic elongation of the unsupported length plus 50 percent of the supported length.

A performance- or proof-tested ground anchor with a 60-minute load-hold period or a creep-tested ground anchor is acceptable if the:

- Ground anchor carries the maximum test load with a creep rate that does not exceed 0.08 inches/log cycle of time; and
- Total movement at the maximum test load exceeds 80 percent of the theoretical elastic elongation of the unbonded length.

If the total movement of the ground anchors at the maximum test load does not exceed 80 percent of the theoretical elastic elongation of the unbonded length, replace the ground anchor at no additional cost to the department.

Ground anchors that have a creep rate greater than 0.08-inches/log cycle of time can be incorporated in the finished work at a load equal to one-half its failure load. The failure load is the load carried by the ground anchor after the load has been allowed to stabilize for ten minutes.

When a ground anchor fails, modify the design and/or the construction procedures. These modifications may include, but are not limited to, installing replacement ground anchors, reducing the factored design load by increasing the number of ground anchors, modifying the installation methods, increasing the bond length or changing the ground anchor type. Any modifications of design or construction procedures including installing additional anchors shall be at the contractor’s expense and at no additional charge to the department.

Upon completion of the test, reduce the load to the lock-off load indicated on the plans and transfer the load to the anchorage device. The ground anchor may be completely unloaded prior to lock off. After transferring the load and before removing the jack, record a lift-off reading. The lift-off reading must be within ten percent of the specified lock-off load. If the load is not within ten percent of the specified lock-off load, reset the anchorage and record another lift-off reading. Repeat this process until the desired lock-off load is obtained.

D Measurement

The department will measure Tieback Anchors by each individual tieback anchor, acceptably completed, that are capable of carrying the load specified on the plans, which includes a proof test of each anchor.

The department will measure Tieback Anchor Performance Tests by each individual performance test, acceptably completed.

The department will measure Tieback Anchor Extended Creep Tests by each individual extended creep test, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4050	Tieback Anchors	EACH
SPV.0060.4051	Tieback Anchor Performance Tests	EACH
SPV.0060.4052	Tieback Anchor Extended Creep Tests	EACH

Payment is full compensation for drilling; grouting; furnishing all steel, bearing plates and corrosion-protection materials required and tensioning; testing; and for designing and providing additional or remediation anchors for failed ground anchors.

(BOS SPV 04/2018)

253. MSE Wall Sleeve Type 1, Item SPV.0060.4060; MSE Wall Sleeve Type 13, Item SPV.0060.4061; MSE Wall Sleeve Temporary Signal Pole, Item SPV.0060.4062.

A Description

Furnish and install a corrugated steel pipe sleeve in the reinforced earth zone of mechanically stabilized earth (MSE) retaining walls and other locations shown in the plans. Perform work according to pertinent portions of standard spec 520 and 521, the plans, and as herein provided.

B Materials

The MSE wall sleeve pipes shall meet the requirements of standard spec 521.2 for corrugated steel pipe. Provide a 21-inch pipe sleeve for the MSE Wall Sleeve Type 1. Provide a 42-inch pipe sleeve for the MSE Wall Sleeve Type 13. For the MSE Wall Sleeve Temporary Signal Pole, provide a pipe sleeve size as required by contractor to accommodate temporary traffic signal poles with adequate size to grout or backfill the annular space around the pole.

C Construction

Set the sleeve within 1 inch of the required position indicated on the plans prior to placing the reinforced earth. Brace the sleeve to maintain position within 2 inches of required position as backfilling proceeds. Place soil reinforcing mats around the sleeve.

For future reference, permanently indicate the depth measured from the top of the sleeve down to the level of the nearest MSE wall soil reinforcement on the inside surface of the sleeve, near the top of the sleeve.

Correct any damage to the sleeve that would hinder the installation of the concrete base prior to placing any additional reinforced earth.

D Measurement

The department will measure MSE Wall Sleeve (type) by each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4060	MSE Wall Sleeve Type 1	EACH
SPV.0060.4061	MSE Wall Sleeve Type 13	EACH
SPV.0060.4062	MSE Wall Sleeve Temporary Signal Pole	EACH

Payment is full compensation for furnishing and installing the concrete base sleeve MSE wall sleeve.

254. Bar Couplers No. 14, Item SPV.0060.4070; Bar Couplers No. 18, Item SPV.0060.4071.

A Description

This special provision describes furnishing and installing No. 14 and No. 18 bar couplers for mechanically splicing high strength bar steel reinforcement according to standard spec 505, as shown on the plans, and as hereinafter provided.

B (Vacant)

C Construction

Conform to standard spec 505.3.3.4.

D Measurement

The department will measure Bar Couplers No.14 and Bar Couplers No.18 as each individual coupler, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4070	Bar Couplers No. 14	EACH
SPV.0060.4071	Bar Couplers No. 18	EACH

Payment will be made according to standard spec 505.5(4).

255. Adjusting Sanitary Manhole, Item SPV.0060.5000.

A Description

This work includes adjusting sanitary manholes to an elevation as determined by the engineer as well as installing frame and lid, internal frame/chimney seal, according to the details as shown in the plans and the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and amendments (SSSW) and as hereinafter provided in these special provisions.

Add or remove masonry adjusting rings as needed. This item applies to structures to be lowered less than 6 inches or raised less than 12 inches.

B Materials

B.1 Adjusting Rings

Adjustment rings shall be concrete with steel reinforcement in conformance with ASTM C-478. Precast concrete rings shall have an inside diameter to match the manhole opening, be not less than 2 inches nor more than 6 inches high and have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring. Do not use any cracked or broken rings. The top of precast manhole cones shall be set a maximum of 18 inches lower than established grade in unimproved areas, with the top of the manhole cover being ringed up flush with the existing ground. The minimum number of adjusting rings shall be one 2-inch ring. The maximum height of adjusting rings shall be 8 inches in paved areas. All joints between the adjusting rings shall be filled with grout or mortar, including between the cone and the adjusting ring and the adjusting ring and the frame. Rings shall be grooved to receive a step.

B.2 Manhole Seal

Furnish new Cretex Specialty Products, NPC Flexrib, or approved equal internal or external frame/chimney seal, as shown in the plans. The seal shall meet the material requirements of section 8.42.3 and the performance requirements of section 8.42.4 of the SSSW.

B.3 Backfill Slurry

Backfill slurry shall meet the material and construction requirements of section 8.43.8 of the SSSW.

C Construction

C.1 General

The location of existing sanitary manholes to be adjusted is indicated on the plans. Adjust these items as shown in the plans. Adjust manholes as necessary so that the frames and lid when placed will be at the established required grade. Install seals according to the manufacturer’s recommended installation procedures. Furnish and use backfill slurry in the manhole excavation area to existing surface or to appropriate depth for pavement restoration.

Prior to starting work, submit protocol for preventing any foreign material from falling into the flow line of the sanitary sewer system. Verify no debris falls into the flow line prior to, during and completing construction of manhole. Put in place measures to clean out any foreign materials that fall into the bottom of the manholes. Any private or public sewer backups due to failure to remove foreign material from sanitary sewer system will become the sole financial and physical responsibility of the contractor.

C.2 Surface Preparation

Remove manhole cover and power wire brush the lower 3 inches of the manhole frame to remove any loose rust or scale and repair any imperfections by either grinding smooth or filling with mortar. A smooth, clean sealing surface is required. Realign the casting if it is offset more than approximately 2 inches from the chimney. Remove all loose and protruding mortar and brick from the upper 7-Inch chimney and clean

surface by power wire brushing. Provide a 4-Inch wide sealing surface starting 2 inches down from the bottom of the frame.

All sealing surfaces must be circular, reasonably smooth, clean and free of any loose material or excessive voids. If such a surface does not exist for the bottom of the sleeve to seal against, use one-component, quick-set, high strength, non-shrink, polymer modified patching mortar which has been formulated for vertical or overhead use. If the bottom of the sleeve is to seal against the top of an eccentric (straight side) cone and an inadequately high vertical surface does not exist, contact the manufacturer to obtain details to build the required vertical surface.

Use caulk to fill minor irregularities in the bottom sealing surface. The caulk shall be a butyl rubber caulk conforming to AASHTO M-198, Type B. Apply a single bead of the caulk to the center portion of the lower sealing surface of the sleeve.

Any flaws in the manhole frame, such as minor cracks, pits or protrusions, shall be repaired by either filling with mortar or grinding smooth.

C.3 Manhole Seal

Seals shall cover from the frame across all rings and onto the cone.

C.4 Manhole Frames and Lids – City of Glendale

Salvage and reinstall existing frames and lids.

C.5 Manhole Frames and Lids – Village of River Hills

Replace frames and lids with new material and return removed frames and lids to the River Hills Department of Public Works, 7650 N. Pheasant Lane, River Hills, WI 53217.

See bid item: Furnish Sanitary Manhole Cover for specific type of frame and lid.

C.6 Manhole Frames and Lids – Village of Bayside

Replace frames and lids with new material and return removed frames and lids to the Bayside Department of Public Works, 9075 N. Regent Road, Bayside, WI 53217.

See bid item: Furnish Sanitary Manhole Cover for specific type of frame and lid.

D Measurement

The department will measure Adjusting Sanitary Manhole as a unit per each adjustment, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5000	Adjusting Sanitary Manhole	EACH

Payment is full compensation for providing and installing all required materials including adjusting rings, internal frame/chimney seals, and masonry and fittings; for salvaging and reinstalling existing or new covers, including frames and lids; for excavating, backfilling, and compacting; for furnishing and placing backfill slurry; for disposing of surplus materials; and for cleaning out and restoring the structure.

256. Reconstruct Sanitary Manhole, Item SPV.0060.5001.

A Description

This work includes reconstructing a sanitary manhole to an elevation as determined by the engineer, according to the details as shown in the plans and the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and amendments (SSSW) and as hereinafter provided in these special provisions.

B Materials

B.1 Manhole

Manhole barrel and cone sections shall be constructed of precast reinforced concrete sections. Precast manholes and tops shall conform to ASTM Specifications, C478, latest revision.

B.2 Adjusting Rings

Adjustment rings shall be concrete with steel reinforcement in conformance with ASTM C-478. Precast concrete rings shall have an inside diameter to match the manhole opening, be not less than 2 inches nor more than 6 inches high and have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring. Do not use any cracked or broken rings. The top of precast manhole cones shall be set a maximum of 18 inches lower than established grade in unimproved areas, with the top of the manhole cover being ringed up flush with the existing ground. The minimum number of adjusting rings shall be one 2-inch ring. The maximum height of adjusting rings shall be 8 inches in paved areas. All joints between the adjusting rings shall be filled with grout or mortar, including between the cone and the adjusting ring and the adjusting ring and the frame. Rings shall be grooved to receive a step.

B.3 Manhole Seal

Furnish new internal frame/chimney seal as manufactured by Cretex Specialty Products, NPC Flexrib, or approved equal. The seal shall meet the material requirements of section 8.42.3 and the performance requirements of section 8.42.4 of the SSSW.

B.4 Joints

Joints for precast manholes shall meet the requirements of ASTM C-443, latest revision, except that sealant shall be butyl rubber gasket or butyl rubber rope. Flexible butyl rubber gaskets or rope shall comply with the physical requirements for Type “B” gaskets in AASHTO Designation M-198, or Federal Specification SSS-00210-A, sealing compound, preformed plastic for expansion joints and pipe joints.

B.5 Steps

All manholes shall be provided with steps equally spaced vertically on center installed by the manufacturer as shown on the standard detail sheet. Steps shall be embedded into the riser or conical top section of the wall a minimum of 3 inches. Manhole steps shall meet the requirements of section 8.40.1 of the SSSW.

B.6 Elastomeric Waterproofing Sealer

Elastomeric waterproofing membrane shall be a single component, bitumen-modified, moisture-curing polyurethane similar to TREMproof 60 as manufactured by Tremco, 10701 Shaker Blvd., Cleveland, Ohio 44104; Duramem V500 as manufactured by Pecora Corporation, 2601 Oakland Avenue, Garland, Texas 75040; Thiodeck C.F. as manufactured by Toch/Carboline Company, 350 Hanley Industrial Court, St. Louis, Missouri 63144; or equal.

B.7 Plastic Sheet

Plastic sheet shall be clear plastic, minimum 4 mils. thick, of length and width to cover elastomeric waterproofing sealer.

B.8 Backfill Slurry

Backfill slurry shall meet the material and construction requirements of section 8.43.8 of the SSSW.

C Construction

C.1 General

Reconstruct manholes to conform to the detail on the standard detail sheet and in the locations shown in the plans.

The location of existing sanitary manholes to be reconstructed is indicated on the plans. Reconstruct these items as shown in the plans. Reconstruct manholes as necessary so that the frames and lid when placed will be at the established required grade. Install seals according to the manufacturer’s recommended installation procedures. Furnish and use backfill slurry in the manhole excavation area to existing surface or to appropriate depth for pavement restoration.

Prior to starting work, submit protocol for preventing any foreign material from falling into the flow line of the sanitary sewer system. Verify no debris falls into the flow line prior to, during and completing construction of manhole. Put in place measures to clean out any foreign materials that fall into the bottom of the manholes. Any private or public sewer backups due to failure to remove foreign material from sanitary sewer system will become the sole financial and physical responsibility of the contractor.

C.2 Backfill

Backfill with granular backfill material. Place in suitable lifts not exceeding 8 inches loose depth and compact each lift to a minimum of 90 percent of maximum density as determined by AASHTO T 180. Compact with mechanical vibrating or impact tampers.

Remove all form materials and trash from the excavation before placing any backfill. Backfill around manholes only after the concrete has attained 2/3 of the specified compressive strength. Obtain the engineer's approval of concrete work and attained strength prior to backfilling. Backfill shall be brought up uniformly around manholes and structures to prevent unbalanced lateral loading.

Do not operate earth-moving equipment within 5 feet of walls of manholes for the purpose of depositing or compacting backfill materials. Compact backfill adjacent to concrete walls with hand-operated tampers or other equipment that will not damage the manhole.

C.3 Elastomeric Waterproofing Sealer

Elastomeric waterproofing sealer shall be applied to all gravity sewer manholes. Thoroughly sandblast the section of the manhole frame over which the sealer is to be applied, the manhole header, extension and cone and the top 12 inches of the manhole riser. All surfaces shall be free of dust, oil, rust, loose materials and other contaminants. Take necessary precautions to prevent rebound from the sandblasting operation to enter the sewer system. If the mortar between grade rings or brick courses is removed to a depth greater than 1/4 inch by the sandblasting, the joints shall be refilled with mortar as specified herein. All new masonry work shall be cured a minimum of 24 hours prior to applying the waterproofing sealer.

Apply the 4-inch wide bond breaker tape completely around the manhole circumference and centered over the mortar joint between the manhole frame and the manhole extension. Immediately before applying the sealer, wipe all surfaces with a cleaner and immediately prime. The cleaner and primer shall be furnished by the sealer manufacturer. Apply the sealer with a trowel, roller or by spraying to achieve a thickness of not less than 100 wet mils. Do not apply the sealer when the ambient temperature is below 40 degrees F. The sealer shall extend from 9 inches below the bottom of the manhole cone and be carried over the top and onto the flange of the frame a minimum of 5 inches.

Allow the sealer to cure a minimum of 24 hours before backfilling when the ambient temperature is above 70 degrees F, and 48 hours when the ambient temperature is below 70 degrees F. Immediately before backfilling, loosely wrap two layers of 4 mil plastic sheet over the sealed area to prevent direct contact between the sealer and the backfill material.

C.4 Manhole Seal

Seals shall cover from the frame across all rings and onto the cone.

C.5 Manhole Frames and Lids – City of Glendale

Salvage and reinstall existing frames and lids.

C.6 Manhole Frames and Lids – Village of River Hills

Replace frames and lids with new material and return removed frames and lids to the River Hills Department of Public Works, 7650 N. Pheasant Lane, River Hills, WI 53217.

See bid item: Furnish Sanitary Manhole Cover for specific type of frame and lid.

C.7 Manhole Frames and Lids – Village of Bayside

Replace frames and lids with new material and return removed frames and lids to the Bayside Department of Public Works, 9075 N. Regent Road, Bayside, WI 53217.

See bid item: Furnish Sanitary Manhole Cover for specific type of frame and lid.

D Measurement

The department will measure Reconstruct Sanitary Manhole as a unit for each individual manhole, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5001	Reconstruct Sanitary Manhole	EACH

Payment is full compensation for providing and installing all required materials including barrel sections, adjusting rings, internal frame/chimney seals, joints, steps, elastomeric waterproofing sealer, plastic sheet, and masonry and fittings; for salvaging and reinstalling existing or new covers, including frames and lids; for excavating, backfilling, and compacting; for furnishing and placing backfill slurry; for disposing of surplus materials; and for cleaning out and restoring the structure.

257. Furnish Sanitary Manhole Cover, Item SPV.0060.5002.

A Description

This work includes furnishing a standard sanitary sewer manhole frame and lid according to the details as shown in the plans and the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and amendments (SSSW) and as hereinafter provided in these special provisions.

B Materials

B.1 Frame and Lid – City of Glendale

New sanitary manhole frame and lid where specified in the plans shall be supplied by the contractor. Sanitary manhole frame shall be Neenah R-1661-458 with bolted lid. Sanitary sewer manhole lid shall be solid gasketing self-sealing lid (non-rocking) with Type ‘T’ gasket and Type B solid lid with two concealed pick holes. Frames for sanitary sewer manholes shall be compatible with the lids.

B.2 Frame and Lid – Village of River Hills

New sanitary manhole frame and lid where specified in the plans shall be supplied by the contractor. Sanitary manhole frame shall be Neenah R-1661-B. Sanitary sewer manhole lid shall be solid gasketing self-sealing lid (non-rocking) with Type ‘T’ gasket and Type B solid lid with two concealed pick holes. Frames for sanitary sewer manholes shall be compatible with the lids.

B.3 Frame and Lid – Village of Bayside

New sanitary manhole frame and lid where specified in the plans shall be supplied by the contractor. Sanitary manhole frame shall be Neenah R-1661-B. Sanitary sewer manhole lid shall be solid gasketing self-sealing lid (non-rocking) with Type ‘T’ gasket and Type B solid lid with two concealed pick holes. Frames for sanitary sewer manholes shall be compatible with the lids.

C Construction

The location of sanitary manhole covers to be furnished is indicated on the plans. Install and adjust these items as shown in the plans and in accord with the items Adjusting Sanitary Manhole and Reconstruct Sanitary Manhole.

D Measurement

The department will measure Furnish Sanitary Manhole Cover as a unit for each individual manhole, acceptably furnished.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5002	Furnish Sanitary Manhole Cover	EACH

Payment is full compensation for furnishing all required materials including, frames and lids and other required materials.

258. Sanitary Manhole Type A 48-Inch, Item SPV.0060.5003.

A Description

This work includes furnishing and installing a standard 48-Inch diameter sanitary manhole (Type A) made of precast concrete with necessary reinforcement, frames and self-sealing covers, internal frame/chimney seal, materials, proper backfilling, surface replacement and work necessary to the completion of precast manholes including the connection with all incoming and outgoing sewers, all stubs, steps, removing existing manhole and base, and all necessary bypass pumping, according to the details as shown in the

plans and the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and amendments (SSSW) and as hereinafter provided in these special provisions.

B Materials

B.1 General

All materials and work required to install the manhole will conform to the Standard Specifications for Sewer and Water.

B.2 Manhole

Manhole barrels shall be constructed of pre-cast reinforced concrete sections. Precast manholes and cones shall conform to ASTM Specifications, C478, latest revision

B.3 Frame and Grate

New frames and covers are required on all new sanitary manholes and shall be supplied by the contractor. Sanitary sewer manhole covers shall be self-sealing with an o-ring gasket. They shall be Neenah R-1661-B or equal. They shall have one 1-Inch vent hole which is sealed with a removable flexible plug and two concealed pick holes. Frames for sanitary sewer manholes shall be compatible with the covers.

B.4 Manhole Seal

Furnish and install new Cretex, NPC Flexrib, or approved equal internal frame/chimney seal, as shown in the construction details on the plans. Meet the material requirements of section 8.42.3 and the performance requirements of section 8.42.4 of the Standard Specifications for Sewer and Water.

B.5 Joints

Joints for precast manholes shall meet the requirements of ASTM C-443, latest revision, except that sealant shall be butyl rubber gasket or butyl rubber rope. Flexible butyl rubber gaskets or rope shall comply with the physical requirements for Type “B” gaskets in AASHTO Designation M-198, or Federal Specification SSS-00210-A, sealing compound, preformed plastic for expansion joints and pipe joints.

B.6 Steps

All manholes shall be provided with steps equally spaced vertically at a maximum of 16 inches on center installed by the manufacturer. Steps shall be embedded into the riser or conical top section of the wall a minimum of 3 inches. Manhole steps shall be made of gray cast iron conforming to the requirements of ASTM Designation A-48 Class No. 30B and shall have a minimum cross sectional dimension of one inch in any direction. Each section of the manhole shall be aligned so the steps create a continuous ladder.

B.7 Backfill Slurry

Backfill slurry shall meet the material and construction requirements of section 8.43.8 of the Standard Specifications for Sewer and Water.

C Construction

Construct manholes as shown in the plans. Fill the excavation with backfill slurry, to existing surface or to appropriate depth for pavement restoration.

C.1 Inverts

Construct benches up to the crown or top of the outgoing pipe and slope as specified for a sanitary manhole according to File Numbers 11, 12, and 13 of the Standard Specifications for Sewer and Water.

C.2 Surface Preparation

Remove manhole cover and power wire brush the lower 3 inches of the manhole frame to remove any loose rust or scale and repair any imperfections by either grinding smooth or filling with mortar. A smooth, clean sealing surface is required. Realign the casting if it is offset more than approximately 2 inches from the chimney. Remove all loose and protruding mortar and brick from the upper 7-Inch chimney and clean surface by power wire brushing. Provide a 4-Inch wide sealing surface starting 2 inches down from the bottom of the frame.

All sealing surfaces must be circular, reasonably smooth, clean and free of any loose material or excessive voids. If such a surface does not exist for the bottom of the sleeve to seal against, use one-component, quick-set, high strength, non-shrink, polymer modified patching mortar which has been formulated for vertical or overhead use. If the bottom of the sleeve is to seal against the top of an

eccentric (straight side) cone and an inadequately high vertical surface does not exist, contact the manufacturer to obtain details to build the required vertical surface.

Use caulk to fill minor irregularities in the bottom sealing surface. The caulk shall be a butyl rubber caulk conforming to AASHTO M-198, Type B. Apply a single bead of the caulk to the center portion of the lower sealing surface of the sleeve.

Any flaws in the manhole frame, such as minor cracks, pits or protrusions, shall be repaired by either filling with mortar or grinding smooth.

D Measurement

The department will measure Sanitary Manhole Type A 48-Inch as a unit for each individual manhole, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5003	Sanitary Manhole Type A 48-Inch	EACH

Payment is full compensation for furnishing and installing all materials including pre-cast manhole base, riser, bench, cone section, frames, grates or lids, and chimney adjustment rings; for installing gaskets, joint seals, steps, bedding material, backfill material, for furnishing and placing backfill slurry, for furnishing all excavation, dewatering, sheathing and shoring, forming foundation, and masonry work; for making sanitary sewer connections; for making lateral connections: for backfilling including mechanical compaction and compaction testing; for removing sheeting and shoring; for disposal of all surplus or waste material; and for clean-up. The removal of existing sanitary sewer pipe and manholes from within the trench of replacement of sanitary sewer manholes will not be paid separately but shall be considered incidental to the item.

259. Sanitary Manhole Type D 48-Inch, Item SPV.0060.5004.

A Description

This work includes furnishing and installing a standard 48-Inch diameter sanitary outside drop manhole (Type D) made of precast concrete with necessary reinforcement, frames and self-sealing covers, internal frame/chimney seal, outside drop and encasement, materials, proper backfilling, surface replacement and work necessary to the completion of precast manholes including the connection with all incoming and outgoing sewers, all stubs, steps, removing existing manhole and base, and all necessary bypass pumping, according to the details as shown in the plans and the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and amendments (SSSW) and as hereinafter provided in these special provisions.

B Materials

B.1 General

All materials and work required to install the manhole will conform to the Standard Specifications for Sewer and Water.

B.2 Manhole

Manhole barrels shall be constructed of pre-cast reinforced concrete sections. Precast manholes and cones shall conform to ASTM Specifications, C478, latest revision.

B.3 Frame and Grate

New frames and covers are required on all new sanitary manholes and shall be supplied by the contractor. Sanitary sewer manhole covers shall be self-sealing with an o-ring gasket. They shall be Neenah R-1661-B or equal. They shall have one 1-Inch vent hole which is sealed with a removable flexible plug and two concealed pick holes. Frames for sanitary sewer manholes shall be compatible with the covers.

B.4 Manhole Seal

Furnish and install new Cretex, NPC Flexrib, or approved equal internal frame/chimney seal, as shown in the construction details on the plans. Meet the material requirements of section 8.42.3 and the performance requirements of section 8.42.4 of the Standard Specifications for Sewer and Water.

B.5 Joints

Joints for precast manholes shall meet the requirements of ASTM C-443, latest revision, except that sealant shall be butyl rubber gasket or butyl rubber rope. Flexible butyl rubber gaskets or rope shall comply with the physical requirements for Type “B” gaskets in AASHTO Designation M-198, or Federal Specification SSS-00210-A, sealing compound, preformed plastic for expansion joints and pipe joints.

B.6 Steps

All manholes shall be provided with steps equally spaced vertically at a maximum of 16 inches on center installed by the manufacturer. Steps shall be embedded into the riser or conical top section of the wall a minimum of 3 inches. Manhole steps shall be made of gray cast iron conforming to the requirements of ASTM Designation A-48 Class No. 30B and shall have a minimum cross-sectional dimension of 1 inch in any direction. Each section of the manhole shall be aligned so the steps create a continuous ladder.

B.7 Outside Drop

All manholes shall meet the material and construction requirements of section 3.5.8.d and Detail File No. 19 of the Standard Specifications for Sewer and Water.

B.8 Backfill Slurry

Backfill slurry shall meet the material and construction requirements of section 8.43.8 of the Standard Specifications for Sewer and Water.

C Construction

Construct manholes as shown in the plans. Place bedding material the full depth of the excavation under the pipe prior to laying the pipe when a sewer main or lateral enters a manhole any distance above the manhole invert. Any sewer main or lateral entering a manhole greater than 2 feet above the spring line of the outgoing sewer, the incoming sewer shall be connected to the manhole by means of an outside drop manhole (Type D). The drop pipe shall be the same diameter as the incoming sewer. Fill the excavation with backfill slurry, to existing surface or to appropriate depth for pavement restoration.

C.1 Inverts

Construct benches up to the crown or top of the outgoing pipe and slope as specified for a sanitary manhole according to File Numbers 11, 12, and 13 of the Standard Specifications for Sewer and Water.

C.2 Surface Preparation

Remove manhole cover and power wire brush the lower 3 inches of the manhole frame to remove any loose rust or scale and repair any imperfections by either grinding smooth or filling with mortar. A smooth, clean sealing surface is required. Realign the casting if it is offset more than approximately 2 inches from the chimney. Remove all loose and protruding mortar and brick from the upper 7-Inch chimney and clean surface by power wire brushing. Provide a 4-Inch wide sealing surface starting 2 inches down from the bottom of the frame.

All sealing surfaces must be circular, reasonably smooth, clean and free of any loose material or excessive voids. If such a surface does not exist for the bottom of the sleeve to seal against, use one-component, quick-set, high strength, non-shrink, polymer modified patching mortar which has been formulated for vertical or overhead use. If the bottom of the sleeve is to seal against the top of an eccentric (straight side) cone and an inadequately high vertical surface does not exist, contact the manufacturer to obtain details to build the required vertical surface.

Use caulk to fill minor irregularities in the bottom sealing surface. The caulk shall be a butyl rubber caulk conforming to AASHTO M-198, Type B. Apply a single bead of the caulk to the center portion of the lower sealing surface of the sleeve.

Any flaws in the manhole frame, such as minor cracks, pits or protrusions, shall be repaired by either filling with mortar or grinding smooth.

D Measurement

The department will measure Sanitary Manhole Type D 48-Inch as a unit for each individual manhole, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5004	Sanitary Manhole Type D 48-Inch	EACH

Payment is full compensation for furnishing and installing all materials including pre-cast manhole base, riser, bench, cone section, exterior drop pipe, frames, grates or lids, and chimney adjustment rings; for installing gaskets, joint seals, steps, bedding material, backfill material; for furnishing all excavation, dewatering, sheathing and shoring, forming foundation, and masonry work; for making sanitary sewer connections; for making lateral connections: for backfilling including mechanical compaction and compaction testing; for furnishing and placing backfill slurry; for removing sheeting and shoring; for disposal of all surplus or waste material; and for clean-up. The removal of existing sanitary sewer pipe and manholes from within the trench of replacement of sanitary sewer manholes will not be paid separately but shall be considered incidental to the item.

260. Abandoning Sanitary Manhole, Item SPV.0060.5005.

A Description

This work includes abandoning existing sanitary manholes in place, according to the details as shown in the plans and the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and amendments (SSSW) and as hereinafter provided in these special provisions.

B Materials

B.1 General

Furnish backfill slurry according to the pertinent requirements of standard spec 209 except as hereinafter modified. Use aggregates that conform to standard spec 501 for Grade A Concrete. Weigh aggregates at a batch plant suitable for batching concrete masonry. Mix and deliver to the project site using a truck mixer. Add enough water to enable the mixture to flow readily.

B.2 Backfill Slurry

Backfill slurry shall meet the material and construction requirements of section 8.43.8 of the Standard Specifications for Sewer and Water.

C Construction

C.1 General

Clean manhole thoroughly. Plug the existing pipe with an 8-inch brick or concrete wall. Remove the walls of the structure to a depth of 3 feet below grade or to the base if directed by the engineer. Fill the excavation with backfill slurry, to existing surface or to appropriate depth for pavement restoration. Maintain satisfactory bypass service during these operations.

Salvaged castings become the property of the contractor.

Provide by-pass pumping of wastewater around construction zone during working hours.

During non-work hours, provide temporary connection of replacement sanitary sewer to existing sanitary sewer to provide uninterrupted sanitary sewer service.

D Measurement

The department will measure Abandoning Sanitary Manhole as a unit for each individual manhole, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5005	Abandoning Sanitary Manhole	EACH

Payment is full compensation for furnishing and installing all materials; for providing positive drainage of the area to be backfilled; for furnishing and placing backfill slurry; for salvaging frames and covers and for disposing of materials.

261. Adjusting Water Valve Boxes, Item SPV.0060.5010.

A Description

This special provision describes the adjustment of existing water valve boxes to match the proposed finish grade as shown in the plans and as hereinafter provided.

B (Vacant)

C Construction

C.1 Water Valve Boxes

Adjust water valve boxes vertically as required by contractor operations. Set the finish service of valve box in a plumb, vertical position flush with the pavement or terrace. Protect the top section of the box. Provide a new top section if broken.

Ensure access to valve always remains available for Utility use.

Correct the condition of the valve if Glendale Water Utility determines the valve is inoperable even after pavement is installed at the contractor's expense. Make corrections within five days of notification by the city.

D Measurement

The department will measure Adjusting Water Valve Boxes as each individual unit, acceptably completed, regardless of the number of adjustments made to the valve box.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5010	Adjusting Water Valve Boxes	EACH

Payment is full compensation for providing all required materials; for removing, reinstalling and adjusting the valves. The contractor shall replace valves rendered unusable by the contractor's operations as determined by field engineer or Glendale Water Utility at no expense to the department.

262. Reconstruct Water Manhole, Item SPV.0060.5011.

A Description

This work includes reconstructing a water manhole to an elevation as determined by the engineer, according to the details as shown in the plans and the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and amendments (SSSW) and as hereinafter provided in these special provisions.

B Materials

B.1 Manhole

Manhole barrel and cone sections shall be constructed of precast reinforced concrete sections. Precast manholes and tops shall conform to ASTM Specifications, C478, latest revision.

B.2 Adjusting Rings

Adjustment rings shall be concrete with steel reinforcement in conformance with ASTM C-478. Precast concrete rings shall have an inside diameter to match the manhole opening, be not less than 2 inches nor more than 6 inches high and have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring. Do not use any cracked or broken rings. The top of manhole cones shall be set a maximum of 18 inches lower than established grade in unimproved areas, with the top of the manhole cover being ringed up flush with the existing ground. The minimum number of adjusting rings shall be one 2-inch ring. The maximum height of adjusting rings shall be 8 inches in paved areas. All joints between the adjusting rings shall be filled with grout or mortar, including between the cone and the adjusting ring and the adjusting ring and the frame. Rings shall be grooved to receive a step.

B.3 Manhole Seal

Furnish new internal frame/chimney seal as manufactured by Cretex Specialty Products, NPC Flexrib, or approved equal. The seal shall meet the material requirements of section 8.42.3 and the performance requirements of section 8.42.4 of the SSSW.

B.4 Joints

Joints for precast manholes shall meet the requirements of ASTM C-443, latest revision, except that sealant shall be butyl rubber gasket or butyl rubber rope. Flexible butyl rubber gaskets or rope shall comply with the physical requirements for Type “B” gaskets in AASHTO Designation M-198, or Federal Specification SSS-00210-A, sealing compound, preformed plastic for expansion joints and pipe joints.

B.5 Steps

All manholes shall be provided with steps equally spaced vertically on center installed by the manufacturer as shown on the standard detail sheet. Steps shall be embedded into the riser or conical top section of the wall a minimum of 3 inches. Manhole steps shall meet the requirements of section 8.40.1 of the SSSW.

B.6 Elastomeric Waterproofing Sealer

Elastomeric waterproofing membrane shall be a single component, bitumen-modified, moisture-curing polyurethane similar to TREMproof 60 as manufactured by Tremco, 10701 Shaker Blvd., Cleveland, Ohio 44104; Duramem V500 as manufactured by Pecora Corporation, 2601 Oakland Avenue, Garland, Texas 75040; Thiodeck C.F. as manufactured by Toch/Carboline Company, 350 Hanley Industrial Court, St. Louis, Missouri 63144; or equal.

B.7 Plastic Sheet

Plastic sheet shall be clear plastic, minimum 4 mils. thick, of length and width to cover elastomeric waterproofing sealer.

B.8 Backfill Slurry

Backfill slurry shall meet the material and construction requirements of section 8.43.8 of the SSSW.

C Construction

C.1 General

Reconstruct manholes to conform to the detail on the standard detail sheet and in the locations shown in the plans.

The location of existing water manholes to be reconstructed is indicated on the plans. Reconstruct these items as shown in the plans. Reconstruct manholes as necessary so that the frames and lid when placed will be at the established required grade. Install seals according to the manufacturer’s recommended installation procedures. Furnish and use backfill slurry in the manhole excavation area to existing surface or to appropriate depth for pavement restoration.

Prior to starting work, submit protocol for preventing any foreign material from falling into the manhole. Verify no debris falls into the manhole prior to, during and completing construction of manhole. Put in place measures to clean out any foreign materials that fall into the bottom of the manholes.

C.2 Backfill

Backfill with slurry backfill material.

Remove all form materials and trash from the excavation before placing any backfill. Backfill around manholes only after the concrete has attained 2/3 of the specified compressive strength. Obtain the engineer's approval of concrete work and attained strength prior to backfilling. Backfill shall be brought up uniformly around manholes and structures to prevent unbalanced lateral loading.

C.3 Elastomeric Waterproofing Sealer

Elastomeric waterproofing sealer shall be applied to all manholes. Thoroughly sandblast the section of the manhole frame over which the sealer is to be applied, the manhole header, extension and cone and the top 12 inches of the manhole riser. All surfaces shall be free of dust, oil, rust, loose materials and other contaminants. Take necessary precautions to prevent rebound from the sandblasting operation to enter the manhole. If the mortar between grade rings or brick courses is removed to a depth greater than 1/4 inch by the sandblasting, the joints shall be refilled with mortar as specified herein. All new masonry work shall be cured a minimum of 24 hours prior to applying the waterproofing sealer.

Apply the 4-inch wide bond breaker tape completely around the manhole circumference and centered over the mortar joint between the manhole frame and the manhole extension. Immediately before applying the sealer, wipe all surfaces with a cleaner and immediately prime. The cleaner and primer shall be furnished by the sealer manufacturer. Apply the sealer with a trowel, roller or by spraying to achieve a thickness of not less than 100 wet mils. Do not apply the sealer when the ambient temperature is below 40 degrees F. The sealer shall extend from 9 inches below the bottom of the manhole cone and be carried over the top and onto the flange of the frame a minimum of 5 inches.

Allow the sealer to cure a minimum of 24 hours before backfilling when the ambient temperature is above 70 degrees F, and 48 hours when the ambient temperature is below 70 degrees F. Immediately before backfilling, loosely wrap two layers of 4 mil plastic sheet over the sealed area to prevent direct contact between the sealer and the backfill material.

C.4 Manhole Seal

Seals shall cover from the frame across all rings and onto the cone.

C.5 Manhole Frames and Lids

Salvage and reinstall existing frames and lids.

D Measurement

The department will measure Reconstruct Water Manhole as a unit for each individual manhole, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5011	Reconstruct Water Manhole	EACH

Payment is full compensation for providing and installing all required materials including barrel sections, adjusting rings, internal frame/chimney seals, joints, steps, elastomeric waterproofing sealer, plastic sheet, and masonry and fittings; for salvaging and reinstalling existing covers, including frames and lids; for excavating, backfilling, and compacting; for furnishing and placing backfill slurry; for disposing of surplus materials; and for cleaning out and restoring the structure.

263. Pavement Cleanup Project 1229-04-71, Item SPV.0075.0600; Pavement Cleanup Project 1229-04-73, Item SPV.0075.0601; Pavement Cleanup Project 1229-04-77, Item SPV.0075.0602.

A Description

This special provision describes cleanup of dust and debris from pavements within and adjacent to the job site. Pavement Cleanup includes surveillance and reporting of all active haul routes.

B Materials

B.1 Pavement Cleanup

Furnish a vacuum-type street sweeper equipped with a power broom, water spray system, and a vacuum collection system.

Use vacuum equipment with a self-contained particulate collector capable of preventing discharge from the collection bin into the atmosphere.

Use a vacuum-type sweeper as the primary sweeper, except as specified in this special provision or approved by the engineer.

C Construction

C.1 Surveillance

Provide daily surveillance of active haul routes to identify if material is being tracked from the jobsite. Document the condition of the roads and all sweeping recommendations in a daily report. Submit reports to the engineer daily, including hourly metered tickets for that day's sweeping activities.

C.2 Pavement Cleanup

Keep all pavements, sidewalks, driveways, curb lanes and gutters within the project boundaries, free of dust and debris generated from all activity under the contract. Keep all pavements, sidewalks, driveways, curb lanes, and gutters adjacent to the project free of dust and debris that are caused by land disturbing, dust generating activities, as defined in the contractor's Dust Control Implementation Plan (DCIP). Provide routine sweeping of all pavements, sidewalks, driveways, curb lanes and gutters on local-street active haul routes as defined in the DCIP or as directed by the engineer. Include the following roadways for routine sweeping:

- IH 43 (NB and SB)
- On/Off Ramps
- Good Hope Road
- Brown Deer Road
- Jean Nicolet Road
- Port Washington Road
- And all other roadways approved by the department

In addition to routine sweeping, conduct sweepings as the engineer directs or approves, to eliminate dust problems that might arise during off-work hours or emergencies. Provide the engineer with a contact person available at all times to respond to requests for emergency sweeping. Coordinate with engineer to determine deadlines for responding to emergency sweeping requests and cleaning up spillage and material tracked to/from the project.

Skid steers with mechanical power brooms may only be used on sidewalks and driveways whose pavements will not support the weight of a street sweeper, unless otherwise approved by the engineer. Do not dry sweep. Ensure all broomed equipment used for sweeping has a functioning water bar.

D Measurement

The department will measure Pavement Cleanup (Project ID) by the hour, acceptably completed.

Tickets shall include:

- Date
- Company
- Operator name
- Equipment make/model
- Routes swept
- Total hours.

Total hours shall be to the nearest 0.25 hour that work under this item was performed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV. 0075.0600	Pavement Cleanup Project 1229-04-71	HR
SPV. 0075.0601	Pavement Cleanup Project 1229-04-73	HR
SPV. 0075.0602	Pavement Cleanup Project 1229-04-77	HR

Payment is full compensation for daily surveillance; preparing and submitting the daily surveillance report with hourly metered tickets; mobilization; sweeping; and disposing of materials.

sef-104-006 (20170323)

264. Obstructions Wall Secant Pile, Item SPV.0075.4000; Obstructions Foundation Drilling, Item SPV.0075.4001.

A Description

A.1 General

The work included herein consists of removing, drilling, or coring through unknown, and unidentified, man-made subsurface obstructions when encountered for construction of drilled foundation shafts, drilled shafts for secant pile retaining walls, drilled shafts for tangent pile retaining walls, drilled shafts for trial

wall panels, foundation drilling for soldier pile retaining walls or drilling for concrete masonry sign supports.

A.2 Definitions

Surface obstructions are defined as any objects, man-made or naturally deposited, encountered within 6 feet of the ground surface. Subsurface obstructions are defined as man-made obstructions that are encountered by the drilling equipment at a depth greater than 6 feet below the ground surface. Obstructions include only man-made materials, such as old concrete foundations or abandoned utilities. Known obstructions are man-made obstructions that are shown or identified in the plans. Unknown obstructions are man-made obstructions that are not shown or identified in the plans. Naturally occurring deposits such as rock, boulders, cobbles, nested cobbles and nested boulders, are not considered obstructions and therefore are not applicable to the provision of this pay item.

B (Vacant)

C Construction

Remove surface and subsurface obstructions at drilled shaft locations. For drilled foundation shafts, wall secant pile shafts, wall tangent pile shafts and foundation drilling, use special tools and/or procedures when the contractor cannot advance the hole more than 12 inches in 60 minutes using conventional rock augers fitted with teeth, drilling buckets, or under reaming tools operating at maximum power, torque, and down thrust. For drilling associated with the construction of sign supports, use special tools and/or procedures when the contractor cannot advance the hole more than 12 inches in 60 minutes using conventional earth augers operating at maximum power, torque, and down thrust. Special procedures and/or tools may be required but are not limited to chisels, breakers, core barrels, air hammer tools, and hand excavation. Other methods for obstruction removal can be employed to aid in the removal if acceptable to the engineer, or the UPRR engineer if applicable. Blasting is not permitted.

When an unknown subsurface obstruction is encountered, notify the engineer, or the UPRR engineer if applicable, prior to beginning any work to remove the obstruction.

D Measurement

The department will measure Obstructions (Type) by the hour for each hour the contractor actively spends removing or coring through unknown man-made subsurface obstructions. A quantity of one hour will be paid upon the determination that a subsurface obstruction is encountered based on lack of hole advancement with conventional tools as set forth in this specification. Upon removal of the unknown man-made subsurface obstruction, portions of the final hour measured will be rounded up to the next whole hour. Down time spent planning for subsurface obstruction removal or delays caused by the mobilization of special equipment and tools not readily available at the site will not be measured for payment.

Measurement Example		Paid Obstruction Hours
1	Drilling encounters possible obstruction. Contractor notifies engineer. Start clock.	0.00
2	Conventional drilling equipment does not advance 12 inches after attempting to do so for at least 60 minutes.	1.00
3	Contractor resumes work clearing obstruction the following day. Assume the obstruction is cleared in aggregate total of 1 hour and 15 minutes of time. Obstruction is identified to be a previously unknown and unidentified man-made obstruction.	2.00

Only unknown (not identified in the plans), man-made subsurface obstructions, will be measured for payment. Work to clear and remove surface obstructions, known obstructions identified on the plans, and any natural deposits (rock, boulders, cobbles, nested cobbles and nested boulders) will not be measured separately for payment and shall be included in the applicable items for Drilled Shaft Foundation, Wall Secant Pile, Foundation Drilling, or Concrete Masonry Ancillary Structures Type NS.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0075.4000	Obstructions Wall Secant Pile	HRS
SPV.0075.4001	Obstructions Foundation Drilling	HRS

Payment is full compensation for removal and disposal of unknown, man-made subsurface obstructions; and for furnishing all materials, labor, equipment, additional concrete, and incidentals necessary to complete the work.

Obstructions removed as part of the Trial Wall Panel special provisions are included in the bid items listed in those special provisions.

265. Seeding Mixture No. 30 Special, Item SPV.0085.0003.

A Description

This special provision describes providing and sowing a salt tolerant seed mix on areas shown in the plans, according to standard spec 630 except as follows:

B Materials

Replace standard spec 630.2.1.5.1.1 Table 630-1 Highway Seed Mixtures with the following:

Seeding Mix No. 30 Special will conform to the following the species, proportions, purity, and germination:

Species	Purity Minimum %	Germination Minimum %	Mixture Proportion %
Perennial Ryegrass	97	90	10
Hard Fescue	97	85	15
Red Fescue	97	85	25
Salt Grass	98	85	20
Tall Fescue	98	85	30

C Construction

Replace standard spec 630.3.5 (1) with the following:

(1) Use the following sowing rates for the seeds in pounds per 1000 square feet:

- Seed Mixture 30 Special at 5.0 pounds

Seeding will not be allowed between June 15 and October 15.

D Measurement

The department will measure Seed Mix No. 30 Special by the pound, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0085.0003	Seeding Mix No. 30 Special	LBS

Payment is full compensation for providing, handling, and storing seed, for preparing the seed bed, sowing, covering, and firming the seed.

266. Native Pollinator Seeding Mixture No. 90A, Item SPV.0085.0004.

A Description

This special provision describes preparing seed beds and furnishing and sowing the required seed on areas identified in the plan set.

Conform to standard spec 630 except as modified in this special provision.

B Materials

Conform to standard spec 630.2 and follow guidance for seed mixture 70/70a. Use Table 1 for seed mixture 90A composition.

PLS for seeding mixture 90A must be packaged separately by species and clearly labeled with the vendor's name, species common and botanical names, gross weight, percent PLS, year of harvest and any specialized treatments that have been applied to ensure or enhance germination.

Table 1 – Native Pollinator Seed mix 90A

Nomenclature			Seed Metrics				
Scientific Name	Common Name	Purity and Germination minimum %	Oz/Acre	% Mix by Oz/Acre	lbs/Acre	lbs/1,000 square feet	Seeds/oz
Grasses and Sedges							
Andropogon gerardii	Big Bluestem	PLS	8.00	4.68	0.50	0.011	10,000
Bouteloua curtipendula	Side oats Grama	PLS	32.00	18.72	2.00	0.046	6,000
Carex bicknellii	Bicknell's Oval Sedge	PLS	1.50	0.88	0.09	0.002	17,000
Carex brevior	Fescue Sedge	PLS	2.00	1.17	0.13	0.003	29,000
Carex molesta	Field Oval Sedge	PLS	1.75	1.02	0.11	0.003	25,000
Elymus canadensis	Canada Wild Rye	PLS	30.00	17.55	1.88	0.043	5,200
Elymus virginicus	Virginia Wild Rye	PLS	8.00	4.68	0.50	0.011	4,200
Panicum virgatum	Switch Grass	PLS	1.00	0.58	0.06	0.001	14,000
Schizachyrium scoparium	Little Bluestem	PLS	32.00	18.72	2.00	0.046	15,000
Sorghastrum nutans	Indian Grass	PLS	8.00	4.68	0.50	0.011	12,000
Sporobolus heterolepis	Prairie Dropseed	PLS	3.00	1.75	0.19	0.004	16,000
Alternate Grasses and Sedges							
Calamagrostis canadensis	Blue Joint Grass	PLS					280,000
Carex scoparia	Lance-fruited Oval Sedge	PLS					84,000
Muhlenbergia mexicana	Leafy Satin Grass	PLS					175,000
Spartina pectinata	Prairie Cord Grass	PLS					6,600

Nomenclature		Purity and Germination minimum %	Seed Metrics				
Scientific Name	Common Name		Oz/Acre	% Mix by Oz/Acre	lbs/Acre	lbs/1,000 square feet	Seeds/oz
Forbs							
Asclepias syriaca	Common Milkweed	PLS	3.00	1.75	0.19	0.004	4,000
Astragalus canadensis	Canadian Milk Vetch	PLS	1.00	0.58	0.06	0.001	17,000
Dalea purpurea	Purple Prairie Clover	PLS	4.00	2.34	0.25	0.006	15,000
Desmodium illinoense	Illinois Tick Trefoil	PLS	1.50	0.88	0.09	0.002	4,300
Echinacea pallida	Pale Purple Coneflower	PLS	2.00	1.17	0.13	0.003	5,200
Eryngium yuccifolium	Rattlesnake Master	PLS	2.00	1.17	0.13	0.003	7,500
Heliopsis helianthoides	False Sunflower	PLS	3.00	1.75	0.19	0.004	6,300
Heuchera richardsonii	Prairie Alumroot	PLS	0.20	0.12	0.01	0.000	700,000
Monarda fistulosa	Wild Bergamot	PLS	1.50	0.88	0.09	0.002	70,000
Penstemon digitalis	Foxglove Beardtongue	PLS	2.00	1.17	0.13	0.003	130,000
Pycnanthemum virginianum	Mountain Mint	PLS	0.75	0.44	0.05	0.001	220,000
Ratibida pinnata	Yellow Coneflower	PLS	3.00	1.75	0.19	0.004	30,000
Rudbeckia hirta	Black-eyed Susan	PLS	4.00	2.34	0.25	0.006	92,000
Rudbeckia subtomentosa	Sweet Black-eyed Susan	PLS	1.50	0.88	0.09	0.002	43,000
Silphium integrifolium	Rosinweed	PLS	2.00	1.17	0.13	0.003	1,200
Silphium laciniatum	Compass Plant	PLS	2.00	1.17	0.13	0.003	660
Solidago rigida	Stiff Goldenrod	PLS	2.50	1.46	0.16	0.004	41,000
Symphyotrichum laeve	Smooth Blue Aster	PLS	1.00	0.58	0.06	0.001	55,000
Symphyotrichum novae-angliae	New England Aster	PLS	1.00	0.58	0.06	0.001	66,000
Tradescantia ohiensis	Ohio Spiderwort	PLS	2.00	1.17	0.13	0.003	8,000
Verbena stricta	Hoary Vervain	PLS	1.50	0.88	0.09	0.002	28,000
Veronicastrum virginicum	Culver's Root	PLS	0.25	0.15	0.02	0.000	800,000
Zizia aurea	Golden Alexanders	PLS	2.00	1.17	0.13	0.003	11,000
Alternate Forbs[3]							
Geum aleppicum	Yellow Avens	PLS					20,000
Parthenium integrifolium	Wild Quinine	PLS					7,000
Rudbeckia triloba	Brown-eyed Susan	PLS					34,000
Silphium terebinthinaceum	Prairie Dock	PLS					1,000
Solidago speciosa	Showy Goldenrod	PLS					95,000

Nomenclature		Purity and Germination minimum %	Seed Metrics				
Scientific Name	Common Name		Oz/Acre	% Mix by Oz/Acre	lbs/Acre	lbs/1,000 square feet	Seeds/oz
Symphyotrichum oolantangiense	Sky Blue Aster	PLS					80,000
Verbena hastata	Blue Vervain	PLS					93,000
Vernonia fasciculata	Common Ironweed	PLS					24,000

Diversity and Density Metrics

Plant Type	Species Richness	Purity and Germination minimum %	Oz/Acre	% Mix by Oz/Acre	lbs/Acre	lbs/1,000 square feet	Seeds/oz
Grasses and Sedges	11		127.25	74.44	7.95	0.183	
Forbs	23		43.70	25.56	2.73	0.063	
Totals	**34**		**170.95**	**100.00**	**10.68**	**0.245**	

[1]Seed mix is designed for 1.0 acre.

[2]Alternate species are provided below each section (graminoids and forbs). Wisconsin blooming periods are defined as Spring (April-May), Summer (June-August), and Fall (September-October).

[3]The contractor may, if the engineer approves, substitute an alternate for a required species that is not available using the same percentage as specified for the required species. Use a different alternate for each unavailable required species. Provide documentation showing that a required forb is not available before using an alternate.

If seeding bare soil with native seed mixture 90A, include the nurse crop as follows. Do not seed native seed mixtures between June 15 and October 15 unless the engineer allows.

Install nurse crop with permanent native seed mix. Select appropriate seed combinations from table below based on timing of installation. Annual rye will be installed with common oats or winter wheat. Nurse crop is not suitable for areas with standing water.

Table 2 – Nurse Crop

Scientific Name	Common Name	Installation Rate	
		(lbs/acre)	(lbs/1000 sq. ft.)
Spring seeding before June 15			
Avena sativa	Common Oats	35	0.8
Lolium multiflorum	Annual Rye[1]	5	0.12
When the engineer allows between June 15 and October 15			
Avena sativa	Common Oats	35	0.8
Lolium multiflorum	Annual Rye[1]	5	0.12
Fall seeding after October 15 and dorment seeding			
Triticum aestivum	Winter Wheat[2]	45	1
Lolium multiflorum	Annual Rye[1]	5	0.12

[1]Spring (April-May) and late summer (August-early September) preferred for annual rye but may be established in summer or a dormant seeding as seed will overwinter.

[2]August-September preferred for winter wheat but may be used as dormant seeding as seed will overwinter and germinate in the spring.

C Construction

Conform to standard spec 630.3 following guidance for seed mixture 70/70a.

Seeding will not be allowed between June 15 and October 15. There will be no exceptions.

Sow seeds at a rate of 0.245 pounds per 1000 square feet.

D Measurement

The department will measure Native Pollinator Seeding Mixture No. 90A by the equivalent pound, acceptably completed, measured based on net weights of seed shipments or weighed on department-approved scales the contractor furnishes. The department will deduct quantities wasted or not actually incorporated in the work according to the contract. The department will determine the equivalent pounds of seed furnished and applied by dividing the actual pounds of seed applied by the sum of the unadjusted and adjusted percentages, determined as specified in 630.3.5, of the various species in the seed mixture sown.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0085.0004	Native Pollinator Seeding Mixture No. 90A	LB

Payment is full compensation for providing, handling, and storing seed; for providing the required culture and inoculating seed as specified; and for preparing the seed bed, sowing, covering, and firming the seed.

267. Maintain and Remove Temporary Precast Concrete Barrier Left In Place, Item SPV.0090.0001.

A Description

This special provision describes maintaining and removing temporary precast concrete barrier left in place according to standard spec 603 and as hereinafter provided.

B (Vacant)

C Construction

Maintain the temporary precast concrete barrier left in place, including but not limited to replacing unacceptable concrete barrier, replacing damaged concrete barrier, and repositioning displaced concrete barrier.

Remove the temporary precast concrete barrier left in place according to standard spec 603.3.2 after it is no longer of use to the project.

D Measurement

The department will measure Maintain and Remove Temporary Precast Concrete Barrier Left In Place by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0001	Maintain and Remove Temporary Precast Concrete Barrier Left In Place	LF

Payment is full compensation for maintain temporary precast concrete barrier left in place for the duration of its use on the project and for removing temporary precast concrete barrier left in place at the completion of the project or when it is no longer of use with the project.

268. Concrete Barrier Type S42 Special, Item SPV.0090.0002; Concrete Barrier Type S56 Special, Item SPV.0090.0003.

A Description

This special provision describes constructing Concrete Barrier (Type) according to standard spec 603, details shown in the plans, and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Concrete Barrier (Type) by the linear foot, acceptably placed according to the contract.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0002	Concrete Barrier Type S42 Special	LF
SPV.0090.0003	Concrete Barrier Type S56 Special	LF

269. Salvage and Reinstall Fence, Item SPV.0090.0004.

A Description

This special provision describes salvaging, maintaining, and reinstalling existing wooden privacy fence, as shown on the plans and as directed by the engineer, according to standard spec 616, and as hereinafter provided. The intent of this specification is to fully enclose the property similar to the existing condition by reinstalling the salvaged fence along its new location.

B Materials

Reuse existing salvaged fence. If existing fence is unsalvageable due to poor condition or issues encountered during removal, furnish fencing materials comparable to existing.

C Construction

Fence posts may be driven into the ground or set in augered holes, backfilled and compacted. Minimum embedment shall be 4 feet. Notify property owners 30 working days in advance of fence removal. Reinstall fence within 5 calendar days of removal. Install temporary orange safety fence after existing wooden fence panels are removed.

D Measurement

The department will measure Salvaged and Reinstalled Fence in place by the linear foot from end posts, center to center, along the ground line. Additional payment for new fencing materials will not be made.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0004	Salvage and Reinstall Fence	LF

Payment is full compensation for salvaging and reinstalling existing fence.

270. Concrete Curb and Gutter 66-Inch Type D, Item SPV.0090.0005.

A Description

This special provision describes constructing Concrete Curb and Gutter 66-Inch according to pertinent requirements of standard spec 601, construction details, and plan details.

B Materials

Use materials as described in the construction detail shown in the plans and as described in standard spec 601.2.

C Construction

Perform work as specified in standard spec 601.3.

D Measurement

The department will measure Concrete Curb and Gutter 66-Inch Type D by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0005	Concrete Curb and Gutter 66-Inch Type D	LF

Payment is full compensation for preparing the foundation; all special construction required at driveway entrances, alley entrances or curb ramps; for providing all materials, including concrete, expansion joints and tie bars in unhardened concrete; for placing, finishing, protecting and curing concrete; and for hand forming or sawing contraction joints.

271. Concrete Curb and Gutter 78-Inch Type D, Item SPV.0090.0006.

A Description

This special provision describes constructing Concrete Curb and Gutter 78-Inch according to pertinent requirements of standard spec 601, construction details, and plan details.

B Materials

Use materials as described in the construction detail shown in the plans and as described in standard spec 601.2.

C Construction

Perform work as specified in standard spec 601.3.

D Measurement

The department will measure Concrete Curb and Gutter 78-Inch Type D by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0006	Concrete Curb and Gutter 78-Inch Type D	LF

Payment is full compensation for preparing the foundation; all special construction required at driveway entrances, alley entrances or curb ramps; for providing all materials, including concrete, expansion joints and tie bars in unhardened concrete; for placing, finishing, protecting and curing concrete; and for hand forming or sawing contraction joints.

272. Concrete Barrier Transition Type Parapet to V32, Item SPV.0090.0007.

A Description

This special provision describes constructing Concrete Barrier Transition Type Parapet to V32 according to standard spec 603, details shown in the plans, and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Concrete Barrier Transition Type Parapet to V32 by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0007	Concrete Barrier Transition Type Parapet to V32	LF

Payment is full compensation for constructing Concrete Barrier Transition Type Parapet to V32.

273. Fence Chain Link Polymer-Coated 4-Ft. Road Barrier, Item SPV.0090.0300; Fence Chain Link Polymer-Coated 6-Ft R-40-641, Item SPV.0090.4015.

A Description

This special provision describes furnishing and installing a new polymer-coated fence system on structures in conforming to the pertinent plan details and as directed by the engineer. The color of all components in this fence system shall be the same and shall be as specified on the plans.

B Materials

All materials for this fence system shall be new stock, free from defects impairing strength, durability, and appearance. Fabric shall be produced by methods recognized as good commercial practice. Wire used in the manufacture of the fabric shall be capable of being woven into fabric without the polymer-coating cracking or peeling. Pipes used in framework shall be straight, true to section and free of defects. All burrs at the ends of pipes shall be removed before galvanizing. The polymer-coating shall be a dense impervious covering, applied without voids, tears or cuts that reveal the substrate. Excessive roughness, bubbles, blisters and flaking in the polymer-coating will be a basis for rejection.

B.1 Fabric

Provide steel chain link fence fabric conforming to the requirements of ASTM F668, Class 2b, a polymer-coating fused and adhered to wire that is zinc-coated. Provide fabric woven from 9-gage wire using plan specified mesh size, diamond pattern, with both the top and bottom selvages knuckled. The minimum breaking strength of the wire shall be 1290 lbs. The color of polymer-coating shall conform to the requirements of ASTM F934.

B.2 Framework

Provide steel rails, posts and post sleeves conforming to the requirements of ASTM F1083, Standard Weight Pipe (Schedule 40) of the size (O.D.) and weight as shown on the plans. The minimum yield strength shall be 30,000 psi and the minimum tensile strength shall be 48,000 psi. These components shall be zinc-coated inside and outside by the hot-dip process as stated in ASTM F1083. Provide polymer-coating over zinc-coating conforming to ASTM F1043. The color of polymer-coating shall conform to the requirements of ASTM F934, and match the color of the other fence components. Weld base plate to posts or post sleeves and complete any additional welding of components before galvanizing.

B.3 Fittings

Provide end post caps, line post caps, top rail sleeves, rail ends, line rail clamps, brace bands, tension bands, tension bars, and tie wires that are steel and conform to the requirements of ASTM F626. Tie wires shall be round and 9-gage wire. These components (excluding tie wires) shall be zinc-coated by the hot-dip process as stated in ASTM F626. Provide polymer-coating over zinc-coating on components (excluding tie wires) that conforms to the requirements of ASTM F626. For tie wires, provide polymer-coating on wire that is zinc-coated using the same procedure as used for the wires in the fence fabric. End post caps and line post caps shall fit tightly over posts to prevent moisture intrusion. Supply dome style caps for end posts and loop type caps for line posts. The color of polymer-coating shall conform to the requirements of ASTM F934, and match the color of the other fence components.

B.4 Bolts

All bolts are to be supplied with lock washers and nuts. Use galvanized steel bolts, nuts and washers per plan details.

B.5 Tests

B.5.1 Fabric and Tie Wrap

Breaking Strength: ASTM A370

Zinc-Coating Requirements

Weight of Zinc-Coating: ASTM A90

Polymer-Coating Requirements

Thickness of Polymer-Coating: ASTM F668

Adhesion: ASTM F668

Accelerated Aging Test: ASTM F668, D1499

Mandrel Bend Test: ASTM F668

B.5.2 Framework

Tensile and Yield Strength: ASTM E8

Zinc-Coating Requirements

Weight of Zinc-Coating: ASTM A90

Polymer-Coating Requirements

Thickness of Polymer-Coating: ASTM E376

Adhesion: ASTM F1043

Accelerated Aging Test: ASTM F1043, D1499

B.5.3 Fittings

Zinc-Coating Requirements

Weight of Zinc-Coating: ASTM A90

Polymer-Coating Requirements

Thickness of Polymer-Coating: ASTM F626

Adhesion: ASTM F1043 (same test as for framework)

Accelerated Aging Test: ASTM F1043, D1499 (same test as for framework)

B.6 Submittals

In addition to the engineer, send submittals listed in this section to the name below for informational purposes:

David Nelson
WisDOT (Bureau of Structures)
4822 Madison Yards Way
Madison, WI 53705

B.6.1 Shop Drawings

Submit shop drawings showing the details of fence construction. Show the fence height, post spacing, rail location, and all dimensions necessary for the construction of the chain link fence. Label the end posts, line posts, rails, post sleeves, top rail sleeves, bolts and fittings. State the polymer-coating type used on the fabric, framework and fittings and the Class of coating used on the fabric. State the color of polymer-coating to be used on the fence components. For the fabric, state the wire gage, mesh size, and type of selvages used. For the framework, state the size (O.D.) and unit weight for the posts and rails. For the fittings, state the size for top rail sleeves, brace bands, tension bands, tension bars, line rail clamps, size and type of bolts, and the tie wire gage. State the material type used for fabric, framework, and fittings. Also give the breaking strength for the fabric wire and the tensile and yield strength properties for the framework.

B.6.2 Specification Compliance

Submit certification of compliance with material specifications. Provide material certification and test documentation for fabric, framework, fittings and hardware that shows that all materials meet or exceed the specifications of this contract and the tests in section B5 of this specification. This document shall provide the name, address and phone number of the manufacturer, and the name of a contact person.

C Construction

C.1 Delivery, Storage and Handling

Deliver material to the site in an undamaged condition. Upon receipt at the job site, all materials shall be thoroughly inspected to ensure that no damage occurred during shipping or handling and condition of materials is in conformance with these specifications. If polymer-coating is damaged, contractor shall repair or replace components as necessary to the approval of the engineer at no additional cost to the owner. Carefully store material off the ground to ensure proper ventilation and drainage and to provide protection against damage caused by ground moisture. Handle all polymer-coated material with care.

C.2 Touch-up and Repair

For minor damage caused by shipping, handling or installation to polymer-coated surfaces, touch-up the finish conforming to the manufacturer's recommendations. Provide touch-up coating such that repairs are not visible from a distance of 6-feet. If damage is beyond repair, the fencing component shall be replaced at no additional cost to the owner. The contractor shall provide the engineer with a copy of the manufacturer's recommended repair procedure and materials before repairing damaged coatings.

C.3 General

Install the chain link fence conforming to ASTM F567 and the manufacturer's instructions. The contractor shall provide staff that is thoroughly familiar with the type of construction involved and materials and techniques specified. Chain link fabric shall be installed on the side of the posts indicated on the plans. Fabric shall be attached to the end posts with tension bars and tension bands. It shall be attached to rails, and posts without tension bands, with tie wires. The fabric shall be installed and pulled taut to provide a smooth and uniform appearance free from sag, without permanently distorting the fabric diamond or reducing the fabric height. Install top rail to pass through line post caps and form a continuous brace between end posts. Minimum length of top rail between splices shall be 20-feet. Splice top rail at joints with sleeves for a rigid connection. Locate splices near 1/4-point of post spacing. Heads of bolts shall be on the side of the fence adjacent to pedestrian traffic.

D Measurement

The department will measure Fence Chain Link Polymer-Coated (Height) (Location) by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0300	Fence Chain Link Polymer-Coated 4-Ft. Road Barrier	LF
SPV.0090.4015	Fence Chain Link Polymer-Coated 6-Ft R-40-641	LF

Payment is full compensation for fabricating, galvanizing and polymer-coating all fence components, and transporting to jobsite; and for erecting components to create a polymer-coated fence system, including any touch-up and repairs.

(BOS SPV 09/2018)

274. Remove and Dispose of UPRR Track, Item SPV.0090.0800.

A Description

Remove and dispose from Union Pacific Railroad (UPRR) property all UPRR track that both the UPRR and contractor remove from its operated track. The severed UPRR track includes continuous welded rail (CWR) steel track material, railroad track ties, and other track material (OTM). Ties may be whole or in pieces, and may be of scrap, landscape, or relay quality.

B (Vacant)

C Construction

UPRR will remove some ties from existing track beds where tracks are shifted by UPRR and leave the ties along the grade for recovery by the contractor. UPRR will remove the rail and OTM where tracks are shifted by UPRR and leave the rail along the grade for recovery by the contractor. UPRR may also sever and leave the tracks for complete dismantling by the contractor.

Dismantle the severed tracks, rail and ties and dispose of all material from UPRR property and the project site in compliance with all federal, state and local laws and regulations, exclusive of ballast. The contractor may not dispose of tracks, rail and ties on UPRR right-of-way or on the project site. Treated wood is a regulated solid waste per NR 500 of the Wisconsin Administrative Code. Waste railroad ties generated by the project must be landfilled of at a licensed disposal facility. Costs associated with their handling and disposal are incidental to the project.

D Measurement

The department will measure Remove and Dispose of UPRR Track in length by the linear foot of track acceptably removed and disposed. A linear foot of track includes two parallel rails, the appurtenant fastenings, and any underlying ties, exclusive of ballast. The engineer will measure the track in place prior to dismantling by the contractor, or by the linear foot of rail in stockpiles divided by two.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0800	Remove and Dispose of UPRR Track	LF

Payment is full compensation for dismantling track; removing rail, ties, and other appurtenances such as tie plates, compensation bars, insulated joints, rail anchors, spikes, and other steel track material from the railroad grade; obtaining any permits required and paying for all costs associated with the proper disposal of rail, ties and other appurtenances.

275. Construct 136LB ISHH CWR on Wood Ties, Item SPV.0090.0805; Furnish 136lb ISHH Rail, Wood Ties and Other Track Material (OTM), Item SPV.0090.0808.

A Description

Construct 136lb ISHH continuous welded rail (CWR) on wood ties outside UPRR designated thirteen (13) foot clear zones as indicated in the plans. Furnish 136lb ISHH rail, wood ties and OTM for UPRR installation within the same clear zones as indicated in the plans.

B Materials

Provide all materials for contractor activities. Provide all materials for railroad activities, including Transition Rail 136 LB NEW to 136 LB WORN, as indicated on UPRR standard drawing 0947B at all ends of the new mainline tracks outside of the 13’ clear zone indicated in the plans. All track materials, including ballast, shall be according to UPRR General Conditions and Specifications sections 34 11 10 Railroad Track Construction Part 2 - Track Material. Ballast materials shall comply with the gradations criteria indicated in UPRR standard drawing 0010E.

C Construction

C.1 General

Construction shall be according to UPRR General Conditions and Specifications Part 3 - Execution of section 34 11 10. Additional requirements are as follows:

1. The contractor shall supply joint bars and bolts for temp rail connections.
2. The contractor shall install transition rails, as noted in subsection B above, at both ends of the new mainline track; the railroad will connect to the transition rails when performing the track shift.
3. The contractor shall line and surface the new permanent offset track to within 1/8” of the profile indicated on the plans.
4. The contractor shall furnish, unload and stockpile ballast, rail, wood ties, plates and fasteners, and properly assemble and stage track, for railroad use during the track shift.

5. The railroad will sever and remove from service the existing mainline track east and west of the existing bridge crossing; the contractor will remove and salvage existing track that the railroad removes from service, as well as dispose of any rail, ties, and other track material replaced by the railroad, in accordance with the special provision “Remove and Dispose of UPRR Track”.
6. The railroad will shift to 13’clear zone locations and reconnect the severed mainline track to the new mainline track constructed by the contractor outside the 13’ clear zone locations on the permanent offset north of the existing bridge crossing.
7. The railroad will surface the existing track and connections to final horizontal and vertical alignments as shown on the plans for all track outside the contractor work zone.

C.2 Rail Laying Temperature

Lay new CWR to the designated rail laying temperature for the subdivision. Confirm this in writing with the UPRR engineer and the engineer. Ensure that rails are installed at a temperature that is greater than or equal to the designated rail laying temperature for the subdivision and do not exceed a rail laying temperature that is 10 degrees F above the rail laying temperature.

EXAMPLE: Rail laying temperature for a subdivision is 100 degrees F. If the rail laying temperature did not fall into this threshold of $\geq$ 100 degrees F $\leq$ 110 degrees F, it must be readjusted.

Measure rail neutral temperature with Vertical Rail Stiffness Equipment (VERSE) at least every 1440 feet. (When rail is in compression or above the above the rail neutral temperature the VERSE cannot be used. VERSE can only be used for tangent track and curves that are up to 2 degrees. VERSE measurement cannot be taken when it is closer than 100 ft. from any switch or crossing. VERSE measurement cannot be taken if the lifted length of rail contains joints or different rail sections.)

D Measurement

The department will measure Construct 136LB ISHH CWR on Wood Ties and Furnish 136lb ISHH Rail, Wood Ties and Other Track Material (OTM) by the linear foot. A linear foot of track includes two parallel rails, the appurtenant fastenings, ties, tie plates, and ballast. The engineer will measure the length of finished constructed track outside the designated 13 foot clear zones.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0805	Construct 136LB ISHH CWR on Wood Ties	LF
SPV.0090.0808	Furnish 136lb ISHH Rail, Wood Ties and Other Track Material (OTM)	LF

Payment for Construct 136LB ISHH CWR on Wood Ties bid item is full compensation for furnishing, unloading and placing rail and other appurtenances such as wood ties, plates and fasteners; properly assembling track to correct elevation and temperature criteria, welding rail; furnishing, spreading, placing and testing ballast.

Payment for Furnish 136lb ISHH Rail, Wood Ties and Other Track Material (OTM) bid item is full compensation for furnishing, unloading and assembling for staging rail and other appurtenances such as wood ties, plates and fasteners; coordination with UPRR the track staging area; properly assembling track; furnishing and stockpiling ballast.

276. Construct Double Inside Guard Rail, Item SPV.0090.0810.

A Description

Construct double inside guard rail for ballast deck bridges on wood ties per UPRR standard drawing.

B Materials

Provide all materials for contractor activities.

C Construction

Construction shall be according to UPRR standard drawing 4003, UPRR General Conditions and Specifications Section 34 11 10 – Railroad Track Construction Part 3 - Execution in Appendix A.

D Measurement

The department will measure Construct Double Inside Guard Rail by the linear foot. A linear foot of Double Inside Guard Rail includes second hand rail and frogs, the appurtenant fastenings, tie plates, joint bars, and anchors. The engineer will measure the length of finished double inside guard rail designated in the plans from end point to end point.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0810	Construct Double Inside Guard Rail	LF

Payment is full compensation for unloading and placing rails and other appurtenances such as plates, frogs and fasteners; properly assembling guard rail.

277. Jack and Bore Storm Sewer, 36-Inch, Item SPV.0090.0820.

A Description

The work shall consist of furnishing and installing smooth steel pipe under UPRR track roadbed.

B Materials

Provide all materials for contractor activities. Materials shall be according to UPRR General Conditions and Specifications Section 33 42 20 – Smooth Steel Pipe Culverts Part 2 – Products in Appendix A.

C Construction

Construction shall be according to UPRR General Conditions and Specifications Section 33 42 20 – Smooth Steel Pipe Culverts Part 3 – Execution in Appendix A.

D Measurement

The department will measure Jack and Bore Storm Sewer by the linear foot, acceptably complete. The engineer will measure the length of install designated in the plans from end point to end point.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0820	Jack and Bore Storm Sewer, 36-Inch	LF

Payment is full compensation for excavation, furnishing, unloading, temporary shoring, welding, and installing smooth steel pipe.

278. Geo-web Underlayment, Item SPV.0090.0830.

A Description

The work shall consist of furnishing and installing geoweb underlayment per UPRR standard drawings.

B Materials

Provide all materials for contractor activities.

C Construction

Construction shall be according to UPRR standard drawing 0090, and per manufacturer’s installation requirements.

D Measurement

The department will measure Geo-web Underlayment by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0830	Geo-web Underlayment	LF

Payment is full compensation for providing the geoweb underlayment, and for furnishing certified test reports for approval to the engineer and the UPRR engineer before installing the geoweb underlayment.

279. Glare Screens Temporary, Item SPV.0090.0910.

A Description

This special provision describes furnishing, installing, maintaining, and removing a modular paddle glare guard system on concrete barrier temporary precast at the indicated locations according to the plans and standard specifications, as directed by the engineer and as hereinafter provided.

B Materials

Utilize modular glare guard units consisting of vertical blades, bases, and a horizontal base rail. Utilize paddle devices a minimum of 24-inches in height and constructed of durable, impact resistant, non-warping flexible materials.

Utilize modular units with cumulative nominal length equal to the length of the temporary barrier on which they are installed so that the joint between the barrier sections shall not be spanned by any one unit. Units shall not alter the design of the concrete barrier.

Design the relative connection strengths between various components of the assembly to minimize the potential impact and debris hazard to approaching traffic and to simplify repairs. Fabricate the modular units in a manner to allow replacement of individual blades while the modular unit remains in place.

The blade, base and rail shall be made of high impact materials with sufficient strength to withstand three impacts from a horizontal steel bar traveling at 40 mph and impacting at mid-height of the blade. After three impacts, there shall be no evidence of cracking, splitting, delaminating or separation from the system.

Provide a paddle glare guard from a manufacturer below or an approved equal:

Manufacturer	Address
Safe-Hit Corporation	2405 IH 35 West, New Braunfels, Texas, 78130
Carsonite International	2900 Lockhead Way, Carson City, Nevada, 89701
Flexstake Incorporated	2150 Andrea Lane, Fort Myers, Florida, 33912

C Construction

Attach the base rail to the top of the concrete barrier temporary precast by a mechanical or adhesive system with a minimum pullout and shear of 3000 psi. All mounting hardware shall be as specified by the manufacturer.

D Measurement

The department will measure Glare Screens Temporary by the linear foot of paddle glare guard, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0910	Glare Screens Temporary	LF

Payment is full compensation for furnishing, installing, maintaining and removing the Glare Screens Temporary.

280. Cable Aerial Aluminum 6 AWG Quadruplex, Item SPV.0090.1001; Cable Aerial Aluminum 4 AWG Quadruplex, Item SPV.0090.1002; Cable Aerial Aluminum 6 AWG Triplex, Item SPV.0090.1003; Cable Aerial Aluminum 4 AWG Triplex, Item SPV.0090.1004.

A Description

Furnish, install, and connect temporary overhead cable complete with all splicing, identifications, terminations and guy wires at wood poles. Remove the overhead cable after the temporary lighting is approved for removal.

B Materials

Overhead cable shall be aluminum conductors according to ASTM B 230 and shall be Class B stranded according to ASTM B 231, and shall conform to the values listed in the table below:

Phase Conductor				Messenger Wire	
Size AWG	Stranding	Avg. Insulation Thickness		Min. Size AWG	Stranding
		mm	mils		
6	7	1.1	45	6	6/1
4	7	1.1	45	4	6/1

The aerial cable shall be an assembly of insulated aluminum conductors and a steel messenger wire according to ANSI/ICEA S-76-474. The cable assembly may have the messenger wire intertwined with the insulated cables or lashed to the insulated cables by a factory wrap. The cable shall be assembled according to ANSI/ICEA S-76-474.

All cable shall be rated 600-V. The cable shall be rated 105º C dry and 90º C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals, and UV rated. The UL listing mark, cable voltage, insulation type and ratings, as well as the cable size, shall all be clearly printed on the cable in a color contrasting with the insulation color. When specified, each cable installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible.

All electric cables installed shall be color coded. Neutral wires shall be color-coded white. Single phase three wire runs of cable shall be color-coded one black, one red, and one white. Insulated ground wires, where applicable, shall be green. Color striping of cables will not be acceptable in lieu of the specified color-coding means.

Make the luminaire connections to the aerial cable with listed parallel tap insulation piercing connectors. The connector shall be rated for 600-V, and be listed under UL Standard 486B.

C Construction

Overhead cable as shown on temporary lighting plans will not be needed for final lighting. Remove temporary overhead cable. Removal of temporary overhead cable will be incidental to this pay item and it will become property of the contractor. The bid price shall reflect the salvage value of the temporary overhead cable.

Upon written request of the contractor, the engineer may permit to reuse removed temporary overhead cable of ampacity equivalent to the specified cable and of a type and condition approved by the engineer, if possible.

Install guy wires as necessary per WisDOT standard details for Span Wire Temporary Traffic Signal.

Conform to standard spec 655.3.5(9) for ground resistance testing.

D Measurement

The department will measure Cable Aerial Aluminum 6 AWG Quadruplex; Cable Aerial Aluminum 6 AWG Triplex; Cable Aerial Aluminum 4 AWG Quadruplex; Cable Aerial Aluminum 4 AWG Triplex in length by the linear foot in place and will be taken as the length of the messenger wire. Measurement will be made in a straight line between changes in direction and to the centers of light standards and control cabinets. Sag of the aerial cable or vertical cable will not be measured for payment. The rewiring to facilitate relocation of the cable due to staging or other construction requirements will not be measured for payment.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.1001	Cable Aerial Aluminum 6 AWG Quadruplex	LF
SPV.0090.1002	Cable Aerial Aluminum 6 AWG Triplex	LF
SPV.0090.1003	Cable Aerial Aluminum 4 AWG Quadruplex	LF
SPV.0090.1004	Cable Aerial Aluminum 4 AWG Triplex	LF

Payment is full compensation for providing electrical wire; for making all connections; for providing all connectors, including wire nuts, fuses, fuse holders, splices, tape, and insulators; for providing messenger wire, and guy wires; and for removing temporary overhead cable.

281. Woven Pull Tape, Item SPV.0090.3001.

A Description

This work shall consist of furnishing and installing woven pull tape in bridge conduits and making all connections as shown on the plans and as hereinafter provided.

B Materials

Furnish woven pull tape with a woven/lock stitch polyester flat tape design. The strength shall be as specified for the application and the tape shall have sequential footage markings spaced no more than 5 feet apart. The markings shall be legible and permanently printed with ink jet. Sufficient excess length shall be inserted so the conduit can be cut at any point during installation without causing excessive tightness in the tape for the remaining conduit f the tape is factory installed.

C Construction

Install the woven pull tape in the bridge conduit. The woven pull tape shall be approximately 4 feet longer than the run of conduit and shall be doubled back at least 2 feet at each raceway access point. The woven pull tape shall be anchored at each access point in a manner acceptable to the project manager.

D Measurement

The department will measure Woven Pull Tape by the linear foot tape placed, acceptably completed.

E Payment

Woven pull tape will be paid for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.3001	Woven Pull Tape	LF

Payment shall be full compensation for furnishing and installing woven pull tape; for making all connections; and for all labor, tools, equipment, and incidentals necessary to complete the work.

282. Piling Steel HP 14-Inch X 89 Lb, Item SPV.0090.4000.

A Description

This work consists of furnishing and installing steel piling according to standard spec 550, as shown on the plans, and as hereinafter provided.

B Materials

All materials shall conform to standard spec 550.2 except as modified herein.

C Construction

All construction methods shall conform to standard spec 550.3.

D Measurement

The department will measure Piling Steel pay items by the linear foot, acceptably completed according to standard spec 550.4(1).

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.4000	Piling Steel HP 14-Inch X 89 Lb	LF

Payment will be made according to standard spec 550.5.2.

283. Wall Secant Pile 59.06-Inch, Item SPV.0090.4005.

A Description

This special provision describes installing overlapping drilled shafts to form a secant pile retaining wall as shown on the plans.

Do not start work on any production wall secant piles until acceptance of the Drilling Contractor Qualification submittal, successful completion and acceptance of the Trial Wall Panel Secant Pile 59.06-Inch and the acceptance of the Drilled Foundation Shaft Installation Plan.

A.1 Qualifications of the Contractor

A.1.1 Drilling Contractor Qualification Submittal

Submit the drilling contractor’s qualifications, staff experience records, and equipment cut sheets and descriptions that will perform the work in this special provision at the preconstruction meeting or 21 calendar days prior to the start of wall secant pile construction, whichever date is earlier. The engineer will accept or reject the drilling contractor’s qualifications, staff experience records, and equipment descriptions within 7 calendar days after receipt of the submission.

The drilling contractor performing the work described in these special provisions must have wall secant pile project(s) successfully completed similar to those that the plans show using equipment meeting the requirements in Section B.2 within the last five years. Submit a list outlining the drilling contractor’s experience on at least five projects where they have successfully completed drilled shaft construction, including one project completed within the last five years. A minimum of three of the five projects must be wall secant or tangent pile wall projects. A separate wall project is defined as a secant or tangent pile wall or walls having a total of at least 2000 square feet of total wall area. Include in the project experience at least one project completed in soil and groundwater conditions similar to that anticipated for this project. Include in the project experience advancing the drilled shafts with a shaft size at least as large as the plans show to a depth of at least 60 feet below the original ground surface. Show in at least one project evidence of permanence with a five-year minimum age. Include in the project experience documentation for each project a brief project description, detail the size of the shafts, construction methods used during installation, methods used for wall stabilization, local soil conditions, actual construction time and contact information consisting of an individual’s name and current phone number. Contacts must be capable of verifying project participation.

A.1.2 Staff Experience

Submit contractor staff experience records of the on-site engineer, on-site supervisors, crew chiefs and drill operators, who will be assigned to the project. Provide for each staff record a summary of each individual's experience that is complete enough for the engineer to determine whether each individual has satisfied the following qualifications. Do not use consultants or manufacturer's representatives in order to meet the requirements of this section.

- On-site engineer - Assign an individual as principal in charge and the contractor's main contact who has at least five years of drilled shaft experience, at least one year of which is as an employee of the contractor in good standing, and who has completed at least one successful secant pile or tangent pile retaining wall project using a shaft size at least as large as the plans show.
- On-site supervisor - Assign an individual to supervise the work who has at least five years of drilled shaft experience, at least one year of which is as an employee of the contractor in good standing, and who has completed at least one successful secant pile or tangent pile retaining wall project using a shaft size at least as large as the plans show. Include at least one project completed in soil and groundwater conditions similar to those anticipated for this project.
- Crew chiefs and drill operators - Assign crew chiefs and drill operators who have at least five years of drilled shaft experience using equipment meeting the requirements in Section B.2, at least one year of which is as an employee of the contractor in good standing, and who has completed at least one successful secant pile or tangent pile retaining wall project using a shaft size at least as large as the plans show. Include at least one project completed in soil and groundwater conditions similar to those anticipated for this project.

List, as a minimum for each of the above individuals, three references of owners or engineers familiar with their work and provide address, phone, and e-mail contact information for each reference.

A.1.3 Equipment Requirements

Submit equipment cut sheets and descriptions to perform the work in this special provision that meet the requirements in subsection B.2.

A.2 Substitutions

The contractor may submit his own organization, staff and equipment to fulfill the requirements of subsections A.1.1, A.1.2, and A.1.3, as the drilling contractor or he may sublet to subcontractor. However, the organization approved that fulfills the requirements of subsection A.1.1 shall be the organization that performs the work in this special provision.

Request in writing to the engineer to provide substitute drilling contractor, staff or equipment not identified in the contractor's accepted drilling contractor qualification submittal. Substitute drilling contractor, staff or equipment must be equivalently or better qualified as determined by the engineer. Provide the experience and qualification information for the proposed substitute drilling contractor, staff or equipment as was originally provided in the drilling contractor's qualification submittal. The substitute drilling contractor, staff or equipment will not be permitted to start or continue any drilled foundation shaft work until the engineer confirms their qualifications and accepts the proposed drilling contractor, staff or equipment to work on the project.

Expect suspension by the engineer of drilled foundation shaft work if the contractor substitutes unqualified drilling contractor for accepted drilling contractor, unqualified personnel for accepted personnel, or unqualified equipment for accepted equipment, during construction. If work is suspended due to the substitution of unqualified drilling contractor, personnel, or equipment, the adjustment in contract time resulting from the suspension of work will not be allowed.

B Materials

B.1 General

Concrete, drilling fluid, reinforcement and formwork shall be in accordance to the requirements of QMP Drilled Shafts, standard specifications, as shown on the plans, and as hereinafter provided.

In the event that the provisions of other specification clauses cause ambiguity or conflict with these special provisions, these special provisions shall take precedence unless otherwise accepted by the engineer.

B.2 Equipment

Equipment used for excavation, drilling, and cleaning operations shall utilize a full depth temporary casing, installed using a hydraulic oscillator, and an overhead rotary drill rig to excavate inside the casing. The oscillator shall have adequate capacity; including power, torque, and down thrust to install and extract the full depth temporary casing to a depth equal to the maximum depth of the drilled shafts shown in the plans plus 15 feet, or plus 20 percent of the maximum depth shown in the plans, whichever is greater. The overhead rotary drill rig shall have adequate capacity, including power, torque and down thrust to excavate a hole within the casing to a depth equal to the maximum depth of the drilled shafts shown in the plans plus 15 feet, or plus 20 percent of the maximum depth shown in the plans, whichever is greater. Anticipate and make available at the job site all equipment necessary and essential to penetrate soft and hard soils (including bedrock), as well as cobbles and boulders and unidentified man-made obstructions, during the construction of the drilled shafts.

The oscillator must be capable of installing and extracting the full depth temporary casing by means of rotational or oscillatory motion and advancing the casing a minimum of 5 feet ahead of the excavation inside the casing until the shaft tip elevation is reached. No excavation ahead of the casing is permitted without the engineer's approval. Installation or removal of temporary casing by impact driving or vibration is not permitted. Advancing and installing the temporary casing by means of excavation ahead of the casing is not permitted.

Where hard soils, or other material including natural or man-made obstructions are encountered and cannot be drilled using conventional earth or rock augers, drilling buckets, and/or over reaming tools, provide drilling equipment including but not limited to rock core barrels, rock tools, down the hole hammer, chisels, air tools, or any other equipment necessary to advance the drilled shaft excavation to the depth and size as shown on the plans.

When applicable, or required by the engineer, provide equipment that produces a stable slurry suspension, mechanical agitation, and a pipeline or other safe methods of transporting the slurry to the drilled shaft and means of removing slurry for recovery and recirculation.

B.3 Casing

B.3.1 Temporary Casing

Temporary casing shall be steel; rigid, smooth, clean, watertight, and of ample strength to withstand both handling and installation stresses, the pressure of both concrete and the surrounding earth materials, and any live load surcharge pressures. Temporary casing must be of sufficient length to provide temporary casing the full length of excavation for all drilled shafts. Segmented casing, if used, must be segmented using flush bolted, casing joints. Telescopic casing is not permitted. The diameter of casing shall not be less than the specified size of the drilled shaft. All casing diameters shown on the plans refer to outside diameter (O.D.) dimensions.

B.4 Temporary Working Surface

Fill material, if required, to create a working surface for construction can be any suitable material approved by the engineer, containing no logs, stumps, brush, perishables, or other materials such as stone or broken concrete that may affect the drilling of the shafts. Material that will remain permanently shall consist only of appropriate embankment fill when placed in association with a roadway, conforming to the requirements of standard spec 207.2.

B.5 Reinforcing Steel and Spacers

Deformed reinforcing bars shall comply with the size, dimension, spacing, and details shown on the plans. In addition, they shall conform to AASHTO M31, Grade 60, and all the pertinent requirements of standard spec 505. Non-corrosive wheel type spacers and boots shall be used to properly position the reinforcing steel. All reinforcing steel shall be 100% wire tied between the vertical reinforcement and ties.

B.6 Crosshole Sonic Logging (CSL) Tubes

Access tubes for CSL testing shall be 2 inches I.D. schedule 40 steel pipe conforming to ASTM A 53, Grade A or B, Type E, F, or S. Pipes shall have a round, regular internal diameter, free of defects or obstructions; including any defect at the pipe joints, to permit the free unobstructed passage of source and receiver probes. Each tube or steel pipe shall be fitted with a watertight shoe onto the bottom and a removable cap at the top. Both, the shoe and cap shall be watertight and free from corrosion. The internal and external faces of the CSL tubes shall be clean to ensure passage of the probes and produce a good bond with the concrete.

Furnish neat cement grout for filling the access tubes at the completion of the CSL tests and acceptance of drilled shafts. Use grout that is a homogeneous mixture of water and Portland cement Type I/II or Type 1 L (MS). Do not exceed a water-cement ratio of 0.45. Provide grout with an unconfined compressive strength equal to the required compressive strength of the drilled shaft at 28 days when tested in accordance with ASTM C 1107.

B.7 Guide Walls

Provide steel plate template at each secant pile location to accurately locate and maintain the position of the wall as shown on the plans. Provide concrete, reinforcement and formwork for guide walls in accordance to the requirements of standard specs 501, 502 and 505 and as hereinafter provided.

B.8 Thermal Integrity Profiler (TIP) Wires

Install wires and provide other accessories described in “Thermal Integrity Profiler (TIP) Testing, Wall Secant Pile 59.06-Inch” elsewhere in these special provisions.

C Construction

C.1 Drilled Foundation Shaft Installation Plan

C.1.1 General

Prepare and submit a Drilled Foundation Shaft Installation Plan at the preconstruction meeting or at least 60 calendar days prior to beginning drilled shaft construction, whichever date is earlier. Submit the Drilled Foundation Shaft Installation Plan to the engineer for review. The engineer will accept the plan as submitted or return the plan with requested revisions. The engineer’s initial acceptance of the submitted plan is considered preliminary with final acceptance pending the successful completion and acceptance of the Trial Wall Panel Secant Pile included in the contract. Do not start any production drilled shaft installation until after the successful installation of the Trial Wall Panel Secant Pile 59.06-Inch and the engineer provides final acceptance of the Drilled Shaft Installation Plan. Acceptance of the installation plan does not relieve the contractor of responsibility for successful completion of the drilled shafts.

C.1.2 Subsurface Conditions

The subsurface conditions vary across the project site and are not necessarily the same along the length of structures containing secant pile walls. Anticipate the possibility of encountering loose permeable sand or gravel seams of substantial thickness interlaced randomly within glacial clay and till deposits, saturated soils and ground water, isolated cobbles or boulders, and nested cobbles and boulders while excavating and installing secant drilled shafts along the length of secant pile wall structures within this contract.

The contractor is strongly advised to obtain and review the “Geotechnical Exploration and Analysis Report, WisDOT Structure R-40-641” for which the secant pile wall is being constructed. See article “Geotechnical Investigation Information” in these special provisions for information on obtaining the geotechnical report.

C.1.3 Submittals

The Drilled Foundation Shaft Installation Plan shall include the following:

a. **Job Site Visit**. Acknowledge that the job site was visited to verify the site conditions with regard to entrance, access, overhead lines, subsurface features, clearing and grubbing, permitting, and collecting all information necessary to plan and execute the installation of the drilled shafts.

b. **Plan to Protect Existing Structures**. Outline the steps to be taken during drilled shaft installation to protect adjacent or nearby structures and utilities.

c. **Details of Environmental Control Procedures**. Provide plan to prevent loss of slurry or concrete into waterways, project areas, or protected areas. Detail method to ensure the compliance with state and federal environmental regulations during drilled shaft construction.

d. **List of Proposed Equipment**. Include details of proposed templates; number and sizes of cranes; number and size of oscillators; number and sizes of drills, include rotary torque, crowd force drills, and maximum drilling depth; diameter, length, and reach of augers, bailing buckets, guide walls, templates, and roller bits; cleaning equipment including cleaning buckets, submersible pumps, or air-lifted pumps; size of de-sanding equipment and slurry pumps; soil/rock-coring sampling equipment; inspecting drilled shaft apparatus; length and diameter of tremie or size of concrete pumps; size, length, and thickness of casings; over reaming equipment; and all relevant equipment necessary to complete the drilled shaft installation. Acceptance of the installation plan by the department does not relieve the contractor responsibility to provide other equipment, if necessary, to achieve satisfactory shaft installations meeting the requirements of this special provision.

e. **Details of Sequence of Drilled Shaft Installation and Time for Construction Operations**. Include a layout of the drilled shaft installation sequence. Provide a sequential list of installation steps and a time table of operations for installing full depth temporary casing, sealing casing, excavation and/or drilling time, drilled shaft cleaning, rock coring, drilled shaft inspection, concrete placement. Consider the effect of construction operations of one drilled shaft onto the adjacent drilled shaft(s) and utilities and avoid construction conflicts that will affect the quality or integrity of the completed work. Indicate when and what construction sequence modifications shall be performed under atypical situations, i.e, weekend or holiday shutdowns, unanticipated shutdowns due to equipment issues, etc.

f. **Proposed Drilled Shaft Installation Procedure(s)**. Provide details of the proposed shaft installation procedures, including coring or drilling boulders, rock, obstructions or steep sloping surfaces, when required, and meeting the minimum installation requirements set forth in subsection C.3. Method for identification of the competent or bearing material before finalizing the excavation. Method for monitoring verticality of the drilled shaft walls during excavation, and details of proposed corrective measures to be implemented for shafts out of tolerance. Details of the methods and means of preventing displacement of the casing and/or drilled shaft during installation.

g. **Details of Slurry Operations.** This is required if slurry is used to stabilize the bottom of the excavation within the temporary casing. Include slurry type, methods to mix, circulation, de-sanding, and test the slurry to comply with these special provisions.

h. **Inspection and Cleaning**. Methods to clean and inspect the drilled shaft excavation prior to reinforcement placement.

i. **Crosshole Sonic Logging (CSL).** Method to install and secure the CSL pipes to the reinforcing cage or steel core, along with the proposed selection of pipe and size.

j. **Details of Reinforcement Steel Placement During Construction**. Include methods to ensure cage centering, cover and proper elevation; proper cage orientation, cage integrity while lifted during placement, number of cranes, number of lift points, and number of spreader bars; number and location of bottom and side spacers; cage support during concrete placement, (including field modification details when the bottom of shaft is lower than plan, for both setting the cage and reinforcing the extended shaft beyond the cage); and tie downs during concrete placement.

k. **Concrete Placement Plan**. The purpose of the Concrete Placement Plan is to ensure that a sufficient quantity of concrete is at the job site or in transit to the job site so that the entire pour can be done without delay. Include location of the concrete plant, number of trucks, estimated delivery times, estimated time between trucks, and number of trucks at the site before placement begins. Indicate the use of tremie or concrete pump lines and details of the seal to be used at the bottom end of the tremie or concrete pump line. Breakdowns of concrete plants, trucks, or traffic problems shall be considered under this Concrete Placement Plan. The contractor shall be aware of, and account for, batch, travel, and concrete placement times. Include an estimate of the concrete placement time per drilled shaft. When applicable, detail excavation to grade and finishing of the drilled shafts.

l. **Casing Removal**. Include the details and means by which the contractor intends to remove full depth temporary casings and provide information about staged temporary casing removal when applicable.

m. **Methods of Handling and Disposal of Spoil Excavation, Waste Slurry, Waste Concrete, and Drilled Shaft Cutoffs**. Present sufficient details to the engineer to evaluate the adequacy and compliance of the contractor’s methods of disposal with the standard specifications, including all related environmental permits and local regulations.

n. **Other Information** requested on the plans or by the engineer.

o. **Reinforcing Steel Assembly and Installation Plan.** For shafts with a 4’-6” minimum nominal diameter and 40’-0” minimum length, prepare and submit the reinforcing steel assembly and installation plan. Reinforcing steel shop drawings, details of reinforcement placement, including bracing, centering, and lifting methods, and the method to assure the reinforcing cage position is maintained during construction, including use of bar boots and/or rebar cage base plates shall comply with the pertinent requirements of the specifications.

   The reinforcing steel assembly and installation plan shall include:

   1. Procedure and sequence of steel reinforcing bar cage assembly.
   2. The tie pattern, tie types and tie wire gages for all ties on permanent reinforcing and temporary bracing.
   3. Number and location of primary handling steel reinforcing bars used during lifting operations.
   4. Type and location of all steel reinforcing bar splices.
   5. Details and orientation of all internal cross-bracing, including a description of connections to the steel reinforcing bar cage.
   6. Description of how temporary bracing is to be removed.
   7. Location of support points during transportation.
   8. Cage weight and location of the center of gravity.
   9. Number and location of pick points used for lifting for installation, and for transport (if assembled off-site).
   10. Crane charts and a description and/or catalog cuts for all spreaders, blocks, sheaves and chockers used to equalize or control lifting loads.
   11. The sequence and minimum inclination angle at which intermediate belly rigging lines (if used) are released.
   12. Pick point loads at 0, 45, 60 and 90 degrees and at all intermediate stages of inclination where rigging lines are engaged or slackened.
   13. Methods and temporary supports required for cage splicing.
   14. For picks involving multiple cranes, the relative locations of the boom tips at various stages of lifting, along with corresponding net horizontal forces imposed on each crane.

p. **Details of Guide Wall Design and Installation.** Provide details of required guide wall design and construction.

C.1.4 Acceptance

The department will evaluate the Drilled Foundation Shaft Installation Plan for conformance with the requirements of these special provisions. Within 30 calendar days after receipt of the Drilled Foundation Shaft Installation Plan, the engineer will notify the contractor of the preliminary acceptance of the plan, or if additional information and/or changes are required. Any unacceptable part of the Installation Plan will require resubmission. The contractor must resubmit the drilled shaft installation plan for evaluation and review with the necessary changes or additional information provided. The engineer will provide a written notice of preliminary acceptance or rejection of contractor’s resubmitted Drilled Foundation Shaft Installation Plan within 30 calendar days after its receipt. The accepted contractor’s Drilled Foundation Shaft Installation Plan will become final after the successful completion and acceptance of the Trial Wall Panel Secant Pile and satisfactory drilled foundation shaft installation performance is demonstrated in the field.

After assessment or reassessment of the Drilled Foundation Shaft Installation Plan has been made and the engineer has granted preliminary acceptance, no changes to the plan can be made without written consent of the engineer.

C.2 Trial Wall Panel Secant Pile 59.06-Inch

After the Drilled Foundation Shaft Installation Plan has been preliminarily accepted, construct consecutive drilled shafts forming a non-production secant pile trial wall panel using the same crews and equipment that will be performing the drilled shaft production work. Construct in accordance with the Trial Wall Panel Secant Pile 59.06-Inch special provision and adhere to and demonstrate the adequacy of the accepted Drilled Foundation Shaft Installation Plan.

Construction of the Trial Wall Panel Secant Pile 59.06-Inch will be used to determine if the contractor's methods, equipment, personnel, and proposed procedures are effective to produce stable drilled shaft excavations and secant pile walls that meet the requirements of these special provisions. Perform all testing that will be required for production shafts as described elsewhere in the special provisions. With approval of the engineer, revise construction methods and equipment as necessary during this stage or at any time during the installation of production shafts to satisfactorily complete the secant pile wall construction in accordance with these special provisions.

In the event the contractor fails to demonstrate the adequacy of the drilled shaft installation procedure(s) or equipment during construction of the Trial Wall Panel Secant Pile 59.06-Inch the engineer will require appropriate modifications as may be necessary to produce acceptable results. Comply to satisfactorily demonstrate the adequacy of the proposed method(s) or equipment or construct additional trial wall panel secant pile shafts as indicated by the engineer at no additional cost to the department.

C.3 Drilled Shaft Installation

C.3.1 General

Carry out the work in accordance with the accepted Drilled Foundation Shaft Installation Plan and as demonstrated during installation of the Trial Wall Panel Secant Pile 59.06-Inch. The resulting installation plan shall include length of full depth temporary casing, details of the constituent materials of any drilling fluid or means used for stabilization of the bottom of the excavation, the method of inspection, details of the concrete design mix, concreting method, the minimum time between the completion of one shaft and the commencement of the next, and the pattern of construction.

Ensure that damage does not occur to the completed shafts as a result of work on adjacent shafts. Submit to the engineer a drilled shaft installation sequence. The proposed sequence and timing of shaft installation shall be such that the installation work will not cause any damage to adjacent shafts. The shaft installation shall not commence until acceptance of the engineer has been obtained.

C.3.2 Temporary Working Surface

Use a temporary working surface to provide a level surface at or above the top of shafts for drilling where needed.

C.3.3 Forcible Correction

Where shafts have not been positioned within the specified limits no method of forcible correction will be permitted.

C.3.4 Records

Keep a work record of all shafts installed. Give a copy of each day's record to the engineer within 24 hours of that day's work being completed. The engineer will review and agree to the daily record form format before drilled shaft work commences. Incorporate any comments by the engineer into the record form. Note all unexpected drilling or installation conditions in the records.

C.3.5 Methods of Drilled Shaft Installation

C.3.5.1 General

The temporary casing installation method and concrete placement in the wet using a tremie pipe shall be used to produce sound and durable drilled shafts free of defects. When a particular installation method is required in the special provisions, only that method of construction shall be used. If no particular method is specified for use, select and use one of the methods of construction as determined by the site conditions and needed to properly accomplish the work. Do not use the permanent casing method unless authorized by the engineer. Submit to the engineer for acceptance of the contractor's selected method of construction in the Drilled Shaft Installation Plan described in these special provisions.

Full length temporary casing with the use of water or slurry inside the temporary casing, is required for the installation of all drilled shafts on the project. The use of permanent casing method will not be permitted unless authorized by the engineer. The use of slurry without casing is not permitted. Full depth temporary casing shall be installed using hydraulic oscillating equipment specifically intended for temporary casing installation and extraction. Installation of full depth temporary casing by means of driving or vibrating is not permitted. Advancing and installing casing by means of excavation ahead of the casing is not permitted. During temporary casing installation and shaft excavation, the tip of the temporary casing shall be advanced a minimum of 5 feet ahead of the tip of the excavation, until the bottom of the excavation is reached.

After the temporary casing is in place, excavate inside the casing, while keeping the temporary casing full of water or slurry, as necessary, to stabilize the bottom of the excavation within the casing. Excavate to the planned shaft tip elevation using the wet installation method techniques described in subsection C.3.5.4 below. Clean the bottom of the excavation. Before extracting the temporary casing, ensure that the level of fresh concrete inside the casing is at such level that the pressure of its hydrostatic head displaces up and out the fluid trapped in the annular space between the casing and the drilled shaft wall.

C.3.5.2 Dry Installation Method

The dry method of shaft installation is not permitted.

C.3.5.3 Temporary Casing Installation Method

The temporary casing method of shaft installation consists of supporting the shaft excavation by means of full depth temporary casing that is advanced ahead of the excavation until the drilled shaft tip elevation is reached. Excavate, remove, and clean all accumulated loose material from within the cased excavation before placing the reinforcement cage and the shaft concrete in the wet excavation. Do not place concrete into the wet excavation using free fall. Concrete must be placed under water in wet excavation using proper tremie procedures to direct the concrete under the water inside the shaft excavation and displace the water.

C.3.5.4 Wet Installation Method

The wet installation method consists of drilled shaft installation by means of full depth temporary casing in conjunction with the use of slurry, drilling fluid, or water that maintains a sufficient head of not less than 5 feet and maintains stability against heave and blow-in in the bottom of the excavation. Use the wet installation method for all drilled foundation shafts in the contract. When using the wet method below the groundwater table, all drilled shaft operations shall be accomplished while maintaining a positive head of fluid, not less than 5 feet, and of sufficient depth above the water table to avoid heaving or blow-in of the bottom of the excavation.

C.3.5.5 Permanent Casing Method

Do not use the permanent casing method.

C.3.6 Guide Walls

The design and construction of guide walls is the responsibility of the contractor and shall take into account the shaft size, ground conditions and equipment used on site to ensure stability and control tolerances. The minimum depth of concrete guide walls shall be 4 feet, and the minimum shoulder width shall be 1.5 feet. Larger size guide walls may be required if the surface soils are loose or otherwise of insufficient strength to prevent movement of the guide walls during construction or if drilled shafts are placed using minimum sized guide walls and do not meet required positional tolerances.

C.3.7 Excavations

C.3.7.1 General

Excavations required for the secant pile walls shall be performed through whatever materials are encountered to the dimensions and elevations shown in the plans, or as directed by the engineer. The excavation and installation method shall be suitable for the intended results and materials encountered. Blasting is not permitted.

Maintain a construction log during the secant pile wall excavation. The construction log will include information such as ground elevation, ground water elevation, sequence number, method of installation, machines and tools employed, drilling fluids employed, drilling times, excavated materials and their particular elevations, soil/rock-cores samples and their particular elevations, rock sockets and their elevation, bells plus their size and elevations, and all other information relevant to the excavation process that will assist the engineer in evaluating the foundation. Information shall also include proposed methods for disposal of excavated material and slurry in accordance to state and local environmental regulations, codes and ordinances, the standard specifications, or as directed by the engineer.

C.3.7.2 Protection of Existing Structures

Take all reasonable precautions to prevent damage to existing structures and utilities. These measures shall include, but are not limited to, subsidence control during installation of temporary casings or excavation inside temporary casings.

Where secant pile walls are to be installed in conjunction with embankment placement, the secant pile walls shall be constructed after placement of the fill, unless otherwise shown in the plans, or accepted by the engineer. If fill is required to be placed after completion of the secant pile walls, the footing cap shall be done, as closely as possible, after the fill is in place and compacted to final grade leaving only the space necessary for the construction of the cap.

C.3.7.3 Drilled Shaft Excavation

Provide the necessary equipment to remove and dispose of all materials encountered in the drilled shaft excavation to the dimension and elevation shown on the plans, or as directed by the engineer. Contractor's excavation equipment may include, but is not limited to, earth augers and rotary drills designed to work within full depth temporary casing. Unless otherwise shown on the plans, the drilled shaft excavations shall be vertical bored holes extending from the ground surface down to design tip elevation.

C.3.7.4 Templates and Guide Walls

Templates are required for installation of all secant pile wall foundations to aid in achieving position and alignment of the installed drilled shafts within specified tolerances. Guide walls are also required for the installation of all secant pile drilled shafts to aid in achieving specified tolerances for location and verticality of the installed drilled shafts.

C.3.7.5 Obstructions

Obstructions are defined as man-made objects that when encountered, stop or significantly impede downward progress of the temporary casing installation or excavation to less than 12-inches for 60 minutes or longer under maximum applied thrust and torque. Obstructions include man-made objects and may include, but are not limited to old concrete foundations, piling, abandoned utilities or buried pavements. Obstructions are further classified as "known obstructions" which are identified on the plans, and "unknown obstructions" that may be encountered but are not identified on the plans.

Employ special tools and/or procedures as necessary when obstructions are encountered and the contractor cannot advance the excavation more than 12-inches in 60 minutes using conventional rock augers fitted with teeth, drilling buckets, or under reaming tools operating at maximum power, torque, and down thrust. Special procedures and tools that may be required include, but are not limited to; chisels, breakers, core barrels, air hammer tools, and hand excavation. Other methods for obstruction removal such as temporary casing or hole diameter increase can be employed to aid in the removal if acceptable to the engineer. Blasting is not permitted.

Natural deposits, including boulders or cobbles (individual or nested), and other deposits may be encountered that impede the installation and advancement of the temporary casing and excavation to less than 12-inches for 60 minutes or longer as noted above for obstructions. Natural deposits, regardless of makeup, depth, configuration, and consistency are not classified as obstructions as defined in this special provision or the special provision Obstructions Drilled Foundation Shaft included in the contract.

C.3.7.6 Lost Tools

Drilling tools that are lost in the excavation shall not be considered obstructions and shall be promptly removed. All costs due to removal of lost tools shall be borne by the contractor including costs associated with hole degradation during removal operations or time while the hole remains open.

C.3.7.7 Inspections and Cleanliness of Excavation

Provide the details of drilled shaft inspection and cleanliness within the Drilled Foundation Shaft Installation Plan, required by subsection C.1.3 of this specification. Provide equipment and tools for checking the dimensions and alignment of each drilled shaft excavation, and coordinate schedules for inspection of the excavation with the engineer. Determine dimensions, alignment, and final depth of the drilled shafts after final cleaning. Provide a shaft inspection device (e.g., GPE SID, PDI SQUID, etc) to be used to inspect the cleanliness of shaft bottoms and quantitatively assess the depth of sediment after rebar placement and immediately prior to concrete placement. When applicable, provide visual confirmation with a camera or safe access and egress to the engineer for inspection of the walls and bottom of the drilled shaft excavation prior to placement of the rebar cage or steel core section and concrete. After the drilled shaft excavation has been prepared for inspection, notify the engineer. The cleanliness and the bearing surface of the drilled shafts will be evaluated and accepted by the engineer. Unless the engineer specifies otherwise, the contractor's cleaning operation shall be considered sufficient when no more that 50 percent of the bottom area of each shaft has less than 1/2-inch of sediment or debris at the time of hole acceptance just prior to steel positioning and concrete placement. The

maximum depth of sediment or any debris at any location on the bottom of the shaft shall not exceed 1 1/2-inch at the time of concrete placement.

C.3.7.8 Safety

Do not permit any worker to enter the drilled foundation shaft excavation for any reason unless a suitable casing has been installed, the water level has been lowered and stabilized below the level to be occupied, and suitable safety equipment and procedures have been provided to the personnel entering the excavation which includes OSHA certification for confined-entry-space.

C.3.7.9 Record Information

Provide to the department the drilled shaft excavation records and report any unusual observation to the engineer within 8 hours of discovery. Submit a draft of this form for each completed drilled shaft within 24 hours of shaft completion, and submit the final form within 2 weeks. Submit relevant information on a daily basis, or more frequently when variations occur, or as otherwise required by the engineer.

Report the drilled shaft construction progress in accordance to “Records and Forms” Drilled Shafts: Publication No. FHWA – GEC 010, Section 19.5 and Appendix F, pages F-1 through F-16.

C.3.8 Placement of Reinforcing Steel Cage

Prior to placement of the reinforcing steel and concrete, if slurry fluid was employed during the installation of the drilled shaft, test the slurry for compliance with this specification as described in the QMP Drilled Shafts special provision. Slurry Tests shall be performed along the shaft and at the bottom of the shaft. Adjust the slurry properties as necessary to meet the specifications.

Prior to placement of the reinforcing steel and concrete, ensure that the C.3.6.6 cleanliness requirements are met.

Concrete or non-corrosive spacers shall be used at sufficient intervals not exceeding 10 feet along the reinforcement cage or the steel core. A minimum of 4 spacers shall be spaced evenly around the circumference of any shaft with a maximum space around the shaft circumference of 30 inches between any spacer (i.e. at any given level a 59.06-inch diameter shaft shall have 7 spacers). The first spacers shall be placed 1.5 feet from the bottom of the shaft with successive spacers at maximum intervals of 10 feet along the shaft. Spacers shall be of an appropriate diameter wheel to provide minimum clearance shown on the plans between the shaft excavation walls and the steel reinforcement.

C.3.9 CSL Access Tube Installation

Drilled shafts must be fitted with CSL test tubes to evaluate their integrity as shown on the plans.

Install the access tubes or pipes as nearly parallel and far as possible from the longitudinal bars. The number of tubes to be installed per each drilled shaft diameter is as indicated in the table below:

Drilled Shaft Diameter	Number of CSL Tubes	Tube Spacing
59.06-inches	5 minimum	As shown in plans

Securely attach the tubes to the interior of the reinforcement cage with a minimum concrete cover of three inches. The tubes may be attached to the exterior of the cage when accepted by the engineer provided the minimum cover requirement of 3-inches over the tubes shall be maintained. In all cases, the tubes shall be as near to vertical and parallel as possible.

Extend the tubes from the bottom of the drilled shaft to at least 3-feet above the top of the drilled shaft, or 2-feet above the ground surface for shafts with cut-off below the ground surface. The tubes must be watertight and capped to prevent concrete or debris from entering during manipulation of the cage and concreting. Care must be taken during lifting and lowering the steel reinforcement so as not to damage the tubes. Fill the CSL tubes with potable water prior to concrete placement. For production shafts and upon completion of the CSL tests and acceptance of the shafts, remove all the water from the access tubes or drilled holes and fill them with an approved grout.

C.3.10 Concrete Placement

C.3.10.1 General

Do not prime pump within the drilled shaft. Place concrete continuously once concrete placement is started. No intermediate construction or cold joints are permitted within a single drilled foundation shaft.

Test the concrete delivered to the job site for compliance with the QMP Drilled Shafts special provisions, the standard specifications and these special provisions. Record the actual volume of concrete placed against the theoretical volume vs depth at depth intervals not exceeding the shaft diameter.

C.3.10.2 Concrete Placement Time

Ensure excavation inspection occurs no later than 24 hours after excavation is complete. Place concrete within three hours after excavation inspection and approval unless otherwise directed by the engineer. If the concrete is not placed within this time frame, the excavation must be re-inspected and accepted by the engineer prior to concrete placement.

C.3.10.3 Concrete Placement by Free Fall

Concrete placement within drilled shafts by free fall is not permitted.

C.3.10.4 Concrete Placement by Tremie Pipes

Use tremie pipes to place the concrete inside the excavation. Keep the discharge end of the tremie a minimum of 7-feet below the level of the fresh concrete already placed inside the excavation to maintain a seal. The concrete shall flow into position by pressure through a steel tremie with a minimum diameter of 10-inches. Seal the bottom of the tremie using one-way flap valve, before it is lowered into the wet excavation. If water/slurry enters the tremie pipe after concrete pouring has started, the tremie must be withdrawn, cleaned, resealed, and pouring restarted. If for some reason, the tremie is raised out of the fluid concrete or the concrete inside the drilled shaft drops down contaminating the tremie, completely remove and clean the tremie, then replace the seal at the bottom of the tremie, and lower the tremie back as far below as possible into the already placed concrete.

C.3.10.5 Concrete Placement by Concrete Pumps

Concrete pumps and concrete lines can be used to place concrete in drilled shafts rapidly or to deliver the concrete from a distant location. However, due to the need to disassemble the pump line to allow the removal of casing sections and potential air pockets, disruption in concrete flow, the concrete pump placement directly within the shaft is not permitted on this project. The pump must discharge the concrete into a minimum 10-inch diameter steel tremie with a bottom one-way flap valve.

All pump lines, tremie pipes, and their connections shall be watertight and must guide the concrete to the discharge point at the center of the rebar cage or steel core and drilled shaft excavation. The pump line may be flexible; however, inside the shaft use a minimum 10-inch diameter steel tremie pipe that can deliver the concrete in an uninterrupted manner. Keep the bottom of the tremie or discharge orifice 7-feet below the surface of fluid concrete already placed to avoid sudden jumping of the pump line out of the excavation. Concreting shall continue until over pouring is evident at the top of the drilled shaft and until dark gray concrete (acceptable concrete) can be distinguished from the drilling fluid.

C.3.10.6 Casting Level

Over pour concrete above the top of shaft cut-off level to ensure that all concrete at and below cut-off level is homogeneous and free of laitance and deleterious materials. Account for room and access requirements when cut-off level is below grade to adequately perform this task and protect adjacent ground from caving in.

C.3.10.7 Allowable Seepage Through Secant Pile Walls

Seepage, but not soil migration, is allowed through secant pile walls. Install weep holes and geocomposite wall drains as the plans show.

C.3.11 Construction Tolerances for Individual Shafts

Drilled shaft excavations or completed drilled shafts constructed out of the tolerance are unacceptable. The contractor is responsible for correcting to the satisfaction of the engineer all unacceptable work. Materials, construction, work, engineering analysis, and redesign necessary to complete corrections to out-of-tolerance excavations or completed drilled shafts shall be furnished to the department without either cost or time extension for the project. Comply with the following construction tolerances:

a. The front face (face closest to the cast-in-place facing) of the drilled shaft shall be initially positioned in the theoretical location as shown on the plans. The final, as constructed position of the front face of the drilled shaft shall be within a maximum of 2 inches in any direction from the theoretical position shown on the plans, unless otherwise permitted by the engineer prior to construction.

b. The vertical alignment of the drilled shaft excavation shall not vary by more than 1/16 inch per foot from plumb vertical.

c. Tolerances specified in a. and b. above are not additive. In no case shall there be a gap between secant piles. In the case that there is a gap in secant piles, develop a remedial action and submit to the engineer. Implement the engineer-accepted remedial action plan at no additional cost to the department.

d. Any gap that occurs between adjacent secant drilled shafts shall be left unfilled.

e. If the wall is installed outside these tolerances affecting the design and appearance of the wall, develop and carry out immediate remedial measures subject to the acceptance of the engineer, at no additional cost to the department.

f. The diameter of the installed drilled shaft shall not be less than the diameter of the drilled shaft shown on the plans. Any conflicts due to a casing that is greater in diameter than the plan shaft diameter shall be remedied by the contractor. No additional compensation or schedule time shall be granted to the contractor for resolving any conflicts due to oversized casings. Employ equipment and methods of excavation to complete the drilled shaft excavation to a planar bottom, and the cutting edges of the equipment used during the excavation shall be normal to equipment's vertical axis within a tolerance of 3/8-inch per foot of diameter. The bottom of the drilled shaft excavation shall be normal to the axis of the drilled shaft within ¾-inch per foot of drilled shaft diameter.

h. Tolerances outlined in sections a. to e. herein shall be checked and finally met by the contractor prior to placement of the reinforced rebar cage or steel core inside the shaft hole.

i. Ensure the drilled shaft casing avoids conflicting with the reinforced rebar cage in adjacent shafts by ensuring that the provisions of C.3.11.b are never violated. If these provisions are violated, rectify the shaft in accordance with subsection C.3.13.

i. After the concrete is poured, the top elevation of the installed drilled shaft shall be within 1-inch of the top elevation of the corresponding drilled shaft on the plans, and the top of the reinforcing steel cage shall be within the positional tolerance shown on the plans. The center of the reinforcing cage shall be the center of the drilled shaft.

j. Upon excavation of the wall shafts, any concrete present due to blowouts or protrusions that will not allow for a minimum 4-inch cast-in-place facing thickness over the face of the shafts, shall be removed at the contractor’s expense. Cast-in-place facing alignment shall remain, as shown on the plans. Concrete removal if required, shall be done in such a manner as to not cause damage to the remaining portions of the shaft. This concrete removal criteria applies to all shafts installed and excavated in this contract.

k. The acceptance of the shaft’s tolerances shall be granted only after the excavation of the walls.

C.3.12 Non Destructive Testing Program

Perform CSLand TIP testing as specified elsewhere in the special provisions, and as directed by the engineer.

C.3.13 Acceptance for Constructed Drilled Shafts

C.3.13.1 General

Any drilled foundation shafts that are not constructed and installed in accordance to these special provisions will be rejected by the engineer. Rejected shafts shall be replaced or remediated by the contractor using methods and procedures subject to the acceptance of the engineer before beginning replacement or remediation. If required to remediate rejected shafts, shaft replacement, shaft repair, or the cost of constructing additional shafts, will be at no additional cost to the department and no additional time will be added to the contract

In the event that a shaft or shafts are rejected, work on remaining drilled shafts in the contract cannot continue until the contractor re-visits and re-submits a revised drilled shaft installation plan and the revised plan is accepted by the engineer. The revised plan must address any construction issues that resulted in or contributed to the reason(s) for which the deficient shaft(s) were rejected. No additional time will be added to the contract for the time required to revise and accept the revised drilled shaft installation plan.

C.3.13.2 Based on Specifications

The department will only accept drilled foundation shafts that conform to these special provisions. Drilled foundation shafts and related work constructed in any manner that disregards any specified requirement will not be accepted. This includes:

a. Drilled foundation shaft excavations constructed out-of-tolerance, as specified in this specification. When repair to an out-of-tolerance shaft is possible as determined by the engineer, fix the drilled shaft to meet the tolerances before the contractor is permitted to proceed further with any drilled shaft construction. All repairs must be acceptable to the engineer before the contractor may resume the drilled shaft work.

b. Excavation of a drilled foundation shaft with slurry not conforming to the QMP Drilled Shafts special provision.

c. Drilled foundation shafts exhibiting cuttings from slurry at the drilled shaft bottom; showing soft, incomplete, or unclean bottoms; or presenting side sloughing and sedimentation at the bottom.

d. Drilled foundation shafts with honeycomb intrusions or concrete in which the fines have been washed out or water channels in concrete.

e. Horizontal discontinuity or necking in the drilled foundation shaft concrete.

f. Quarter-moon-shaped soil intrusions on the sides of a drilled foundation shaft.

g. Folded-in debris inside a drilled foundation shaft.

h. Drilled foundation shafts for which the mix design has been altered without the acceptance of the engineer, including the unauthorized addition of water to a mix design to bring it to a certain slump.

i. Drilled foundation shafts constructed in a manner where concrete placement has failed to meet the required time requirements, placement tolerances, or the methods of installation did not have the engineer's acceptance.

j. Drilled foundation shafts constructed with concrete not meeting the minimum 28-day compressive strength requirement shown on the plans.

C.3.13.3 Based on the CSL or TIP Tests

Reports for the various tests performed elsewhere in the special provisions will be reviewed by the engineer. If the reports indicate significant anomalies or defects, the engineer will direct the contractor to core the shaft(s) at the location(s) of the defect or anomaly. The coring shall be a 2.5" inner diameter standard core barrel, but no smaller than an NX-sized double tube core barrel. The engineer will determine the number of cores, length(s), location(s), and testing methodology. If the coring or core sample testing results confirm the presence of significant anomalies or defects, the drilled shaft will be determined to be unacceptable and rejected by the engineer. Upon rejection of the shaft(s), submit a remedial action plan to the engineer for correcting the rejected work. The remedial action plan shall include detailed shaft repair or replacement procedures, if necessary, and will be subject to acceptance by the engineer. Any modifications to the drilled shaft, load transfer mechanisms, and elements affected by the proposed remedial actions will require calculations and working drawings, and shall be made and stamped by a professional engineer, registered in the state of Wisconsin.

In the event that the engineer directs the contractor to core through the concrete and the coring and associated core sample tests confirm the presence of anomalies or defects, the cost of coring, hole closure, core sample tests, and all labor and materials to perform the accepted remedial actions shall be provided at no additional cost to the department and with no extension of the contract time originally granted.

In the event that the engineer directs the contractor to core through the concrete and the core or core sample tests do not confirm the presence of anomalies or defects, the cost of the coring, hole closure and associated testing shall be borne by the department, but with no extension of the contract time originally granted.

Frequent defects, as determined by the engineer will result in a re-evaluation of the contractor's installation procedure, and depending on the frequency and type of defect, the engineer may require a change or modification to the contractor's procedure.

D Measurement

The department will measure Wall Secant Pile 59.06-Inch of individual shafts by the linear foot, acceptably completed. Longer shafts, larger shaft diameters, additional excavation, and additional concrete placed beyond the limits of the plan dimensions will not be measured for payment unless authorized and agreed to in advance of placement by the engineer.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.4005	Wall Secant Pile 59.06-Inch	LF

Payment is full compensation for preparing all submittals, including the Drilled Foundation Shaft Installation Plan; furnishing, installing, and removing full depth temporary casing, guide walls, placing and removing temporary working surfaces, drilling fluids, documentation, clearing or removal of surface obstructions, clearing or removal of known man-made or natural obstructions; removal of concrete due to oversizing, blowouts or protrusions from the face of the shafts; drilling the shafts, handling and disposal of the excavated, augered and cored soils, and any drilling fluids; lifting and positioning the reinforcement steel cage, including any required wheel type spacers, boots, internal bracing of the reinforcement steel cage, and any other temporary lifting supports; furnishing and placing the concrete for the drilled shafts to the dimensions and elevations as shown on the plans, including removal of over pour concrete; and furnishing, installing and closing the crosshole logging tubes.

Reinforcement bars are measured and paid under the bid item Bar Steel Reinforcement HS Bridges.

Removal of unknown man-made subsurface obstructions for the Wall Secant Pile (diameter) pay items will be measured and paid for separately under the bid item, Obstructions Wall Secant Pile, included in the contract.

284. Wall Secant Pile 59.06-Inch UPRR, Item SPV.0090.4006.

A Description

This special provision describes installing overlapping drilled shafts to form a secant pile retaining wall as shown on the plans.

Do not start work on any production wall secant piles until acceptance of the Drilling Contractor Qualification submittal, successful completion and acceptance of the Trial Wall Panel Secant Pile 59.06-inch UPRR and the acceptance of the Drilled Foundation Shaft Installation Plan.

A.1 Qualifications of the Contractor

A.1.1 Drilling Contractor Qualification Submittal

Submit the drilling contractor's qualifications, staff experience records, and equipment cut sheets and descriptions that will perform the work in this special provision at the preconstruction meeting or 21 calendar days prior to the start of wall secant pile construction, whichever date is earlier. The engineer will accept or reject the drilling contractor's qualifications, staff experience records, and equipment descriptions within 7 calendar days after receipt of the submission.

The drilling contractor performing the work described in these special provisions must have wall secant pile project(s) successfully completed similar to those that the plans show using equipment meeting the requirements in Section B.2 within the last five years. Submit a list outlining the drilling contractor's experience on at least five projects where they have successfully completed drilled shaft construction, including one project completed within the last five years. A minimum of three of the five projects must be wall secant or tangent pile wall projects. A separate wall project is defined as a secant or tangent pile wall or walls having a total of at least 2000 square feet of total wall area. Include in the project experience at least one project completed in soil and groundwater conditions similar to that anticipated for this project. Include in the project experience advancing the drilled shafts with a shaft size at least as large as the plans show to a depth of at least 60 feet below the original ground surface. Show in at least one project evidence of permanence with a five-year minimum age. Include in the project experience documentation for each project a brief project description, detail the size of the shafts, construction methods used during installation, methods used for wall stabilization, local soil conditions, actual construction time and contact information consisting of an individual's name and current phone number. Contacts must be capable of verifying project participation.

A.1.2 Staff Experience

Submit contractor staff experience records of the on-site engineer, on-site supervisors, crew chiefs and drill operators, who will be assigned to the project. Provide for each staff record a summary of each individual's experience that is complete enough for the engineer to determine whether each individual has satisfied the following qualifications. Do not use consultants or manufacturer's representatives in order to meet the requirements of this section.

- On-site engineer - Assign an individual as principal in charge and the contractor's main contact who has at least five years of drilled shaft experience, at least one year of which is as an employee of the contractor in good standing, and who has completed at least one successful secant pile or tangent pile retaining wall project using a shaft size at least as large as the plans show.
- On-site supervisor - Assign an individual to supervise the work who has at least five years of drilled shaft experience, at least one year of which is as an employee of the contractor in good standing, and who has completed at least one successful secant pile or tangent pile retaining wall project using a shaft size at least as large as the plans show. Include at least one project completed in soil and groundwater conditions similar to those anticipated for this project.
- Crew chiefs and drill operators - Assign crew chiefs and drill operators who have at least five years of drilled shaft experience using equipment meeting the requirements in Section B.2, at least one year of which is as an employee of the contractor in good standing, and who has completed at least one successful secant pile or tangent pile retaining wall project using a shaft size at least as large as the plans show. Include at least one project completed in soil and groundwater conditions similar to those anticipated for this project.

List, as a minimum for each of the above individuals, three references of owners or engineers familiar with their work and provide address, phone, and e-mail contact information for each reference.

A.1.3 Equipment Requirements

Submit equipment cut sheets and descriptions to perform the work in this special provision that meet the requirements in subsection B.2.

A.2 Substitutions

The contractor may submit his own organization, staff and equipment to fulfill the requirements of subsections A.1.1, A.1.2, and A.1.3, as the drilling contractor or he may sublet to subcontractor. However, the organization approved that fulfills the requirements of subsection A.1.1 shall be the organization that performs the work in this special provision.

Request in writing to the engineer to provide substitute drilling contractor, staff or equipment not identified in the contractor's accepted drilling contractor qualification submittal. Substitute drilling contractor, staff or equipment must be equivalently or better qualified as determined by the engineer. Provide the experience and qualification information for the proposed substitute drilling contractor, staff or equipment as was originally provided in the drilling contractor's qualification submittal. The substitute drilling contractor, staff or equipment will not be permitted to start or continue any drilled foundation shaft work until the engineer confirms their qualifications and accepts the proposed drilling contractor, staff or equipment to work on the project.

Expect suspension by the engineer of drilled foundation shaft work if the contractor substitutes unqualified drilling contractor for accepted drilling contractor, unqualified personnel for accepted personnel, or unqualified equipment for accepted equipment, during construction. If work is suspended due to the substitution of unqualified drilling contractor, personnel, or equipment, the adjustment in contract time resulting from the suspension of work will not be allowed.

B Materials

B.1 General

Concrete, drilling fluid, reinforcement and formwork shall be in accordance to the requirements of QMP Drilled Shafts, standard specifications, special provisions, as shown on the plans, and as hereinafter provided. Provide concrete meeting the requirements of Concrete Masonry Bridges UPRR except as modified herein.

In the event that the provisions of other specification clauses cause ambiguity or conflict with these special provisions, these special provisions shall take precedence unless otherwise accepted by the engineer.

B.2 Equipment

Equipment used for excavation, drilling, and cleaning operations shall utilize a full depth temporary casing, installed using a hydraulic oscillator, and an overhead rotary drill rig to excavate inside the casing. The oscillator shall have adequate capacity; including power, torque, and down thrust to install and extract the full depth temporary casing to a depth equal to the maximum depth of the drilled shafts shown in the plans plus 15 feet, or plus 20 percent of the maximum depth shown in the plans, whichever is greater. The overhead rotary drill rig shall have adequate capacity, including power, torque and down thrust to excavate a hole within the casing to a depth equal to the maximum depth of the drilled shafts shown in the plans plus 15 feet, or plus 20 percent of the maximum depth shown in the plans, whichever is greater. Anticipate and make available at the job site all equipment necessary and essential to penetrate soft and hard soils (including bedrock), as well as cobbles and boulders and unidentified man-made obstructions, during the construction of the drilled shafts.

The oscillator must be capable of installing and extracting the full depth temporary casing by means of rotational or oscillatory motion and advancing the casing a minimum of 5 feet ahead of the excavation inside the casing until the shaft tip elevation is reached. No excavation ahead of the casing is permitted without the engineer's, and the UPRR engineer's if applicable, approval. Installation or removal of temporary casing by impact driving or vibration is not permitted. Advancing and installing the temporary casing by means of excavation ahead of the casing is not permitted.

Where hard soils, or other material including natural or man-made obstructions are encountered and cannot be drilled using conventional earth or rock augers, drilling buckets, and/or over reaming tools, provide drilling equipment including but not limited to rock core barrels, rock tools, down the hole hammer, chisels, air tools, or any other equipment necessary to advance the drilled shaft excavation to the depth and size as shown on the plans.

When applicable, or required by the engineer, and the UPRR engineer if applicable, provide equipment that produces a stable slurry suspension, mechanical agitation, and a pipeline or other safe methods of transporting the slurry to the drilled shaft and means of removing slurry for recovery and recirculation.

B.3 Casing

B.3.1 Temporary Casing

Temporary casing shall be steel; rigid, smooth, clean, watertight, and of ample strength to withstand both handling and installation stresses, the pressure of both concrete and the surrounding earth materials, and any live load surcharge pressures, (including Cooper E80 surcharge pressures for UPRR drilled shafts). Temporary casing must be of sufficient length to provide temporary casing the full length of excavation for all drilled shafts. Segmented casing, if used, must be segmented using flush bolted, casing joints. Telescopic casing is not permitted. The diameter of casing shall not be less than the specified size of the drilled shaft. All casing diameters shown on the plans refer to outside diameter (O.D.) dimensions.

B.4 Temporary Working Surface

Fill material, if required, to create a working surface for construction can be any suitable material approved by the engineer, and the UPRR engineer if applicable, containing no logs, stumps, brush, perishables, or other materials such as stone or broken concrete that may affect the drilling of the shafts. Material that will remain permanently shall consist only of appropriate embankment fill when placed in association with a roadway, conforming to the requirements of standard spec 207.2.

B.5 Reinforcing Steel and Spacers

Deformed reinforcing bars shall comply with the size, dimension, spacing, and details shown on the plans. In addition, they shall conform to AASHTO M31, Grade 60, and all the pertinent requirements of standard spec 505. Non-corrosive wheel type spacers and boots shall be used to properly position the reinforcing steel. All reinforcing steel shall be 100% wire tied between the vertical reinforcement and ties.

B.6 Crosshole Sonic Logging (CSL) Tubes

Access tubes for CSL testing shall be 2 inches I.D. schedule 40 steel pipe conforming to ASTM A 53, Grade A or B, Type E, F, or S. Pipes shall have a round, regular internal diameter, free of defects or obstructions; including any defect at the pipe joints, to permit the free unobstructed passage of source and receiver probes. Each tube or steel pipe shall be fitted with a watertight shoe onto the bottom and a removable cap at the top. Both, the shoe and cap shall be watertight and free from corrosion. The internal and external faces of the CSL tubes shall be clean to ensure passage of the probes and produce a good bond with the concrete.

Furnish neat cement grout for filling the access tubes at the completion of the CSL tests and acceptance of drilled shafts. Use grout that is a homogeneous mixture of water and Portland cement Type I/II. Do not exceed a water-cement ratio of 0.45. Provide grout with an unconfined compressive strength equal to the required compressive strength of the drilled shaft at 28 days when tested in accordance with ASTM C 1107.

B.7 Guide Walls

Provide steel plate template at each secant pile location to accurately locate and maintain the position of the wall as shown on the plans. Provide concrete, reinforcement and formwork for guide walls in accordance to the requirements of standard specs 501, 502 and 505 and as hereinafter provided.

B.8 Thermal Integrity Profiler (TIP) Wires

Install wires and provide other accessories described in “Thermal Integrity Profiler (TIP) Testing, Wall Secant Pile 59.06-Inch” elsewhere in these special provisions.

C Construction

C.1 Drilled Foundation Shaft Installation Plan

C.1.1 General

Prepare and submit a Drilled Foundation Shaft Installation Plan at the preconstruction meeting or at least 60 calendar days prior to beginning drilled shaft construction, whichever date is earlier. Submit the Drilled Foundation Shaft Installation Plan to the engineer and the UPRR engineer for review. The engineer and the UPRR engineer will accept the plan as submitted or return the plan with requested revisions. The engineer’s and the UPRR engineer’s initial acceptance of the submitted plan is considered preliminary with final acceptance pending the successful completion and acceptance of the Trial Wall Panel Secant Pile included in the contract. Do not start any production drilled shaft installation until after the successful installation of the Trial Wall Panel Secant Pile 59.06-Inch UPRR and the engineer and the UPRR engineer provides final acceptance of the Drilled Shaft Installation Plan. Acceptance of the installation plan does not relieve the contractor of responsibility for successful completion of the drilled shafts.

C.1.2 Subsurface Conditions

The subsurface conditions vary across the project site and are not necessarily the same along the length of structures containing secant pile walls. Anticipate the possibility of encountering loose permeable sand or gravel seams of substantial thickness interlaced randomly within glacial clay and till deposits, saturated soils and ground water, isolated cobbles or boulders, and nested cobbles and boulders while excavating and installing secant drilled shafts along the length of secant pile wall structures within this contract.

The contractor is strongly advised to obtain and review the “Geotechnical Exploration and Analysis Report, WisDOT Structure B-40-921, UPRR over I-43” for which the secant pile wall is being constructed. See article “Geotechnical Investigation Information” in these special provisions for information on obtaining the geotechnical report.

C.1.3 Submittals

The Drilled Foundation Shaft Installation Plan shall include the following:

a. **Job Site Visit**. Acknowledge that the job site was visited to verify the site conditions with regard to entrance, access, overhead lines, subsurface features, clearing and grubbing, permitting, and collecting all information necessary to plan and execute the installation of the drilled shafts.

b. **Plan to Protect Existing Structures**. Outline the steps to be taken during drilled shaft installation to protect adjacent or nearby structures and utilities.

c. **Details of Environmental Control Procedures**. Provide plan to prevent loss of slurry or concrete into waterways, project areas, or protected areas. Detail method to ensure the compliance with state and federal environmental regulations during drilled shaft construction.

d. **List of Proposed Equipment**. Include details of proposed templates; number and sizes of cranes; number and size of oscillators; number and sizes of drills, include rotary torque, crowd force drills, and maximum drilling depth; diameter, length, and reach of augers, bailing buckets, guide walls, templates, and roller bits; cleaning equipment including cleaning buckets, submersible pumps, or air-lifted pumps; size of de-sanding equipment and slurry pumps; soil/rock-coring sampling equipment; inspecting drilled shaft apparatus; length and diameter of tremie or size of concrete pumps; size, length, and thickness of casings; over reaming equipment; and all relevant equipment necessary to complete the drilled shaft installation. Acceptance of the installation plan by the department does not

relieve the contractor responsibility to provide other equipment, if necessary, to achieve satisfactory shaft installations meeting the requirements of this special provision.

e. **Details of Sequence of Drilled Shaft Installation and Time for Construction Operations**. Include a layout of the drilled shaft installation sequence. Provide a sequential list of installation steps and a time table of operations for installing full depth temporary casing, sealing casing, excavation and/or drilling time, drilled shaft cleaning, rock coring, drilled shaft inspection, concrete placement. Consider the effect of construction operations of one drilled shaft onto the adjacent drilled shaft(s) and utilities and avoid construction conflicts that will affect the quality or integrity of the completed work. Indicate when and what construction sequence modifications shall be performed under atypical situations, i.e, weekend or holiday shutdowns, unanticipated shutdowns due to equipment issues, etc.

f. **Proposed Drilled Shaft Installation Procedure(s)**. Provide details of the proposed shaft installation procedures, including coring or drilling boulders, rock, obstructions or steep sloping surfaces, when required, and meeting the minimum installation requirements set forth in subsection C.3. Method for identification of the competent or bearing material before finalizing the excavation. Method for monitoring verticality of the drilled shaft walls during excavation, and details of proposed corrective measures to be implemented for shafts out of tolerance. Details of the methods and means of preventing displacement of the casing and/or drilled shaft during installation.

g. **Details of Slurry Operations.** This is required if slurry is used to stabilize the bottom of the excavation within the temporary casing. Include slurry type, methods to mix, circulation, de-sanding, and test the slurry to comply with these special provisions.

h. **Inspection and Cleaning**. Methods to clean and inspect the drilled shaft excavation prior to reinforcement placement.

i. **Crosshole Sonic Logging (CSL).** Method to install and secure the CSL pipes to the reinforcing cage or steel core, along with the proposed selection of pipe and size.

j. **Details of Reinforcement Steel Placement During Construction**. Include methods to ensure cage centering, cover and proper elevation; proper cage orientation, cage integrity while lifted during placement, number of cranes, number of lift points, and number of spreader bars; number and location of bottom and side spacers; cage support during concrete placement, (including field modification details when the bottom of shaft is lower than plan, for both setting the cage and reinforcing the extended shaft beyond the cage); and tie downs during concrete placement.

k. **Concrete Placement Plan**. The purpose of the Concrete Placement Plan is to ensure that a sufficient quantity of concrete is at the job site or in transit to the job site so that the entire pour can be done without delay. Include location of the concrete plant, number of trucks, estimated delivery times, estimated time between trucks, and number of trucks at the site before placement begins. Indicate the use of tremie or concrete pump lines and details of the seal to be used at the bottom end of the tremie or concrete pump line. Breakdowns of concrete plants, trucks, or traffic problems shall be considered under this Concrete Placement Plan. The contractor shall be aware of, and account for, batch, travel, and concrete placement times. Include an estimate of the concrete placement time per drilled shaft. When applicable, detail excavation to grade and finishing of the drilled shafts.

l. **Casing Removal**. Include the details and means by which the contractor intends to remove full depth temporary casings and provide information about staged temporary casing removal when applicable.

m. **Methods of Handling and Disposal of Spoil Excavation, Waste Slurry, Waste Concrete, and Drilled Shaft Cutoffs**. Present sufficient details to the engineer, and the UPRR engineer if applicable, to evaluate the adequacy and compliance of the contractor's methods of disposal with the standard specifications, including all related environmental permits and local regulations.

n. **Other Information** requested on the plans or by the engineer and the UPRR engineer.

o. **Reinforcing Steel Assembly and Installation Plan.** For shafts with a 4'-6" minimum nominal diameter and 40'-0" minimum length, prepare and submit the reinforcing steel assembly and installation plan. Reinforcing steel shop drawings, details of reinforcement placement, including bracing, centering, and lifting methods, and the method to assure the reinforcing cage position is maintained during construction, including use of bar boots and/or rebar cage base plates shall comply with the pertinent requirements of the specifications.

   The reinforcing steel assembly and installation plan shall include:

   1. Procedure and sequence of steel reinforcing bar cage assembly.

2. The tie pattern, tie types and tie wire gages for all ties on permanent reinforcing and temporary bracing.
3. Number and location of primary handling steel reinforcing bars used during lifting operations.
4. Type and location of all steel reinforcing bar splices.
5. Details and orientation of all internal cross-bracing, including a description of connections to the steel reinforcing bar cage.
6. Description of how temporary bracing is to be removed.
7. Location of support points during transportation.
8. Cage weight and location of the center of gravity.
9. Number and location of pick points used for lifting for installation, and for transport (if assembled off-site).
10. Crane charts and a description and/or catalog cuts for all spreaders, blocks, sheaves and chockers used to equalize or control lifting loads.
11. The sequence and minimum inclination angle at which intermediate belly rigging lines (if used) are released.
12. Pick point loads at 0, 45, 60 and 90 degrees and at all intermediate stages of inclination where rigging lines are engaged or slackened.
13. Methods and temporary supports required for cage splicing.
14. For picks involving multiple cranes, the relative locations of the boom tips at various stages of lifting, along with corresponding net horizontal forces imposed on each crane.

p. **Details of Guide Wall Design and Installation.** Provide details of required guide wall design and construction.

C.1.4 Acceptance

The department will evaluate the Drilled Foundation Shaft Installation Plan for conformance with the requirements of these special provisions. Within 30 calendar days after receipt of the Drilled Foundation Shaft Installation Plan, the engineer, and the UPRR engineer if applicable, will notify the contractor of the preliminary acceptance of the plan, or if additional information and/or changes are required. Any unacceptable part of the Installation Plan will require resubmission. The contractor must resubmit the drilled shaft installation plan for evaluation and review with the necessary changes or additional information provided. The engineer, and the UPRR engineer if applicable, will provide a written notice of preliminary acceptance or rejection of contractor's resubmitted Drilled Foundation Shaft Installation Plan within 30 calendar days after its receipt. The accepted contractor's Drilled Foundation Shaft Installation Plan will become final after the successful completion and acceptance of the Trial Wall Panel Secant Pile and satisfactory drilled foundation shaft installation performance is demonstrated in the field.

After assessment or reassessment of the Drilled Foundation Shaft Installation Plan has been made and the engineer and the UPRR engineer has granted preliminary acceptance, no changes to the plan can be made without written consent of the engineer, and the UPRR engineer if applicable.

C.2 Trial Wall Panel Secant Pile 59.06-Inch UPRR

After the Drilled Foundation Shaft Installation Plan has been preliminarily accepted, construct consecutive drilled shafts forming a non-production secant pile trial wall panel using the same crews and equipment that will be performing the drilled shaft production work. Construct in accordance with the Trial Wall Panel Secant Pile 59.06-Inch UPRR special provision and adhere to and demonstrate the adequacy of the accepted Drilled Foundation Shaft Installation Plan.

Construction of the Trial Wall Panel Secant Pile 59.06-Inch UPRR will be used to determine if the contractor's methods, equipment, personnel, and proposed procedures are effective to produce stable drilled shaft excavations and secant pile walls that meet the requirements of these special provisions. Perform all testing that will be required for production shafts as described elsewhere in the special provisions. With approval of the UPRR engineer if applicable, and the engineer, revise construction methods and equipment as necessary during this stage or at any time during the installation of production shafts to satisfactorily complete the secant pile wall construction in accordance with these special provisions.

In the event the contractor fails to demonstrate the adequacy of the drilled shaft installation procedure(s) or equipment during construction of the Trial Wall Panel Secant Pile 59.06-Inch UPRR, the UPRR engineer if applicable, and the engineer will require appropriate modifications as may be necessary to produce acceptable results. Comply to satisfactorily demonstrate the adequacy of the proposed method(s) or equipment or construct additional trial wall panel secant pile shafts as indicated by the engineer at no additional cost to the department.

C.3 Drilled Shaft Installation

C.3.1 General

Carry out the work in accordance with the accepted Drilled Foundation Shaft Installation Plan and as demonstrated during installation of the Trial Wall Panel Secant Pile 59.06-Inch UPRR. The resulting installation plan shall include length of full depth temporary casing, details of the constituent materials of any drilling fluid or means used for stabilization of the bottom of the excavation, the method of inspection, details of the concrete design mix, concreting method, the minimum time between the completion of one shaft and the commencement of the next, and the pattern of construction.

Ensure that damage does not occur to the completed shafts as a result of work on adjacent shafts. Submit to the engineer, and the UPRR engineer if applicable, a drilled shaft installation sequence. The proposed sequence and timing of shaft installation shall be such that the installation work will not cause any damage to adjacent shafts. The shaft installation shall not commence until acceptance of the engineer, and the UPRR engineer if applicable, has been obtained.

C.3.2 Temporary Working Surface

Use a temporary working surface to provide a level surface at or above the top of shafts for drilling where needed.

C.3.3 Forcible Correction

Where shafts have not been positioned within the specified limits no method of forcible correction will be permitted.

C.3.4 Records

Keep a work record of all shafts installed. Give a copy of each day’s record to the engineer and the UPRR engineer within 24 hours of that day’s work being completed. The engineer and the UPRR engineer will review and agree to the daily record form format before drilled shaft work commences. Incorporate any comments by the engineer and the UPRR engineer into the record form. Note all unexpected drilling or installation conditions in the records.

C.3.5 Methods of Drilled Shaft Installation

C.3.5.1 General

The temporary casing installation method and concrete placement in the wet using a tremie pipe shall be used to produce sound and durable drilled shafts free of defects. When a particular installation method is required in the special provisions, only that method of construction shall be used. If no particular method is specified for use, select and use one of the methods of construction as determined by the site conditions and needed to properly accomplish the work. Do not use the permanent casing method unless authorized by the engineer and the UPRR engineer. Submit to the engineer and the UPRR engineer for acceptance of the contractor’s selected method of construction in the Drilled Shaft Installation Plan described in these special provisions.

Full length temporary casing with the use of water or slurry inside the temporary casing, is required for the installation of all drilled shafts on the project. The use of permanent casing method will not be permitted unless authorized by the engineer and the UPRR engineer. The use of slurry without casing is not permitted. Full depth temporary casing shall be installed using hydraulic oscillating equipment specifically intended for temporary casing installation and extraction. Installation of full depth temporary casing by means of driving or vibrating is not permitted. Advancing and installing casing by means of excavation ahead of the casing is not permitted. During temporary casing installation and shaft excavation, the tip of the temporary casing shall be advanced a minimum of 5 feet ahead of the tip of the excavation, until the bottom of the excavation is reached.

After the temporary casing is in place, excavate inside the casing, while keeping the temporary casing full of water or slurry, as necessary, to stabilize the bottom of the excavation within the casing. Excavate to the planned shaft tip elevation using the wet installation method techniques described in subsection C.3.5.4 below. Clean the bottom of the excavation. Before extracting the temporary casing, ensure that the level of fresh concrete inside the casing is at such level that the pressure of its hydrostatic head displaces up and out the fluid trapped in the annular space between the casing and the drilled shaft wall.

C.3.5.2 Dry Installation Method

The dry method of shaft installation is not permitted.

C.3.5.3 Temporary Casing Installation Method

The temporary casing method of shaft installation consists of supporting the shaft excavation by means of full depth temporary casing that is advanced ahead of the excavation until the drilled shaft tip elevation is reached. Excavate, remove, and clean all accumulated loose material from within the cased excavation before placing the reinforcement cage and the shaft concrete in the wet excavation. Do not place concrete into the wet excavation using free fall. Concrete must be placed under water in wet excavation using proper tremie procedures to direct the concrete under the water inside the shaft excavation and displace the water.

C.3.5.4 Wet Installation Method

The wet installation method consists of drilled shaft installation by means of full depth temporary casing in conjunction with the use of slurry, drilling fluid, or water that maintains a sufficient head of not less than 5 feet and maintains stability against heave and blow-in in the bottom of the excavation. Use the wet installation method for all drilled foundation shafts in the contract. When using the wet method below the groundwater table, all drilled shaft operations shall be accomplished while maintaining a positive head of fluid, not less than 5 feet, and of sufficient depth above the water table to avoid heaving or blow-in of the bottom of the excavation.

C.3.5.5 Permanent Casing Method

Do not use the permanent casing method.

C.3.6 Guide Walls

The design and construction of guide walls is the responsibility of the contractor and shall take into account the shaft size, ground conditions and equipment used on site to ensure stability and control tolerances. The minimum depth of concrete guide walls shall be 4 feet, and the minimum shoulder width shall be 1.5 feet. Larger size guide walls may be required if the surface soils are loose or otherwise of insufficient strength to prevent movement of the guide walls during construction or if drilled shafts are placed using minimum sized guide walls and do not meet required positional tolerances.

C.3.7 Excavations

C.3.7.1 General

Excavations required for the secant pile walls shall be performed through whatever materials are encountered to the dimensions and elevations shown in the plans, or as directed by the engineer, and the UPRR engineer if applicable. The excavation and installation method shall be suitable for the intended results and materials encountered. Blasting is not permitted.

Maintain a construction log during the secant pile wall excavation. The construction log will include information such as ground elevation, ground water elevation, sequence number, method of installation, machines and tools employed, drilling fluids employed, drilling times, excavated materials and their particular elevations, soil/rock-cores samples and their particular elevations, rock sockets and their elevation, bells plus their size and elevations, and all other information relevant to the excavation process that will assist the engineer and the UPRR engineer in evaluating the foundation. Information shall also include proposed methods for disposal of excavated material and slurry in accordance to state and local environmental regulations, codes and ordinances, the standard specifications, or as directed by the engineer and the UPRR engineer.

C.3.7.2 Protection of Existing Structures

Take all reasonable precautions to prevent damage to existing structures and utilities. These measures shall include, but are not limited to, subsidence control during installation of temporary casings or excavation inside temporary casings.

Where secant pile walls are to be installed in conjunction with embankment placement, the secant pile walls shall be constructed after placement of the fill, unless otherwise shown in the plans, or accepted by the engineer, and the UPRR engineer if applicable. If fill is required to be placed after completion of the secant pile walls, the footing cap shall be done, as closely as possible, after the fill is in place and compacted to final grade leaving only the space necessary for the construction of the cap.

C.3.7.3 Drilled Shaft Excavation

Provide the necessary equipment to remove and dispose of all materials encountered in the drilled shaft excavation to the dimension and elevation shown on the plans, or as directed by the engineer, and the UPRR engineer if applicable. Contractor's excavation equipment may include, but is not limited to, earth augers and rotary drills designed to work within full depth temporary casing. Unless otherwise shown on the plans, the drilled shaft excavations shall be vertical bored holes extending from the ground surface down to design tip elevation.

C.3.7.4 Templates and Guide Walls

Templates are required for installation of all secant pile wall foundations to aid in achieving position and alignment of the installed drilled shafts within specified tolerances. Guide walls are also required for the installation of all secant pile drilled shafts to aid in achieving specified tolerances for location and verticality of the installed drilled shafts.

C.3.7.5 Obstructions

Obstructions are defined as man-made objects that when encountered, stop or significantly impede downward progress of the temporary casing installation or excavation to less than 12-inches for 60 minutes or longer under maximum applied thrust and torque. Obstructions include man-made objects and may include, but are not limited to old concrete foundations, piling, abandoned utilities or buried pavements. Obstructions are further classified as "known obstructions" which are identified on the plans, and "unknown obstructions" that may be encountered but are not identified on the plans.

Employ special tools and/or procedures as necessary when obstructions are encountered and the contractor cannot advance the excavation more than 12-inches in 60 minutes using conventional rock augers fitted with teeth, drilling buckets, or under reaming tools operating at maximum power, torque, and down thrust. Special procedures and tools that may be required include, but are not limited to chisels, breakers, core barrels, air hammer tools, and hand excavation. Other methods for obstruction removal such as temporary casing or hole diameter increase can be employed to aid in the removal if acceptable to the engineer, and the UPRR engineer if applicable. Blasting is not permitted.

Natural deposits, including boulders or cobbles (individual or nested), and other deposits may be encountered that impede the installation and advancement of the temporary casing and excavation to less than 12-inches for 60 minutes or longer as noted above for obstructions. Natural deposits, regardless of makeup, depth, configuration, and consistency are not classified as obstructions as defined in this special provision or the special provision Obstructions Drilled Foundation Shaft included in the contract.

C.3.7.6 Lost Tools

Drilling tools that are lost in the excavation shall not be considered obstructions and shall be promptly removed. All costs due to removal of lost tools shall be borne by the contractor including costs associated with hole degradation during removal operations or time while the hole remains open.

C.3.7.7 Inspections and Cleanliness of Excavation

Provide the details of drilled shaft inspection and cleanliness within the Drilled Foundation Shaft Installation Plan, required by subsection C.1.3 of this specification. Provide equipment and tools for checking the dimensions and alignment of each drilled shaft excavation, and coordinate schedules for inspection of the excavation with the engineer, and the UPRR engineer if applicable. Determine dimensions, alignment, and final depth of the drilled shafts after final cleaning. Provide a shaft inspection device (e.g., GPE SID, PDI SQUID, etc.) to be used to inspect the cleanliness of shaft bottoms and quantitatively assess the depth of sediment after rebar placement and immediately prior to concrete placement. When applicable, provide visual confirmation with a camera or safe access and egress to the engineer, and the UPRR engineer if applicable, for inspection of the walls and bottom of the drilled shaft excavation prior to placement of the rebar cage or steel core section and concrete. After the drilled shaft excavation has been prepared for inspection, notify the engineer, and the UPRR engineer if applicable. The cleanliness and the bearing surface of the drilled shafts will be evaluated and accepted by the engineer, and the UPRR engineer if applicable. Unless the engineer or the UPRR engineer specify otherwise, the contractor's cleaning operation shall be considered sufficient when no more that 50 percent of the bottom area of each shaft has less than 1/2-inch of sediment or debris at the time of hole

acceptance just prior to steel positioning and concrete placement. The maximum depth of sediment or any debris at any location on the bottom of the shaft shall not exceed 1 1/2-inch at the time of concrete placement.

C.3.7.8 Safety

Do not permit any worker to enter the drilled foundation shaft excavation for any reason unless a suitable casing has been installed, the water level has been lowered and stabilized below the level to be occupied, and suitable safety equipment and procedures have been provided to the personnel entering the excavation which includes OSHA certification for confined-entry-space.

C.3.7.9 Record Information

Provide to the department the drilled shaft excavation records and report any unusual observation to the engineer and the UPRR engineer within 8 hours of discovery. Submit a draft of this form for each completed drilled shaft within 24 hours of shaft completion and submit the final form within 2 weeks. Submit relevant information on a daily basis, or more frequently when variations occur, or as otherwise required by the engineer and the UPRR engineer.

Report the drilled shaft construction progress in accordance to “Records and Forms” Drilled Shafts: Publication No. FHWA – GEC 010, Section 19.5 and Appendix F, pages F-1 through F-16.

C.3.8 Placement of Reinforcing Steel Cage

Prior to placement of the reinforcing steel and concrete, if slurry fluid was employed during the installation of the drilled shaft, test the slurry for compliance with this specification as described in the QMP Drilled Shafts special provision. Slurry Tests shall be performed along the shaft and at the bottom of the shaft. Adjust the slurry properties as necessary to meet the specifications.

Prior to placement of the reinforcing steel and concrete, ensure that the C.3.6.6 cleanliness requirements are met.

Concrete or non-corrosive spacers shall be used at sufficient intervals not exceeding 10 feet along the reinforcement cage or the steel core. A minimum of 4 spacers shall be spaced evenly around the circumference of any shaft with a maximum space around the shaft circumference of 30 inches between any spacer (i.e., at any given level a 59.06-inch diameter shaft shall have 7 spacers). The first spacers shall be placed 1.5 feet from the bottom of the shaft with successive spacers at maximum intervals of 10 feet along the shaft. Spacers shall be of an appropriate diameter wheel to provide minimum clearance shown on the plans between the shaft excavation walls and the steel reinforcement.

C.3.9 CSL Access Tube Installation

Drilled shafts must be fitted with CSL test tubes to evaluate their integrity as shown on the plans.

Install the access tubes or pipes as nearly parallel and far as possible from the longitudinal bars. The number of tubes to be installed per each drilled shaft diameter is as indicated in the table below:

Drilled Shaft Diameter	Number of CSL Tubes	Tube Spacing
59.06-inches	5 minimum	As shown in plans

Securely attach the tubes to the interior of the reinforcement cage with a minimum concrete cover of three inches. The tubes may be attached to the exterior of the cage when accepted by the engineer, and the UPRR engineer if applicable, provided the minimum cover requirement of 3-inches over the tubes shall be maintained. In all cases, the tubes shall be as near to vertical and parallel as possible.

Extend the tubes from the bottom of the drilled shaft to at least 3-feet above the top of the drilled shaft, or 2-feet above the ground surface for shafts with cut-off below the ground surface. The tubes must be watertight and capped to prevent concrete or debris from entering during manipulation of the cage and concreting. Care must be taken during lifting and lowering the steel reinforcement so as not to damage the tubes. Fill the CSL tubes with potable water prior to concrete placement. For production shafts and upon completion of the CSL tests and acceptance of the shafts, remove all the water from the access tubes or drilled holes and fill them with an approved grout.

C.3.10 Concrete Placement

C.3.10.1 General

Do not prime pump within the drilled shaft. Place concrete continuously once concrete placement is started. No intermediate construction or cold joints are permitted within a single drilled foundation shaft.

Test the concrete delivered to the job site for compliance with the QMP Drilled Shafts special provisions, the standard specifications and these special provisions. Record the actual volume of concrete placed against the theoretical volume vs depth at depth intervals not exceeding the shaft diameter.

C.3.10.2 Concrete Placement Time

Ensure excavation inspection occurs no later than 24 hours after excavation is complete. Place concrete within three hours after excavation inspection and approval unless otherwise directed by the engineer, and the UPRR engineer if applicable. If the concrete is not placed within this time frame, the excavation must be re-inspected and accepted by the engineer, and the UPRR engineer if applicable, prior to concrete placement.

C.3.10.3 Concrete Placement by Free Fall

Concrete placement within drilled shafts by free fall is not permitted.

C.3.10.4 Concrete Placement by Tremie Pipes

Use tremie pipes to place the concrete inside the excavation. Keep the discharge end of the tremie a minimum of 7-feet below the level of the fresh concrete already placed inside the excavation to maintain a seal. The concrete shall flow into position by pressure through a steel tremie with a minimum diameter of 10-inches. Seal the bottom of the tremie using one-way flap valve before it is lowered into the wet excavation. If water/slurry enters the tremie pipe after concrete pouring has started, the tremie must be withdrawn, cleaned, resealed, and pouring restarted. If for some reason, the tremie is raised out of the fluid concrete or the concrete inside the drilled shaft drops down contaminating the tremie, completely remove and clean the tremie, then replace the seal at the bottom of the tremie and lower the tremie back as far below as possible into the already placed concrete.

C.3.10.5 Concrete Placement by Concrete Pumps

Concrete pumps and concrete lines can be used to place concrete in drilled shafts rapidly or to deliver the concrete from a distant location. However, due to the need to disassemble the pump line to allow the removal of casing sections and potential air pockets, disruption in concrete flow, the concrete pump placement directly within the shaft is not permitted on this project. The pump must discharge the concrete into a minimum 10-inch diameter steel tremie with a bottom one-way flap valve.

All pump lines, tremie pipes, and their connections shall be watertight and must guide the concrete to the discharge point at the center of the rebar cage or steel core and drilled shaft excavation. The pump line may be flexible; however, inside the shaft use a minimum 10-inch diameter steel tremie pipe that can deliver the concrete in an uninterrupted manner. Keep the bottom of the tremie or discharge orifice 7-feet below the surface of fluid concrete already placed to avoid sudden jumping of the pump line out of the excavation. Concreting shall continue until over pouring is evident at the top of the drilled shaft and until dark gray concrete (acceptable concrete) can be distinguished from the drilling fluid.

C.3.10.6 Casting Level

Over pour concrete above the top of shaft cut-off level to ensure that all concrete at and below cut-off level is homogeneous and free of laitance and deleterious materials. Account for room and access requirements when cut-off level is below grade to adequately perform this task and protect adjacent ground from caving in.

C.3.10.7 Allowable Seepage Through Secant Pile Walls

Seepage, but not soil migration, is allowed through secant pile walls. Install weep holes and geocomposite wall drains as the plans show.

C.3.11 Construction Tolerances for Individual Shafts

Drilled shaft excavations or completed drilled shafts constructed out of the tolerance are unacceptable. The contractor is responsible for correcting to the satisfaction of the engineer and the UPRR engineer all unacceptable work. Materials, construction, work, engineering analysis, and redesign necessary to complete corrections to out-of-tolerance excavations or completed drilled shafts shall be furnished to the department without either cost or time extension for the project. Comply with the following construction tolerances:

a. The front face (face closest to the cast-in-place facing) of the drilled shaft shall be initially positioned in the theoretical location as shown on the plans. The final, as constructed position of the front face of the drilled shaft shall be within a maximum of 2 inches in any direction from the theoretical position shown on the plans, unless otherwise permitted by the engineer prior to construction.

b. The vertical alignment of the drilled shaft excavation shall not vary by more than 1/16 inch per foot from plumb vertical.

c. Tolerances specified in a. and b. above are not additive. In no case shall there be a gap between secant piles. In the case that there is a gap in secant piles, develop a remedial action and submit to the engineer. Implement the engineer-accepted remedial action plan at no additional cost to the department.

d. Any gap that occurs between adjacent secant drilled shafts shall be left unfilled.

e. If the wall is installed outside these tolerances affecting the design and appearance of the wall, develop and carry out immediate remedial measures subject to the acceptance of the engineer, at no additional cost to the department.

f. The diameter of the installed drilled shaft shall not be less than the diameter of the drilled shaft shown on the plans. Any conflicts due to a casing that is greater in diameter than the plan shaft diameter shall be remedied by the contractor. No additional compensation or schedule time shall be granted to the contractor for resolving any conflicts due to oversized casings. Employ equipment and methods of excavation to complete the drilled shaft excavation to a planar bottom, and the cutting edges of the equipment used during the excavation shall be normal to equipment's vertical axis within a tolerance of 3/8-inch per foot of diameter. The bottom of the drilled shaft excavation shall be normal to the axis of the drilled shaft within ¾-inch per foot of drilled shaft diameter.

h. Tolerances outlined in sections a. to e. herein shall be checked and finally met by the contractor prior to placement of the reinforced rebar cage or steel core inside the shaft hole.

i. Ensure the drilled shaft casing avoids conflicting with the reinforced rebar cage in adjacent shafts by ensuring that the provisions of C.3.11.b are never violated. If these provisions are violated, rectify the shaft in accordance with subsection C.3.13.

i. After the concrete is poured, the top elevation of the installed drilled shaft shall be within 1-inch of the top elevation of the corresponding drilled shaft on the plans, and the top of the reinforcing steel cage shall be within the positional tolerance shown on the plans. The center of the reinforcing cage shall be the center of the drilled shaft.

j. Upon excavation of the wall shafts, any concrete present due to blowouts or protrusions that will not allow for a minimum 4-inch cast-in-place facing thickness over the face of the shafts, shall be removed at the contractor’s expense. Cast-in-place facing alignment shall remain, as shown on the plans. Concrete removal if required, shall be done in such a manner as to not cause damage to the remaining portions of the shaft. This concrete removal criteria applies to all shafts installed and excavated in this contract.

k. The acceptance of the shaft’s tolerances shall be granted only after the excavation of the walls.

C.3.12 Non Destructive Testing Program

Perform CSLand TIP testing as specified elsewhere in the special provisions, and as directed by the engineer, and the UPRR engineer if applicable.

C.3.13 Acceptance for Constructed Drilled Shafts

C.3.13.1 General

Any drilled foundation shafts that are not constructed and installed in accordance to these special provisions will be rejected by the engineer or the UPRR engineer. Rejected shafts shall be replaced or remediated by the contractor using methods and procedures subject to the acceptance of the engineer and the UPRR engineer before beginning replacement or remediation. If required to remediate rejected shafts, shaft replacement, shaft repair, or the cost of constructing additional shafts, will be at no additional cost to the department and no additional time will be added to the contract

In the event that a shaft or shafts are rejected, work on remaining drilled shafts in the contract cannot continue until the contractor re-visits and re-submits a revised drilled shaft installation plan and the revised plan is accepted by the engineer and the UPRR engineer. The revised plan must address any construction issues that resulted in or contributed to the reason(s) for which the deficient shaft(s) were

rejected. No additional time will be added to the contract for the time required to revise and accept the revised drilled shaft installation plan.

C.3.13.2 Based on Specifications

The department will only accept drilled foundation shafts that conform to these special provisions. Drilled foundation shafts and related work constructed in any manner that disregards any specified requirement will not be accepted. This includes:

a. Drilled foundation shaft excavations constructed out-of-tolerance, as specified in this specification. When repair to an out-of-tolerance shaft is possible as determined by the engineer and the UPRR engineer, fix the drilled shaft to meet the tolerances before the contractor is permitted to proceed further with any drilled shaft construction. All repairs must be acceptable to the engineer and the UPRR engineer before the contractor may resume the drilled shaft work.

b. Excavation of a drilled foundation shaft with slurry not conforming to the QMP Drilled Shafts special provision.

c. Drilled foundation shafts exhibiting cuttings from slurry at the drilled shaft bottom; showing soft, incomplete, or unclean bottoms; or presenting side sloughing and sedimentation at the bottom.

d. Drilled foundation shafts with honeycomb intrusions or concrete in which the fines have been washed out or water channels in concrete.

e. Horizontal discontinuity or necking in the drilled foundation shaft concrete.

f. Quarter-moon-shaped soil intrusions on the sides of a drilled foundation shaft.

g. Folded-in debris inside a drilled foundation shaft.

h. Drilled foundation shafts for which the mix design has been altered without the acceptance of the engineer and the UPRR engineer, including the unauthorized addition of water to a mix design to bring it to a certain slump.

i. Drilled foundation shafts constructed in a manner where concrete placement has failed to meet the required time requirements, placement tolerances, or the methods of installation did not have the engineer’s and the UPRR engineer’s acceptance.

j. Drilled foundation shafts constructed with concrete not meeting the minimum 28-day compressive strength requirement shown on the plans.

C.3.13.3 Based on the CSL or TIP Tests

Reports for the various tests performed elsewhere in the special provisions will be reviewed by the engineer and the UPRR engineer. If the reports indicate significant anomalies or defects, the engineer or the UPRR engineer will direct the contractor to core the shaft(s) at the location(s) of the defect or anomaly. The coring shall be a 2.5” inner diameter standard core barrel, but no smaller than an NX-sized double tube core barrel. The engineer or the UPRR engineer will determine the number of cores, length(s), location(s), and testing methodology. If the coring or core sample testing results confirm the presence of significant anomalies or defects, the drilled shaft will be determined to be unacceptable and rejected by the engineer or the UPRR engineer. Upon rejection of the shaft(s), submit a remedial action plan to the engineer and the UPRR engineer for correcting the rejected work. The remedial action plan shall include detailed shaft repair or replacement procedures, if necessary, and will be subject to acceptance by the engineer and the UPRR engineer. Any modifications to the drilled shaft, load transfer mechanisms, and elements affected by the proposed remedial actions will require calculations and working drawings and shall be made and stamped by a professional engineer, registered in the state of Wisconsin.

In the event that the engineer or the UPRR engineer directs the contractor to core through the concrete and the coring and associated core sample tests confirm the presence of anomalies or defects, the cost of coring, hole closure, core sample tests, and all labor and materials to perform the accepted remedial actions shall be provided at no additional cost to the department and with no extension of the contract time originally granted.

In the event that the engineer or the UPRR engineer directs the contractor to core through the concrete and the core or core sample tests do not confirm the presence of anomalies or defects, the cost of the coring, hole closure and associated testing shall be borne by the department, but with no extension of the contract time originally granted.

Frequent defects, as determined by the engineer or the UPRR engineer will result in a re-evaluation of the contractor's installation procedure, and depending on the frequency and type of defect, the engineer or the UPRR engineer may require a change or modification to the contractor's procedure.

D Measurement

The department will measure Wall Secant Pile 59.06-Inch UPRR of individual shafts by the linear foot, acceptably completed. Longer shafts, larger shaft diameters, additional excavation, and additional concrete placed beyond the limits of the plan dimensions will not be measured for payment unless authorized and agreed to in advance of placement by the engineer.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.4006	Wall Secant Pile 59.06-Inch UPRR	LF

Payment is full compensation for preparing all submittals, including the Drilled Foundation Shaft Installation Plan; furnishing, installing, and removing full depth temporary casing, guide walls, placing and removing temporary working surfaces, drilling fluids, documentation, clearing or removal of surface obstructions, clearing or removal of known man-made or natural obstructions; removal of concrete due to oversizing, blowouts or protrusions from the face of the shafts; drilling the shafts, handling and disposal of the excavated, augered and cored soils, and any drilling fluids; lifting and positioning the reinforcement steel cage, including any required wheel type spacers, boots, internal bracing of the reinforcement steel cage, and any other temporary lifting supports; furnishing and placing the concrete for the drilled shafts to the dimensions and elevations as shown on the plans, including removal of over pour concrete; and furnishing, installing and closing the crosshole logging tubes.

Reinforcement bars are measured and paid under the bid item Bar Steel Reinforcement HS Bridges.

Removal of unknown man-made subsurface obstructions for the Wall Secant Pile (diameter) pay items will be measured and paid for separately under the bid item, Obstructions Wall Secant Pile, included in the contract.

285. Handrail B-40-921, Item SPV.0090.4010; Handrail R-40-649, Item SPV.0090.4011.

A Description

This special provision describes furnishing and installing steel railings identified as handrails on the plans for railroad structures according to standard spec 513, as shown in the plans, and as hereinafter provided.

B Materials

Furnish materials conforming to standard spec 513.2.

Supplement standard spec 513.2.1 with the following.

All materials for railing shall be new stock, free from defects impairing strength, durability and appearance. Galvanize and coat railing assemblies with a two-coat system. Bubbles, blisters and flaking in the coating will be a basis for rejection.

Galvanize all wire rope for permanent applications.

All materials for temporary handrails need not be galvanized, painted or otherwise coated.

B.1 Paint for Galvanized Handrails

Use one of the qualified coating manufacturers and products given in the Approved Products List for Paint Systems for Galvanized Railing. An equivalent system may be used with the written approval of the engineer and the UPRR engineer.

B.2 Color

The finished color for coating system for handrails shall match the color indicated on the plans.

C Construction

Conform to standard spec 513.3, except delete paragraph 513.3.1(6) and replace with the following:

C.1 Galvanizing

Fabricate railings to meet the requirements of ASTM A385. After fabrication, blast clean steel railing assemblies per SSPC-SP6 and galvanize according to ASTM A123. Drill vent holes in members as required to facilitate galvanizing and drainage. Show location and size of vent holes on the shop drawings. Remove all burrs at component edges, corners and at holes and chamfer sharp edges before galvanizing. Condition any thermal cut edges before blast cleaning by shallow grinding or other cleaning to remove any hardened surface layer. Remove all evident steel defects exposed according to AASHTO M 160 prior to blast cleaning. Lumps, projections, globules, or heavy deposits of galvanizing, which will provide surface conditions that when coated will produce unacceptable aesthetic and/or visual qualities, will not be permitted. Water quenching and chromate or other passivating treatments will not be permitted.

C.2 Two Coat System

After galvanizing, coat all exterior surfaces of steel railing assemblies and inside of rail elements at field erection and expansion joints with a two-coat system as hereinafter provided.

Clean all galvanized surfaces to be coated per SSPC-SP1 to remove chlorides, sulfates, zinc salts, oil, dirt, organic matter and other contaminants. Brush blast clean the cleaned surface per SSPC-SP16 to create a slight angular surface profile per manufacturer's recommendation (1 mil minimum, 1.5 mils maximum) for adhesion of the tie coat. Remove wet storage stains prior to blasting per SSPC-SP16. Perform brush blasting at an angle of 30 to 60 degrees to the surface using air pressure no greater than 50 psi, and a soft abrasive such as Garnet. Steel shot and angular iron blasting grit will not be permitted. Brush blast the surface to produce a matte silver appearance. When brush blasting, do not fracture the galvanized finish or remove any dry film thickness. Prior to application of the tie-coat, remove visible deposits of oil, grease and other contaminates from the surface per SSPC-SP1, and clean the brush blasted surface of dust, dirt and loose residue according to standard spec 517.

After cleaning and within 8 hours of blasting, apply a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface, per manufacturer's recommendations. The tie coat shall etch the galvanized rail and prepare the surface for the top coat. Apply a top coat per manufacturer's recommendations, matching the specified color shown on the plans. Use an approved top coat that is resistant to the effects of the sun and is suitable for a marine environment. Furnish tie and top coats of contrasting colors from the same manufacturer.

Ensure that the coating manufacturer reviews the process to be used for surface preparation and application of the coating system with the coating applier. The review shall include a visit to the facility performing the work if requested by the coating manufacturer. Provide written confirmation, from the coating manufacturer to the engineer and the UPRR engineer that the review has taken place and that issues raised have been addressed before beginning coating work under the contract.

C.3 Shop Drawings

Submit shop drawings showing the details of railing construction. Show the railing height post spacing, rail location, weld sizes and locations and all dimensions necessary for the construction of the railing. Show location of shop rail splices, field erection joints and expansion joints. State the name of the coating manufacturer and the product name of the tie coat and top coat used along with the color. State the size and material type used for all components. Also show the size and location of any vent or drainage holes provided.

C.4 Delivery, Storage and Handling

Deliver material to the site in an undamaged condition. Upon receipt at the job site, thoroughly inspect all materials to ensure that no damage occurred during shipping or handling and conditions of materials is in conformance with these specifications. Handle coated railing according to standard spec 517. If coating is damaged, repair or replace railing assemblies to the approval of the engineer and the UPRR engineer at no additional cost to the owner. Carefully store the material off the ground to ensure proper ventilation and drainage. Exercise care so as not to damage the coated surface during railing installation. No field welding, field cutting or drilling will be permitted without the approval of the engineer and the UPRR engineer.

C.5 Touch-up and Repair

For minor damage caused by shipping, handling or installation to coated surfaces, touch-up the surface in conformance with the manufacturer's recommendations and conforming to ASTM A780. If damage is excessive, replace the railing assembly at no additional cost to the owner. Provide the engineer and the UPRR engineer with a copy of the manufacturer's recommended repair procedure and materials before repairing damaged coatings.

D Measurement

The department will measure Handrail (structure) bid items in length by the linear foot for each structure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.4010	Handrail B-40-921	LF
SPV.0090.4011	Handrail R-40-649	LF

Payment is full compensation for providing, fabricating, transporting, and erecting all components of steel handrail as indicated in the plans; for preparation, galvanizing, cleaning and painting; for providing and placing metal shims under the bases if required; and for providing and placing the anchor bolts.

286. Railing Tubular Screening 8-FT, Item SPV.0090.4020.

This special provision describes material and construction requirements for a taller version of standard Railing Tubular Screening. Conform to standard spec 513, as modified in this special provision.

Modify the standard spec as follows:

513.5 Payment

Replace paragraph one with the following:

(1) The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.4020	Railing Tubular Screening 8-FT	LF

287. Sanitary Sewer 8-Inch PVC, Item SPV.0090.5000; Sanitary Sewer 10-Inch PVC, Item SPV.0090.5001.

A Description

Perform work under these items according to the details as shown in the plans and the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and amendments (SSSW) and as hereinafter provided in these special provisions.

Notify the City of Glendale prior to construction at least three business days in advance. Notify, in writing, all businesses and property owners/occupants within the project limits to inform them of the project and to inform them of any temporary sewer service disconnections. Provide and maintain all necessary bypass pumping for sanitary sewer relay

B Materials

B.1 General

All materials and work required to install the sanitary sewer will conform to the Standard Specifications for Sewer and Water.

B.2 PVC Pipe

The pipe shall be polyvinylchloride Pipe (PVC), ASTM D-3034 SDR-26. All fittings, including bends, shall be of the same material as the proposed sanitary sewer main. Material joining the fitting to the pipe shall be free from cracks and shall adhere tightly to each joining surface.

B.3 Pipe Gaskets

Sanitary sewer pipes shall have rubber gaskets conforming to ASTM F-477.

C Construction

C.1 General

Construct 8-inch and 10-inch pipe as shown in the plans.

C.2 Laying Of Pipe

C.2.1 Bedding, Cover, Foundation and Backfill Material

All sewer pipe shall be laid in a Standard Section, Class "C" bedding conforming to File No. 3 with modifications as specified in Section 3.2.6(i) for PVC pipe of the Standard Specifications for Sewer and Water, unless otherwise noted on the plans. Cover material for PVC pipe shall be the same as that specified in the Standard Specifications for Sewer and Water for bedding

Compact granular backfill mechanically to a minimum of 95% maximum density as determined by ASTM D1557, Method D (Modified Proctor Test) from the top of the pipe cover material to the surface of the trench. Special compaction equipment and measures are required where standard compaction equipment cannot be utilized. Flooding of backfill will not be allowed. Compact native backfill mechanically to a minimum of 90% maximum density as determined by ASTM D1557 (Modified Proctor Test) from top of pipe cover material to trench surface. Compaction of the excavated and granular backfill material shall be compacted to achieve uniform consolidation in conformance with section 2.6.14(b) of the SSSW.

C.2.2 Joints Between Dissimilar Pipe Materials

Connect dissimilar pipe materials by means of a nonshear flexible compression coupling. Install couplings in strict accordance with the manufacturer's recommendations. Joints on sanitary sewers between dissimilar pipe shall be either a non-shear coupling as manufactured by DFW/HPI or shall be made with flexible mechanical compression joint coupling conforming to ASTM C-594 Type B with stainless steel bands and shear ring conforming to ASTM A-167 as manufactured by Joints, Inc. (Calder) of Gardena, CA; Fernco Joint Sealer Co. of Ferndale, MI., or equal and in addition, using a transitional bushing conforming to ASTM C-594 Type B when pipe with different outside diameters are to be connected.

The cost of connecting dissimilar pipe materials with nonshear flexible compression coupling is incidental to the cost of sanitary sewer pipe.

D Measurement

The department will measure Sanitary Sewer 8-inch and 10-inch, by the linear foot of sewer, acceptably completed. The pipe will be measured horizontally to the nearest foot, from center-to-center of manholes, to the end of the new pipe, or to the outside face of structures, whichever is applicable.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.5000	Sanitary Sewer 8-Inch PVC	LF
SPV.0090.5001	Sanitary Sewer 10-Inch PVC	LF

Payment is full compensation for providing all materials including all pipe materials, fittings, and accessories required; for furnishing all asphaltic pavement removal and excavating; for providing and placing pipe bedding and cover material; for laying pipe; for sealing joints and making connections to new or existing facilities; for backfilling and compaction; for leakage testing; for providing and maintaining all necessary bypass pumping for sanitary sewer relay; for removing existing pipe, and for cleaning out and restoring the work site.

288. Abandoning Sanitary Sewer 10-Inch PVC, Item SPV.0090.5002.

A Description

A.1 General

Perform work under these items according to the details as shown in the plans and the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and amendments (SSSW) and as hereinafter provided in these special provisions.

Notify the City of Glendale of the commencement of construction at least three business days in advance. Notify, in writing, all businesses and property owners/occupants within the project limits to inform them of the project and to inform them of any temporary sewer service disconnections. Provide and maintain all necessary bypass pumping for sanitary sewer abandonment.

B Materials

B.1 General

All materials and work required to abandon existing sanitary sewers will conform to the SSSW. Removing sewers and properly bulkheading can be completed in lieu of abandoning in place.

B.2 Cellular Concrete

Provide cellular concrete meeting the following specifications: 1 part cement, 1 part fly ash, 8 parts sand, or an approved equal, and water. Provide cement meeting the requirements of standard spec 501.2.1 for Type 1L Portland Cement. Provide sand meeting the requirements of standard spec 501.2.5.3. Provide water meeting the requirements of standard spec 501.2.4.

B.3 Backfill Slurry

Backfill slurry shall meet the material and construction requirements of section 8.43.8 of the Standard Specifications for Sewer and Water.

C Construction

Abandon sewers according to section 3.2.24 of the SSSW. Bulkhead sewers that are to be abandoned in place with an 8-inch brick or concrete wall. Fill all sewers with cellular concrete.

D Measurement

The department will measure Abandoning Sanitary Sewer 10-Inch PVC by the linear foot of sewer, acceptably completed. The pipe will be measured horizontally to the nearest foot, through all manholes designated to be abandoned, from face to face of bulkheads, including the bulkhead thickness.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.5002	Abandoning Sanitary Sewer 10-Inch PVC	LF

Payment is full compensation for providing all materials including all excavating; for bulkheading and abandoning existing sanitary sewer with cellular concrete; for providing backfill slurry material; and for providing and maintaining all necessary bypass pumping for abandonment.

289. Precast Trench Drain, Item SPV.0090.8031; Temporary Precast Trench Drain, Item SPV.0090.8036.

A Description

This special provision describes providing a precast trench drain system and temporary precast trench drain systems as the plans show. Conform to standard spec 415 and 611 and as follows.

B Materials

B.1 Documentation

Submit manufacturer’s specifications, certifications, and installation instructions for grates, frames, connections, and precast drain channel two weeks before placement for engineer approval.

B.2 Frames and Grates

Furnish frames and grates manufactured of ductile iron conforming to ASTM A536 and meets AASHTO HS-25 load ratings for heavy duty high speed traffic. Ensure that frames and grates are one piece anchored into the body of the line drain, except where the plans show removable grates.

For removable grates, provide a repetitive minimum pullout resistance of 340 pounds per foot of length after completion of 1,000 hours of salt spray testing according to ASTM B117. Match removable grates to their frames in pairs before delivery to the worksite. Ensure that grates fit into frames without rocking. Furnish corrosion resistant locking devices for removable grates.

Secure the trench drain system in concrete according to the manufacturers specifications. Use concrete conforming to standard spec 415.2.1.

Furnish concrete curing compounds conforming to standard spec 415.2.4.

B.3 Precast Drain Channel

Furnish precast drain channel sections constructed of monolithic polymer concrete. Ensure that the interior surface of the channel is smooth below the level of the frame, grate, and associated connections. Use polymer concrete consisting of aggregate with either polyester resin or vinylester resin. Ensure that the polymer concrete conforms to the following:

Property	ASTM Test Method	VALUE
Compressive Strength	C-579	12,000 psi minimum
Tensile Strength	C-307	1,500 psi minimum
Flexural Strength	C-580	3,000 psi minimum
Moisture Absorption	C-140	5% max
Chemical Resistance	C-267	Pass
Freeze Thaw	C-666	1,600 minimum cycles without weight loss

C Construction

Excavate trench channel to the lines and grades the plans show. Grade and compact the bottom of the trench to provide firm and uniform bearing throughout.

Install the trench drain channel, trench drain joints, and connections according to manufacturers' instructions. Install trench drains to the lines and grades the plans show. Securely join sections of the precast drain channel to prevent separation during backfilling. Connect to existing drainage facilities as the plans show before placing concrete backfill.

Place concrete in channel without floating or shifting the line drain and without concrete segregation. Secure the frames or the line drain wall into the concrete with steel anchoring rods. Ensure that concrete backfill is flush with the adjacent surfaces and with the drain's frame. Texture the surface of the concrete with a broom or burlap to produce a durable, skid-resistant surface.

D Measurement

The department will measure Precast Trench Drain and Temporary Precast Trench Drain by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.8031	Precast Trench Drain	LF
SPV.0090.8036	Temporary Precast Trench Drain	LF

Payment is full compensation for providing precast trench drain; for excavation; aggregate base materials; for concrete backfill; and for removal/disposing of waste materials and restoring the site.

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290. Timber Lagging, Item SPV.0110.4000.

A Description

This special provision describes providing, furnishing, delivering, and installing all timber lagging for soldier pile and lagging walls. Perform work according to pertinent parts of the standard specifications, the plans, and these special provisions.

B Materials

Furnish materials that conform to lumber as specified in standard spec 507, except that preservative treatments according to standard spec 507.2.2.6 are not required and untreated lumber may be used. Use Douglas fir or Southern pine construction grade rough-cut lumber with a minimum thickness of 3-inches. Where necessary provide certification that the timber conforms to the grade, species, and other specified requirements.

C Construction

Place timber lagging from the top-down in sufficiently small lifts immediately after excavation to prevent erosion of materials into excavation. Before placing lagging, smooth the soil face to create a contact surface for the lagging. Backfill and compact large voids behind the lagging. Maintain a minimal gap between each vertically adjacent board for drainage between adjacent lagging sections. Never place lagging in tight contact to adjacent lagging.

D Measurement

The department will measure Timber Lagging by the 1000 foot board, acceptably completed. The department will compute the measured quantity from the theoretical pay limits the contract plans show. The department will make no allowance for wall area constructed above or below the theoretical pay limits. All work beyond the theoretical pay limits is incidental to the cost of work. The department will make no allowance for as-built quantities.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0110.4000	Timber Lagging	MBM

Payment is full compensation for furnishing, framing, installing, and the timber lagging.

291. Field Office Special, Item SPV.0135.0001.

A Description

This special provision describes furnishing, equipping, and maintaining field office facilities.

B Materials

Obtain engineer approval before providing an existing office building, or an existing building converted to office-type use. Ensure that the building meets all applicable health, fire, and building codes and standards. Provide first aid kits, fire extinguishers, and all other supplies required to meet all applicable health, fire, and building codes and standards. The field office must be located within 1 mile of the project limits.

Provide; maintain in clean good working condition; and stock lavatory with sanitary supplies, including a sufficient supply of soap; hand sanitizer; toilet paper; and paper towels. The on-site sanitary facilities must meet Federal, State, and local health department requirements at all times.

Equip these facilities with suitable natural and artificial lighting. Also provide adequate heating and air conditioning equipment and fuel necessary to maintain a temperature range from 68 F to 80 F during the hours occupied.

Equip:

- Doors and windows with locks.
- Exterior doors with dead bolt locks.
- Windows with exterior screens to allow adequate ventilation.

Provide approximately 8,000 square feet of interior useable floor space, including shared spaces, such as plan review areas, conference rooms, storage areas, meeting areas, hallways, and restrooms.

Meeting Area: Obtain engineer's approval of a suitably sized, open meeting area, including tables and folding chairs, to accommodate regularly scheduled meetings of 40 people, minimum 1000 sf. Include a 50-inch minimum wall mounted tv/monitor with appropriate cables to connect to a computer display, a 4' x 8' white board with dry erase markers and erasers, and phone jack with phone service. Provide one new speakerphone with a minimum of four wireless microphones.

Reception Area: Provide an area for a reception.

Break Room: Provide a kitchenette / break area.

Storage Room: 1,000 sf minimum with a door and two lock/key sets.

Work Station Cubicles: 36 work stations cubicles, each work station cubicle 64 sf minimum with dividers between each work station. Each work station requires a desk, shelf, 4-drawer file cabinet and two 110V electrical outlets.

Within footprint, there should be 6 private rooms with a minimum of 100 sf each, additionally equipped with a four-shelf bookcase, separate temperature control, a large lockable metal storage cabinet, a 4' x 3' whiteboard with dry-erase markers, and two110V electrical outlets. Supply the interior doors to these rooms with locks and key sets, independent of the main access key security.

Provide one ergonomically correct office chair in working condition, with, at a minimum, the following features for each of the work station cubicles and private rooms. The office chair requires the following:

- Five-legged base with casters
- High backrest

For all work stations and private rooms, provide unlimited high-speed internet service for exclusive department use via cable or DSL connection with a modem/router and capable of supporting cloud enabled file sharing, voice over internet protocol (VoIP), video conferencing, and web-based applications.

Ensure that system meets the following:

- Includes a wireless network for the field office.
- Can accommodate IPSec based VPN products.
- Has a broadband bandwidth range with minimum connection speed of 100 Mbps + 1/2 Mbps per user download and 20 Mbps upload. Coordinate network setup at the leased office with the WisDOT network team.
- Include a hard wire connection for internet meeting the minimum connection speed to each workstation.

Provide and install into the field office two telephone exchanges with local and long-distance service or VoIP phone network. The voice exchanges are to be configured so that the incoming calls for any voice exchange utilize an open exchange. The telephones and the communication services are for the sole use of the department staff.

Provide two new Windows 10 compliant, high-capacity color printer/photocopier/scanners capable of printing and copying up to 11" x 17" paper, with the ability to perform duplexing, sorting, stapling, and multiple sheet auto feeding, with a built-in scanner with the capability to scan black and white and color up to 11" x 17" at a minimum of 1200dpi, and with a direct or field office wireless network connection, as approved by the engineer.

Provide and maintain an adequate supply of bottled drinking water. Provide two refrigerators with a minimum 18 cubic foot capacity, including a freezer. Provide two microwave ovens with a minimum 1.1 cubic foot capacity, a minimum of 1000 watts, and a removable glass turntable.

Maintain the field office equipment and provide supplies for the photocopiers as requested by the engineer.

Provide for the professional cleaning of the field office during regular business hours once per week.

Provide carpet runners at all entrances. Clean weekly and replace as necessary or as directed by the engineer.

Provide clearly marked recycling and waste receptacles within the field office, and separate recycling and waste dumpsters near the field office. Cover outdoor containers to keep out rain, and snow. Provide regularly scheduled recycling and waste pick-up.

Include an adjacent, no-fee, lighted parking lot large enough to accommodate the needs of the field office at peak usage, as approved by the engineer. Maintain the parking lot and egress, including snow removal.

C Construction

Do not combine field offices, or combine them with, or attach them to, any buildings used by the contractor, unless the engineer allows in writing. The contractor may furnish, if the contract allows, the field offices jointly in cooperation with other contractors on designated projects.

Do not begin construction operations requiring the use of the field offices by the department until the required field offices are approved by the engineer, furnished, fully equipped, and made ready for use as the engineer directs.

The field office shall remain available for the department until the engineer approves its closure. These field facilities are for the sole use of the department and upon contract completion remain the contractor's property.

D Measurement

The department will measure Field Office Special by the month, or partial month where applicable, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0135.0001	Field Office Special	MON

Payment is full compensation for providing, equipping, securing, cleaning and maintaining the facility and associated parking lot; for telecommunications equipment, installation, and service fees; and for providing all incidentals, including bottled water, refrigerator/freezers, microwaves, utilities, fuel, safety, ventilation, toilet facilities, and office supplies as required, either independently or jointly, for the time specified in section C.

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292. Vibration Monitoring, Item SPV.0135.0150.

A Description

This special provision describes developing a vibration monitoring plan, deploying seismographs for continuous monitoring and recording, and submitting required documentation.

The contractor shall conduct and document a crack and damage survey of any buildings or structures identified in the crack and damage survey special provision of this contract prior to performing any vibration monitoring. The contractor is responsible for arranging with the property owner the right of entry to their property, to install, maintain, and remove vibration monitoring equipment.

Any damage resulting from excessive vibration due to the contractor's operations or claims of damage during construction is the responsibility of the contractor to resolve.

B Equipment

Use seismographs meeting the requirements of Wisconsin Department of Safety and Professional Services (SPS)307.43, Wisconsin Administrative Code, that are continuous data recorders supplied with all accessories for making vibration observations.

C Construction

C.1 General

Vibration Monitoring shall be performed if a building/structure is located within 200 feet of a vibration-inducing construction operation. Establish recordings at the closest location affected by the vibration-inducing construction operation by placing seismograph(s) on a stable surface within 3 feet of the building/structure.

C.2 Monitoring Plan

Submit a monitoring plan that includes the following:

- Location of each vibration-inducing construction operation to be monitored.
- Locations at which the approved seismographs will be placed.
- Anticipated vibration levels at the closest building(s) or other sensitive facility during the various activities.
- Anticipated monitoring duration for each monitoring location.
- A recommended maximum safe peak particle velocity threshold.
- Mitigation plan to reduce potentially excessive vibration levels to acceptable limits.

Obtain the engineer's acceptance of the monitoring plan prior to performing any vibration-inducing construction operation on the project.

C.3 Monitoring and Recording

Conduct monitoring procedures conforming to SPS 307.44 and as follows: Take seismograph readings before construction operations to establish an ambient or background index. Place seismographs to monitor all vibration-inducing construction operations per the accepted monitoring plan.

Monitor the following construction operations for their entire duration:

- Bridge demolition.
- Bridge and sign bridge pile driving.
- Sheet pile installation and removal.
- Drilled Shaft installation.
- MSE wall compaction.
- All compaction activities utilizing large vibratory rollers.
- Any other activities that may cause vibration damage to adjacent buildings, structures, or utilities.

If construction operations exceed the maximum peak particle velocity limits as established in the contractor’s monitoring plan, according to SPS 304.7, stop the construction operation in progress and notify the engineer. Implement alternate construction methods to produce results within the allowable peak particle velocity limits.

C.4 Reporting

Furnish a monthly report of data recorded to the engineer.

Include the following in the report:

- Date vibration monitoring operations began for each location with an associated compilation of total days currently monitored at each site.
- Identification of vibration inducing construction operations monitored each day at each location.
- Serial number of vibration monitoring instrument used and record of latest calibration.
- Description of contractor's equipment.
- Name of observer and interpreter.
- Distance and direction of recording station from vibration source.
- Surficial material type at recording station.
- Principal frequency and particle velocity in each component direction.
- Copy of records of seismograph readings.
- Contractor documentation of any operational changes necessary to reduce vibration below nuisance levels.

D Measurement

The department will measure Vibration Monitoring acceptably completed by calendar month when an active seismograph is recording in a given month or a portion thereof, according to the accepted monitoring plan or as approved by the engineer.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0135.0150	Vibration Monitoring	MON

Payment is full compensation for coordination with property owners, for providing, setting up and removal of all seismographs according to the accepted monitoring plan, providing the vibration monitoring plan including any monthly updates, performing continuous monitoring and recording of vibrations, and for providing the monthly reports and all other required documentation.

293. Wall Modular Block Mechanically Stabilized Earth, Item SPV.0165.0001.

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system according to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the wall and all wall components shall be 75 years minimum.

This special provision describes the quality management program (QMP) for Mechanically Stabilized Earth (MSE) walls. A quality management program is defined as all activities, including process control, inspection, sampling and testing, and necessary adjustments in the process that are related to the construction of the MSE wall, which meets all the requirements of this provision.

This special provision describes contractor quality control (QC) sampling and testing for backfill density testing, documenting those results, and documenting related production and placement process changes. This special provision also describes department quality verification (QV), independent assurance (IA), and dispute resolution.

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Modular Block Mechanically Stabilized Earth Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The location of the plant manufacturing the facing units shall be furnished to the engineer at least 14 days prior to the project delivery.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section at the following email address: DOTDLStructuresFabrication@dot.wi.gov.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit shop drawings to the engineer conforming to 105.2 with electronic submittal to the fabrication library under 105.2.2. Certify that shop drawings conform to quality control standards by submitting department form DT2329 with each set of shop drawings. Department review does not relieve the contractor from responsibility for errors or omissions on shop drawings. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as stated on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratio (CDR) for sliding, eccentricity, and bearing checks is provided by the department and are provided on the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and wall facing-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

Wall facing units shall be designed according to AASHTO LRFD 11.10.2.3.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 6.0 feet. The soil reinforcement length shall be the same from the bottom to the top of the wall. All soil reinforcement layers shall be connected to facings. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be two times the block width (front face to back face) or 32 inches, whichever is less. The first (bottom) layer of reinforcement shall be placed no further than 12 inches above the top of the leveling pad or the height of the block, but at least one block height above the leveling pad. The last (top) layer of soil reinforcement shall be no further than 21 inches below the top of the uppermost block.

All soil reinforcement required for the reinforced soil zone shall be connected to the wall facing.

Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. Unless approved by the Bureau of Structures cutting or altering of the basic structural section of either the strip or grid at the site is prohibited, a minimum clearance of 3" shall be maintained between any obstruction and reinforcement, and splicing reinforcement is not allowed.

The minimum embedment of the wall shall be 1 foot 6 inches below finished grade, or as given on the plans. All walls shall be provided with a concrete leveling pad. Minimum wall embedment does not include the leveling pad depth. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad.

Wall facing units shall be installed on a leveling pad.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Wall Facing

Wall facing units shall consist of precast modular concrete blocks. Furnish concrete produced by a dry-cast or wet-cast process. Concrete for all blocks shall not contain less than 565 pounds of cementitious materials per cubic yard. The contractor may use cement conforming to standard spec. 501.2.1 or may substitute for portland cement at the time of batching conforming to standard spec. 501.2.6 for fly, 501.2.7 for slag, or 501.2.8 for other pozzolans. In either case the maximum total supplementary cementitious content is limited to 30% of the total cementitious content by weight.

Dry-cast concrete blocks shall be manufactured according to ASTM C1372 and this specification.

All units shall incorporate a mechanism or devices that develop a mechanical connection between vertical block layers. Units that are broken, have cracks wider than 0.02” and longer than 25% of the nominal height of the unit, chips larger than 1”, have excessive efflorescence, or are otherwise deemed unacceptable by the engineer, shall not be used within the wall. A single block front face style shall be used throughout each wall. The color and surface texture of the block shall be as given on the plan.

The top course of facing units shall be as noted on the plans:

- A formed, reinforced, cast-in-place concrete cap. A cap of this type shall have texture, color, and appearance, as noted on the plans. The vertical dimension of the cap shall not be less than 3 ½ inches. Expansion joints shall be placed in the cap at a maximum spacing of 20 feet unless noted otherwise on the plan. Use Grade A, A-FA, A-S, A-T, A-IS, A-IP or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast-in-place cap and coping concrete as specified in standard spec 716, Class II Concrete. Cast-in-place concrete cap shall be designed to provide attachment of railing pipe and minimum width as noted in the plans. Concrete cap shall be designed to hold railing pipe and provide resistance to impact of the railing by pedestrian, bicycle or motor vehicle.

Block dimensions may vary no more than ±1/8 inch from the standard values published by the manufacturer. Blocks must have a minimum width (front face to back face) of 8 inches. The minimum front face thickness of blocks shall be 4 inches measured perpendicular from the front face to inside voids greater than 4 square inches. The minimum allowed thickness of any other portions of the block is 1¾ inches. The front face of the blocks shall conform to plan requirements for color, texture, or patterns.

If pins are used to align modular block facing units, they shall consist of a non-degrading polymer, or hot dipping galvanized steel and be made for the express use with the modular block units supplied, to develop mechanical interlock between facing unit block layers. Connecting pins shall be capable of holding the wall in the proper position during backfilling. Furnish documentation that establishes and substantiates the design life of such devices.

B.3.1.1 Material Testing

Provide independent quality verification testing of project materials according to the following requirements:

Test	Method	Requirement	
		Dry-cast	Wet-cast
Compressive Strength (psi)	ASTM C140	5000 min.	4000 min.
Air Content (%)	AASHTO T152	N/A	6.0 +/-1.5
Water Absorption (%)	ASTM C140	6 max.[3]	N/A
Freeze-Thaw Loss (%) 40 cycles, 5 of 5 samples 50 cycles, 4 of 5 samples	ASTM C1262[1]	1.0 max.[2][3] 1.5 max.[2][3]	N/A

[1] Test shall be run using a 3% saline solution and blocks greater than 45 days old.

[2] Test results that meet either of the listed requirements for Freeze-Thaw Loss are acceptable.

[3] The independent testing laboratory shall control and conduct all sampling and testing. Prior to sampling, the manufacturer's representative shall identify materials by lot. Five blocks per lot shall be randomly selected for testing. Solid blocks used as a finishing or top course shall not be selected. The selected blocks shall remain under the control of the person who conducted the sampling until shipped or delivered to the testing laboratory. All pallets of blocks within a lot shall be strapped or wrapped to secure the contents and tagged or marked for identification. The engineer will reject any pallet of blocks delivered to the project without intact security measures. At no expense to the department, the contractor shall remove all rejected blocks from the project. If a random sample of five blocks of any lot tested by the department fails to meet any of the above testing requirements, the entire lot will be considered non-conforming.

The contractor and fabricator shall coordinate with the independent testing agency to ensure that strength and air content samples can be taken appropriately during manufacturing. At the time of delivery of materials, furnish the engineer a certified report of test from an AASHTO-registered or ASTM-accredited independent testing laboratory for each lot.

The certified test report shall include the following:

- Project ID
- Production process used (dry-cast or wet-cast)
- Name and location of testing facility
- Name of sampling technician
- Lot number and lot size

Testing of project materials shall be completed not more than 18 months prior to delivery. Independent testing frequency shall not exceed 5000 blocks for dry-cast blocks and the lesser of 150 CY or 1 day's production for wet-cast blocks. The certified test results will represent all blocks within the lot. Each pallet of blocks delivered shall bear lot identification information. Block lots that do not meet the requirements of this specification or blocks without supporting certified test reports will be rejected and shall be removed from the project at no expense to the department.

Nonconforming materials will be subject to evaluation according to standard spec 106.5.

B.3.2 Leveling Pad

Provide an unreinforced cast-in-place concrete leveling pad. Use Grade A, A-FA, A-S, A-T, A-IS, A-IP, or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete.

The minimum width of the concrete leveling pad shall be as wide as the proposed blocks plus 6-inches, with 3-inches of the leveling pad extending beyond the front face of the blocks. The minimum thickness of the leveling pad shall be 12-inches.

B.3.3 Backfill

Furnish and place backfill for the wall as shown on the plans and as hereinafter provided.

Wall Backfill, Type A, shall comply with the requirements for Coarse Aggregate No. 1 as given in standard spec 501.2.5.4.4. All backfill placed within a zone from the top of the leveling pad to the top of the final layer of wall facing units and within 1 foot behind the back face of the wall shall be Wall Backfill, Type A. This includes all material used to fill openings in the wall facing units.

Wall Backfill, Type B, shall be placed in a zone extending horizontally from 1 foot behind the back face of the wall to 1 foot beyond the end of the reinforcement and extending vertically from the top of the leveling pad to a minimum of 3 inches above the final reinforcement layer.

Use natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. Do not use foundry sand, bottom ash, blast furnace slag, crushed/recycled concrete, crushed/milled asphaltic concrete or other potentially corrosive material.

Provide material conforming to the following gradation requirements as per AASHTO T27.

Sieve Size	% by Weight Passing
1 inch	100
No. 40	0 - 60
No. 200	0 - 15

The material shall have a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90. Provide the percent by weight, passing the #4 sieve.

In addition, backfill material Type A and Type B shall meet the following requirements.

Test	Method	Value
pH	AASHTO T-289	4.5-9.0
Sulfate content [1]	AASHTO T-290	200 ppm max.
Chloride content [1]	AASHTO T-291	100 ppm max.
Electrical Resistivity [1]	AASHTO T-288	3000 ohm-cm min.
Organic Content [1]	AASHTO T-267	1.0% max.
Angle of Internal Friction	AASHTO T-236[2]	30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2)

[1] Requirement does not apply to walls with non-metallic reinforcement and non-metallic connectors.

[2] If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM D5821, on the R-4 material. If more than 90% of the material is fractured on one face and more than 50% is fractured on two faces, the material meets the specifications and the angle of internal friction can be assumed to be 30 degrees. The second method allows testing all P-1” material, as per AASHTO T-236, with a large shear box. Test results of this second method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. For the additional required testing for every 2000 cubic yards of backfill placement, if the characteristic of the backfill and/or the source has not changed then Angle of Internal Friction tests are not included in the additional required testing. All

certified reports of test results shall be less than 6 months old and performed by a certified independent laboratory.

B.3.4 Soil Reinforcement

B.3.4.1 Geogrids

Geogrid supplied as reinforcing members shall be manufactured from long chain polymers limited to polypropylene, high-density polyethylene, polyaramid, and polyester. Geogrids shall form a uniform rectangular grid of bonded, formed, or fused polymer tensile strands crossing with a nominal right angle orientation. The minimum grid aperture shall be 0.5 inch. The geogrid shall maintain dimension stability during handling, placing, and installation. The geogrid shall be insect, rodent, mildew, and rot resistant. The geogrid shall be furnished in a protective wrapping that shall prevent exposure to ultraviolet radiation and damage from shipping or handling. The geogrid shall be kept dry until installed. Each roll shall be clearly marked to identify the material contained.

The wall supplier shall provide the nominal long-term design strength (T_{al}) and nominal long-term connection strength, Talc as discussed below.

Nominal Long-Term Design Strength (T_{al})

The wall supplier shall supply the nominal long-term design strength (T_{al}) used in the design for each reinforcement layer and shall be determined by dividing the Ultimate Tensile Strength (T_{ult}) by the factors RF_{ID}, RF_{CR}, RF_D.

Hence,

$$T_{al} = \frac{T_{ult}}{RF_{ID} x RF_{CR} x RF_D}$$

where:

T_{ult}	=	Ultimate tensile strength of the reinforcement determined from wide width tensile tests (ASTM D6637) for geogrids based on the minimum average roll value (MARV) for the product.
RF_{ID}	=	Strength reduction factor to account for installation damage to the reinforcement. In no case shall RF_{ID} be less than 1.1.
RF_{CR}	=	Strength reduction factor to prevent long-term creep rupture of the reinforcement. In no case shall RF_{CR} be less than 1.2.
RF_D	=	Strength reduction factor to prevent rupture of the reinforcement due to chemical and biological degradation. In no case shall RF_D be less than 1.1.

Values for RF_{ID}, RF_{CR}, and RF_D shall be determined from product specific test results. Guidelines for determining RF_{ID}, RF_{CR}, and RF_D from product specific data are provided in FHWA Publication No. FHWA-NHI-10-024 and FHWA–NHI-10-025 “Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soll Slopes”.

Nominal Long-term Connection Strength T_{ac}

The nominal long term connection strength, T_{ac}, shall be based on laboratory geogrid connection tests between wall facing and geogrids. T_{ac} shall be as given below

$$T_{ac} = \frac{T_{ult} * CR_{cr}}{RF_D}$$

where:

T_{ac}	=	Nominal long-term reinforcement facing connection strength per unit reinforcement width at a specified confining pressure.
T_{ult}	=	Ultimate tensile strength of the reinforcement for geogrids defined as the minimum average roll value (MARV) for the product.

CR_{cr} = Long term connection strength reduction factor to account for reduced ultimate strength resulting from connection.

RF_D = Strength reduction factor to prevent rupture of the reinforcement due to chemical and biological degradation.

T_{ac} shall be developed from the tests conducted by an independent laboratory on the same facing blocks and geogrids as proposed for the wall and shall cover a range of overburden pressures comparable to those anticipated in the proposed wall. The connection strength reduction factor CR_{cr} shall be determined according to long-term connection test as described in Appendix B of FHWA Publication No. FHWA-NHI 10-025 “Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes”. CR_{cr} may also be obtained from the short term connection test meeting the requirements of NCMA test method SRWU-1 in Simac et al 1993 or ASTM D4884.

The contractor shall provide a manufacturer’s certificate that the Tult (MARV) of the supplied geogrid has been determined according to ASTM D4595 or ASTM D6637 as appropriate. Contractor shall also provide block to block and block to reinforcement connection test reports prepared and certified by an independent laboratory. Also provide calculations according to AASHTO LRFD, and using the results of laboratory tests, that the block-geogrid connections shall be capable of resisting 100% of the maximum tension load in the soil reinforcements at any level within the wall, for the design life of the wall system.

B.3.4.2 Galvanized Metal Reinforcement

In lieu of polymeric geogrid earth reinforcement, galvanized metal reinforcement may be used. Design and materials shall be according to AASHTO LRFD 11.10.6.4.2. The design life of steel soil reinforcements shall also comply with AASHTO LRFD. Steel soil reinforcement shall be prefabricated into single or multiple elements before galvanizing.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the MSE wall and the leveling pad shall be according to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the leveling pad unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction. Backfilling shall closely follow erection of each course of wall facing units.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facing units, soil reinforcement, or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place and compact material beyond the reinforced soil zone to allow for proper compaction of material within the reinforced zone. The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back face of modular blocks. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing units.

C.2 Compaction

Compact wall backfill Type A with at least three passes of lightweight manually operated compaction equipment acceptable to the engineer.

Compact all backfill Type B as specified in standard spec 207.3.6. Compact the backfill Type B to 95.0% of maximum dry density as determined by AASHTO T-99 (modified to compute densities to the nearest 0.1 pcf).

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the modular blocks. Do not use sheepsfoot or padfoot rollers within the reinforced soil zone.

A minimum of 6 inches of backfill shall be placed over the MSE reinforcement prior to working above the reinforcement.

C.3 Wall Components

C.3.1 General

Erect wall facing units and other associated elements according to the wall manufacturer's construction guide and to the lines, elevations, batter, and tolerances as shown on the plans. Center the initial layer of facing units on the leveling pad; then level them and properly align them. Fill formed voids or openings in the facing units with wall backfill, Type A. Remove all debris on the top of each layer of facing units, before placing the next layer of facing units.

Install all pins, rods, clips, or other devices used to develop mechanical interlock between facing unit layers according to the manufacturer's directions.

The MSE reinforcement shall lay horizontally on the top of the most recently placed and compacted layer of MSE backfill. Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstructions in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

C.3.2 Leveling Pad

Provide an unreinforced cast-in-place concrete leveling pad as shown on the plans.

Vertical tolerances shall not exceed 3/4-inch when measured along a 10-foot straight edge. Allow the concrete to set at least 12 hours prior to placing wall facing units.

The bottom row of wall facing units shall be horizontal and 100% of the unit surface shall bear on the leveling pad.

C.3.3 Soil Reinforcement

C.3.3.1 Geogrid Layers

Place soil reinforcement at the positions and to the lengths as indicated on the accepted shop drawings. Take care that backfill placement over the positioned soil reinforcement elements does not cause damage or misalignment of these elements. Correct any such damage or misalignment as directed by the engineer. Do not operate wheeled or tracked equipment directly on the soil reinforcement. A minimum cover of 6 inches is required before such operation is allowed.

Place and anchor geogrid material between wall unit layers in the same manner as used to determine the Geogrid Block-to-Connection Strength. Place the grid material so that the machine direction of the grid is perpendicular to the wall face. Each grid layer shall be continuous throughout the lengths indicated on the plans. Join grid strips with straps, rings, hooks or other mechanical devices to prevent movement during backfilling operations. Prior to placing backfill on the grid, pull the grid taunt and hold in position with pins, stakes or other methods approved by the engineer.

C.3.3.2 Steel Layers

Place the steel reinforcement full width in one piece as shown on the plans. No splicing will be allowed. Maintain elements in position during backfilling.

C.4 Quality Management Program

C.4.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform MSE wall construction work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review and acceptance. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
3. A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Descriptions of stockpiling and hauling methods.
5. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
6. Location of the QC laboratory retained sample storage, and other documentation.
7. A summary of the locations and calculated quantities to be tested under this provision.
8. A proposed sequencing plan of wall construction operations and random test locations.

C.4.2 Quality Control Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at each grading site during all wall backfill placement, compaction, and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

If an Assistant Certified Technician (ACT) is performing sampling or testing, a certified technician must coordinate and take responsibility for the work an ACT performs. Have a certified technician Ensure that all sampling and testing is performed correctly, analyze test results, and post resulting data. No more than one ACT can work under a single certified technician.

C.4.3 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department’s approved product list at:

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/default.aspx

Ensure that the nuclear gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to AASHTO T310 and CMM 8-15 for density testing and gauge monitoring methods.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department’s split samples to the department

C.4.4 Documentation

(1) Document all observations, inspection records, and process adjustments daily. Submit test results to the department's project materials coordinator on the same day they become available.

(2) Use forms provided in CMM Chapter 8. Note other information in a permanent field record and as a part of process control documentation enumerated in the contractor's quality control plan. Enter QC data and backfill material certified report results into the applicable materials reporting system (MRS) software within 5 business days after results are available.

(3) Submit final testing records and other documentation to the engineer electronically within 10 business days after all contract-required information becomes available. The engineer may allow submission of scanned copies of hand-written documentation.

C.4.5 Quality Control (QC) Testing

Perform compaction testing on the backfill. Conform to CMM 8-15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of 1 test per 150 cubic yards of backfill, or major portion thereof in each lift. A minimum of one test for every lift is required. Deliver documentation of all compaction testing results to the engineer at the time of testing.

Perform 1 gradation test every 750 cubic yards of fill and one 5-point Proctor test (or as modified in C.2) every 2,250 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM Method D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

C.4.6 Department Testing

C.4.6.1 General

(1) The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all QV and IA personnel for the project and provide test results to the contractor within 2 business days after the department obtains the sample.

C.4.6.2 Quality Verification (QV) Testing

(1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.4.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.

(2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.

(3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.

(4) The department will conduct QV Proctor and gradation tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.

(5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.6.3 Independent Assurance (IA)

(1) Independent assurance is unbiased testing the department performs to evaluate the department's QV and the contractor's QC sampling and testing, including personnel qualifications, procedures, and equipment. The department will perform an IA review according to the department's independent assurance program. That review may include one or more of the following:

1. Split sample testing.
2. Proficiency sample testing.
3. Witnessing sampling and testing.
4. Test equipment calibration checks.
5. Reviewing required worksheets and control charts.
6. Requesting that testing personnel perform additional sampling and testing.

(2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.6.4.

C.4.6.4 Dispute Resolution

(1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E178 to evaluate potential statistically outlying data.

(2) Production test results, and results from other process control testing, may be considered when resolving a dispute.

(3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product or work, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C.5 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils Engineer two working days to review the foundation.

D Measurement

The department will measure Wall Modular Block Mechanically Stabilized Earth by the square foot acceptably completed. The department will compute measured quantities from the theoretical pay limits the contract plans show. The department will make no allowance for wall area constructed above or below the theoretical pay limits. All work beyond the theoretical pay limits is incidental to the cost of work. The department will make no allowance for as-built quantities.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.0001	Wall Modular Block Mechanically Stabilized Earth	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system including cap, leveling pad, and leveling pad steps; constructing the retaining system and providing temporary drainage; providing backfill, backfilling, compacting, developing/completing/documenting the quality management program, and performing compaction testing.

The department will pay separately for parapets, traffic barriers, railings, and other items above the wall cap or coping.

294. Temporary Shoring Railroad, Item SPV.0165.4000.

A Description

This special provision describes furnishing and installing temporary shoring at locations alongside railroad tracks and supporting railroad loading as shown in the plan and according to the shoring design requirements.

B Materials

B.1 Shoring Design

Provide an effective shoring system capable of withstanding Coopers E-80 live load surcharge, and which complies with OSHA and Federal Railroad Administration (FRA) requirements. For reference, use "Guidelines For Temporary Shoring" published by Union Pacific Railroad (UPRR) and The Burlington Northern and Santa Fe Railway (BNSF), and refer to the UPRR General Shoring Zones diagram inserted at the end of this special provision. A copy of these guidelines may be obtained from the department at the Bureau of Railroads and Harbors, 4802 Sheboygan Avenue, Madison, Room 701 or at:

http://www.up.com/customers/ind-dev/operations/specs/.

Refer to standard spec 107.17.1(6) and (7) regarding the development and submittal of shop drawings, detailed plans, and computations for temporary construction near the UPRR's tracks. Consider using continuous supporting elements, such as sheet piling, which is UPRR's preference for shoring type, (although soldier pile and lagging may be approved under certain conditions). Comply with AREMA 8-28.5.1.1a&b or 8-28.5.3.1a&b which governs maximum heights of cantilever sheet piling or soldier pile and lagging walls. Incorporate anchors for these shoring types with heights above these limits. Include in the submitted drawings and plans the proposed method of installation and removal of the shoring not included in the contract plans. In all calculations, take into consideration railroad surcharge loading and design the shoring to meet Coopers E-80 live loading.

C Construction

The UPRR will coordinate train operations with the contractor to the extent possible, consistent with its operational requirements. The number and duration of work windows free of train operations available per day will vary depending on operational requirements and are subject to change during the project schedule. At the end of each window, leave the construction area in a condition that will allow for safe and normal train operations. Do not leave shoring extended above the top of rail within 15'-0" from the centerline of the nearest track. Contact the following at least three working days in advance of construction operations that require implementation of the temporary shoring:

Chris Keckeisen
Engineering Design – Public Projects
Union Pacific Railroad Company
1400 Douglas Street – Stop 0910
Omaha, NE 68179-0910
Telephone: (402) 544-5131
Email ctkeckei@up.com

Provide, install and maintain adequate protection for people within the UPRR's right-of-way. Cover, guard, and/or protect all excavations, holes, or trenches within the UPRR's right-of-way when they are not being worked on. When leaving work site areas at night and over weekends, secure the areas and leave them in a condition that will ensure that railroad employees and other personnel, who may be working or passing through the area, are protected around excavations. Install handrails that are parallel to the track and not less than 15'-0" from the centerline of the nearest track. Handrails, fences, or other barrier methods must meet OSHA and FRA requirements. Backfill all excavations as soon as possible.

Upon completion of the need for the temporary shoring, remove all elements of the shoring within UPRR right-of-way. Backfill the space that is excavated but not occupied by the new permanent construction according to standard spec 206.3.13.

D Measurement

The department will measure Temporary Shoring Railroad items in area by the square foot, acceptably completed at locations the plans show, measured as the area of exposed face in the plane of the shoring from the ground line in front of the shoring to a maximum of one foot above the retained grade. Shoring used for staged construction in multiple configurations without removal and reinstallation will be measured once based on the configuration with the largest area of exposed face.

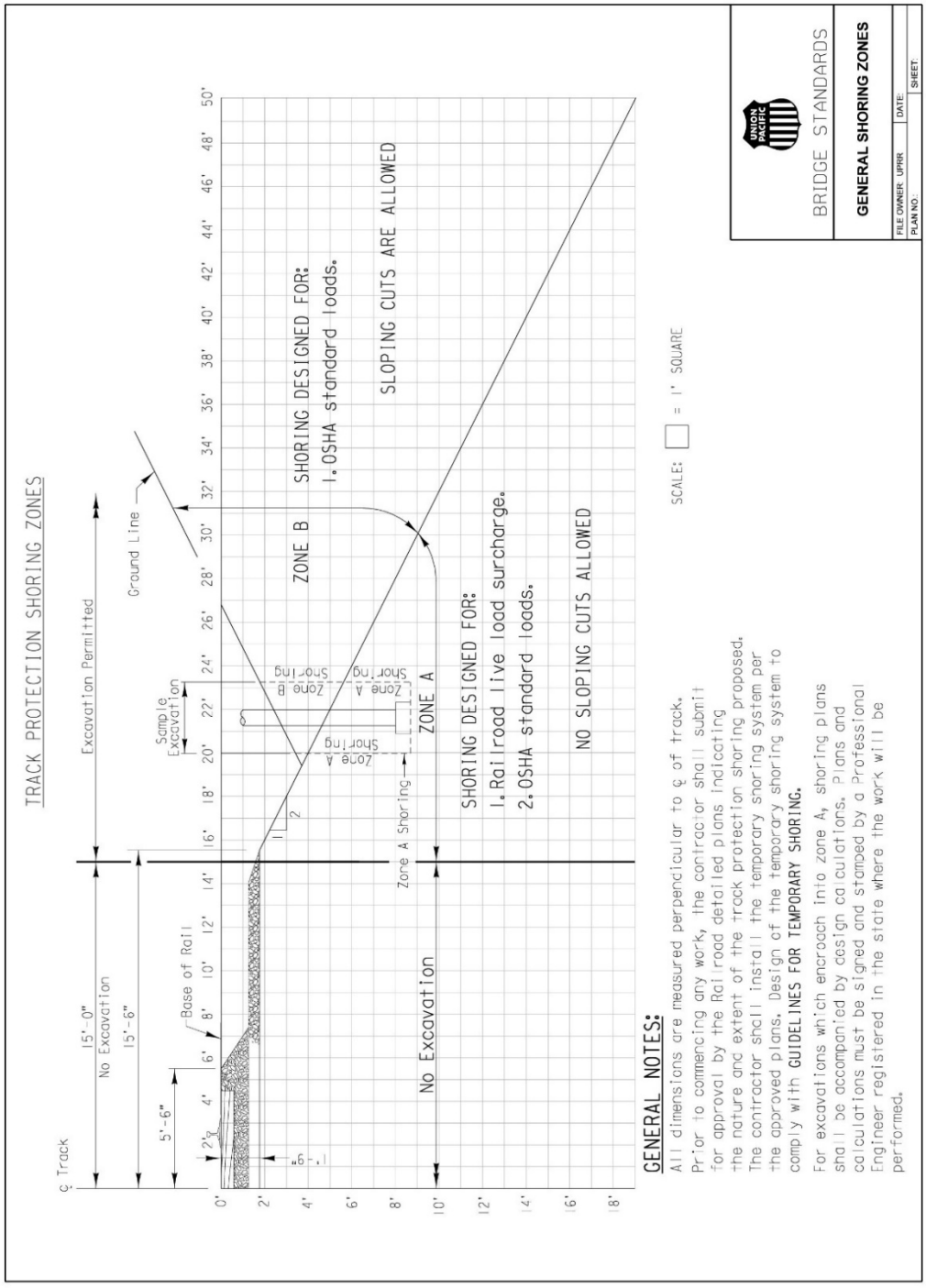
E Payment

The department will pay for the measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.4000	Temporary Shoring Railroad	SF

Payment is full compensation for providing a verified design of the shoring; providing shop drawings and detailed plans; furnishing and hauling materials to each location; installing the shoring; maintaining the shoring as needed; removing the shoring; and for backfilling upon completion of the need for the shoring.

Temporary shoring not required by the plans and installed for the convenience of the contractor's operations shall be considered incidental to work under this contract and will not be measured and paid for under this item.



295. Precast Concrete Modular Retaining Wall, Item SPV.0165.4005; Precast Concrete Modular Wingwall, Item SPV.0165.4006.

A Description

A.1 General

This section describes the design, manufacture, and construction of a precast concrete modular retaining wall to the lines, grades, and dimensions shown in the contract plans, according to this specification, and as directed by the engineer or the UPRR engineer.

The precast concrete modular retaining wall shall consist of precast concrete units, an unreinforced concrete leveling pad and excavation to install this leveling pad, drainage materials, and a reinforced concrete drainage swale at the top of the wall per the contract plans. The materials, fabrication, and construction shall comply with this special provision, and the requirements specified by the supplier of the wall system selected by the contractor for use on the project.

A.2 Conceptual Design Prequalification

The precast concrete units shall be composed of a precast concrete front face and a precast concrete stem embedded into the retained fill. The maximum required stem length calculated by the manufacturer in a particular cross section shall be located on the bottom horizontal course of this wall; the stem lengths may be reduced, per manufacturer's design, in successive horizontal courses stacked on top of the bottom course. Mechanically Stabilized Earth (MSE) walls are not allowed. Precast Modular Block Walls are not allowed.

The following wall type and design supplier is prequalified to design and fabricate precast concrete modular retaining walls for this project:

T-WALL® Retaining Wall System

The Reinforced Earth Company (RECo)
12200 West Colonial Drive, Suite 305
Winter Garden, FL 34787
(407) 226-2840
Contact: Paul B. Michiels, Mobile: (813) 340-7799

A.3 Design

Design shall be according to the following criteria (listed in order of governance):

AREMA Manual for Railway Engineering, 2021 Edition

WisDOT Bridge Manual, 2021 Edition

AASHTO LRFD Bridge Design Specifications, 7th Edition.

The design life of the precast concrete modular retaining wall and all wall components shall be 75 years.

A.4 Loads

Use a Cooper E80 live load surcharge as calculated per AREMA Section 8-2.2.3c.

Use a live load surcharge as calculated per AREMA Section 8-20.3.2.2.

A.5 Foundation Analysis

A geotechnical investigation is part of the Geotechnical Exploration and Analysis Report. The contractor is strongly advised to obtain and consult the Geotechnical Exploration and Analysis Reports for the applicable retaining wall structures. The contractor shall be responsible to have a qualified geotechnical engineer on site to verify that the foundation has been prepared properly and that the foundation can support the loads.

A.6 Stability Analysis

Minimum factors of safety are:

Sliding:	1.5
Overturning:	2.0
Bearing Capacity:	3.0
Global Stability:	1.5
Pullout:	1.5

B Materials

B.1 General

Furnish the following materials conforming to the following criteria:

AREMA Manual for Railway Engineering, 2015 Edition.

Precast Concrete ..... Section 8-1.2

..... Section 8-1.3

..... Section 8-1.4

..... Section 8-1.5

……Section 8-1.7

Adhesive Anchors ..... Section 8-1.23

Coated High Strength Bar Steel Reinforcement ..... Section 8-1.6

Welded Steel Wire Fabric for Concrete Reinforcement ..... Section 8-1.6

Structural Steel and Miscellaneous Metals ..... Section 15-1.2.1

Elastomeric Bearing Pads……Section 15-5.6
……...Section 15-5.12

Provide the above materials with supplemental criteria conforming to the following WisDOT specifications (in cases where the following conflicts with the 2015 AREMA sections listed above, the 2015 AREMA sections govern):

Precast Concrete ..... section 501

Adhesive Anchors ..... section 502

Coated High Strength Bar Steel Reinforcement ..... section 505

Welded Steel Wire Fabric for Concrete Reinforcement ..... section 505

Structural Steel and Miscellaneous Metals ..... section 506

Elastomeric Bearing Pads ..... section 506

Geotextile Fabric ..... section 645

The units shall be manufactured in an NPCA, PCI or WisDOT certified precast concrete plant.

B.2 Concrete

Furnish concrete as specified in AREMA Section 8-1. Submit all concrete mixes to the engineer and the UPRR engineer for approval before fabricating modular wall units.

Self-consolidating concrete (SCC) is permitted, based on satisfactory test results approved by the engineer and the UPRR engineer. Cast a test panel when a WisDOT-approved inspector is present. Base the self-consolidating concrete properties on the test panel.

Ensure concrete attains a minimum 28-day compressive strength of 5,000 pounds per square inch. Base all tests on 6-inch by 12-inch cylinders, or 4-inch by 8-inch cylinders, provided the engineer or the UPRR engineer develops and approves a correlation factor. Mold concrete cylinders in suitable steel or plastic molds. Cure concrete cylinders according to ASTM C31, except cure the cylinders with the member until release strength is obtained, then cure the cylinders according to ASTM C31.

The contractor shall make and test the cylinders and make available to the engineer and the UPRR engineer all information relating to the making and testing of cylinders. Notify the engineer and the UPRR engineer immediately if concrete cylinder compressive strengths are less than the required 28-day strength. Keep neatly documented records of all cylinder testing on the day of the test and make them available to the engineer and the UPRR engineer. Provide copies of the tests to the engineer and the UPRR engineer by contract completion.

Furnish precast concrete units cast from air entrained concrete. Use type I, IS, I(SM), IP, II, or III cement. The contractor may use fly ash as permitted by AREMA Section 8-1.3.Use only one source and replacement rate for work under a single bid item. Use an AREMA approved air entraining admixture conforming to AREMA Section 8-1.7 for air entrained concrete. Use only size No. 1 coarse aggregate conforming to AREMA Section 8-1.4.

The contractor shall determine proportions for the mix within the following limitations:

Water cement ratio	not greater than 0.45
Cement content, pounds per cubic yard of concrete	610-705
Air content of concrete, percent maximum	3.5-6.0
Slump of mixed concrete, maximum	4 inches

If the mix does not contain a high range water reducer admixture, use an AREMA approved set retarding admixture as specified in Section 8-1.7 at the recommended rate if the ambient air temperature is 70 degrees F (21 degrees C) or higher.

The contractor shall not add more admixtures or water after mixing is complete.

Use admixtures that do not have significant chlorides or chlorides added during manufacture.

Use admixtures that are compatible with all ingredients of the concrete mixture.

The leveling pad and drainage swale concrete shall have a minimum 28-day compressive strength of 3,500 pounds per square inch. Under normal circumstances, the leveling pad strength is considered acceptable for placement of the precast concrete wall units after 24 hours of cure. No reinforcement is required in the cast-in-place leveling pad; cast reinforcement per subsection B.3 in the drainage swale as the plans show.

B.3 Reinforcement

Use high tensile strength bar steel reinforcement conforming to AREMA Section 8-1.6, grade 60.

The minimum concrete cover shall be according to the reference specifications:

Primary reinforcement……..2”

Stirrups, ties……1 ½”

Reinforcement cage fabrication by welding shall not be permitted.

B.4 Plant Certification

Obtain all precast concrete wall units from fabrication plants that comply with the department’s plant certification program, unless the engineer and the UPRR engineer agree to accept these items according to the alternate procedures set forth in the department’s plant certification program.

B.5 Lifting Devices

The type, number and locations of lifting devices and the method of handling the precast units is determined by the fabricator and approved by the engineer and the UPRR engineer. Do not locate lifting devices in the surface of the precast units facing opposite the railroad.

B.6 Accessories and Inserts

Materials:

Shims: High-density plastic or galvanized steel, 1/8-inch thick, smooth both sides

Carbon steel plate: ASTM A 283

Welded headed studs: AWS D1.1 – Type B

Bolts, nuts, rods, washers: AREMA Section 15-1.2

Joint Material: Closed cell 100% virgin chloroprene (neoprene) rubber spacer pads with a minimum 60 durometer hardness per 2015 AREMA Chapter 8.18.2

Inserts: Galvanized with minimum 12 Gage steel conforming to ASTM A1011 SS GR 33 or ASTM A653 GR 33 A. Inserts anchors to have 1 1/2-inch minimum cover.

Geotextile Fabric, Type DF Schedule B: as per standard spec 645.2.4, except that the grab tensile strength shall be a minimum of 180 pounds in both the machine and cross-machine directions.

Zinc coated fabrications: Conform to ASTM A123 for fabricating zinc coated work.

C Construction

C.1 Design Requirements

Design the precast units and components to withstand initial handling, transportation, and erection stress limits; dead loads; live loads; live load surcharge; and other loads specified in conformance with 2021 AREMA Manual Group Loading Combinations.

Provide minimum temperature and shrinkage reinforcement as required by the 2021 AREMA Manual Section 8-2.12.

The precast concrete modular wall designer shall provide technical assistance at the start of the modular wall installation to observe that the contractor is following the proper installation procedure according to the manufacturer's recommendations.

At each unit foundation level, two leveling pads shall be provided as shown on the approved design drawings. Leveling pads shall be level and flat within ± ¼ inch per 15 feet. Leveling pads that do not meet this requirement shall be repaired or replaced as directed by the engineer or the UPRR engineer at no additional cost to the department.

C.2 Submittals

Design drawings shall conform to the contract plans and consist of member piece marks and completely dimensioned size and shape of each member; plans and/or elevations locating and defining all products furnished by manufacturer; sections and details showing connections, cast-in items and their relation to the structure; relationship to adjacent material including leveling pad; joints between members and structure; description of all loose, cast-in and field hardware; field installed anchor location drawings; erection sequences, when required to satisfy stability, and handling requirements; and all dead, live and other applicable loads used in the design.

Design drawings shall conform to the contract plans and consist of elevation view of each member; sections and details to indicate quantities and position of reinforcing steel, anchors, inserts, etc.; handling devices; dimensions and finishes; concrete strengths; estimated cambers; and methods for storage and transportation.

Submit on request design calculations performed by a registered engineer licensed in the state of Wisconsin and experienced in the design of precast concrete modular retaining walls.

Design modifications necessary to meet performance criteria and field coordination. Variations in details or materials shall not adversely affect the appearance, durability, or strength of units. Maintain general design concept without altering profiles and alignment.

Submit on request reports on materials, compressive strength tests on concrete and water absorption tests on units.

The contractor shall submit to the engineer and the UPRR engineer, for placing on file before commencing fabrication, one set of the submittals that the contractor has checked. In addition, provide two sets to the district office and one set to the bureau of structures for inspection purposes. Only then may fabrication commence without awaiting the results of any review the engineer and the UPRR engineer may make. The engineer or the UPRR engineer may refuse prints of submittals that are not clear and legible. If the engineer or the UPRR engineer requests, submit one additional copy of submittals for review. After review, the contractor shall furnish as many copies of submittals as required.

The submittals become a part of the contract, provided any differences between sections on production drawings and sections the plans show are made only if the engineer and the UPRR engineer approve and if the substitution is made at no additional expense to the department.

After initial submittal and review, make no deviation from the production drawings or changes to them without the engineer's and the UPRR engineer's further review.

The engineer's and the UPRR engineer's review of submittals means only a review of the character and sufficiency of the details and does not relieve the contractor from responsibility in regard to errors or omissions on those drawings.

C.3 Placing and Fastening Steel

Placing and fastening steel shall be according to AREMA Section 8-1.10. Place all steel units in the position the plans show and hold firmly during concrete placing and setting as specified in AREMA Section 8-1.10.

Ensure that all reinforcing steel is free of dirt, grease, wax, scale, rust, oil, or other foreign material that may prevent bonding between the steel and the concrete.

C.4 Placing Concrete

Handle and place the concrete as specified in AREMA Section 8-1.14.

C.5 Tolerances

Cast precast concrete units to plan dimensions within the following applicable tolerances:

Overall height of units measured at the face exposed to view ±3/4-inch per 10 feet

Overall width of units measured at the face exposed to view ±3/4-inch per 15 feet

Total thickness ..... ± 1/4-inch

Structural thickness ..... ± 1/4-inch

Variation from square or designated skew ..... ± 1/2-inch

Local smoothness, unconcealed surfaces ..... ± 1/4-inch per 10 feet

Bowing ± Length/360, to a maximum of 1-inch

Warp (from adjacent corner) ..... ± 1/4-inch per foot

Location of inserts ..... ±1/2-inch

Tipping and flushness of inserts ..... ± 1/4-inch

Position of handling devices ..... ± 3-inch

Reinforcing steel:

Where position has structural implications or affects

Concrete cover ..... ± 1/4-inch

Otherwise ..... ± 1/2-inch

Dimensions of architectural features and rustications……. ±1/4-inch

C.6 Curing

Cure concrete according to AREMA Section 8-1.18.

C.7 Surface Finish

Provide a smooth steel form finish on the exposed surfaces of precast concrete units as specified in AREMA Section 8-1.19 before shipping from the plant. Use rigid molds to maintain units within specified tolerances conforming to the shape, lines, and dimensions shown on the production drawings. Construct molds to withstand vibration method selected.

The engineer or the UPRR engineer will inspect for approval the concrete surface of all precast concrete units to check for honeycombs and other surface irregularities, upon delivery.

C.8 Erection

Erect precast concrete units without damage to shape or finish. Replace or repair damaged units. Install an 18” wide geotextile fabric on the backface of the wall panels to cover all panel joints. Attach the geotextile fabric with a standard construction adhesive suitable for use on concrete surfaces and cold temperatures. The adhesive shall be applied to the panels, not to the geotextile.

Place precast concrete units so that their final position is vertical. Ensure that the horizontal and vertical joint openings between each unit are uniform and that decorative patterns between each unit are aligned.

When precast concrete units require adjustment beyond design or tolerance criteria, discontinue affected work; advise the engineer and the UPRR engineer.

Verify structure, leveling pad, anchors blocks, rods, couplers, clevises, and other anchor devices are ready to receive precast concrete units. Verify that the leveling pad is placed at the proper horizontal and vertical alignments and is ready to receive the precast concrete units.

Touch-up scratched or damaged galvanized surfaces.

C.9 Erection Tolerances

Plan location from wall reference line ..... ± 1/2-inch

Plan location from wall alignment ..... ± 1/2-inch

Top elevation from nominal top elevation ..... ± 3/4-inch

Support elevation from nominal elevation:

Maximum low 1/2-inch

Maximum high 1/4-inch

Plumb in any 10 feet. of lagging height ..... ± 1/4-inch

Maximum offset of matching edges and decorative patterns ..... ± 1/4-inch

Maximum offset of matching faces ..... ± 1/4-inch

Joint width (governs over joint taper) ..... ± 1/4-inch

Joint taper maximum ..... ± 3/8-inch

Joint taper over 10 feet length ..... ± 1/4-inch

Differential bowing or camber as erected between

Adjacent members of the same design ..... ± 1/4-inch

C.10 Adjusting

Adjust precast concrete units so joint dimensions are within tolerances.

D Measurement

The department will measure Precast Concrete Modular Wall items in area by the square foot, acceptably completed, measured as the vertical area within the pay limits the contract plans show. No other measurement of quantities shall be made in the field unless the engineer directs in writing a change to the limits indicated on the contract plans.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.4005	Precast Concrete Modular Retaining Wall	SF
SPV.0165.4006	Precast Concrete Modular Wingwall	SF

Payment is full compensation for preparing the design drawings and calculations, production drawings, and coordination; for providing precast concrete modular wall units, including all concrete, grout, mortar, reinforcement steel, tie bars, bearing pads, shims, geotextile fabric, adhesive anchors, filler, anchor plates, angles, slotted inserts and other embedded metal; for casting and curing concrete; and for all handling, hauling and erecting. Excavation and construction of leveling pad and drainage swale shall be incidental to the Precast Concrete Modular Retaining Wall bid item.

Excavation, over-excavation to prepare subgrade, and backfill above, between the stems and under the wall will be paid for separately. Railings and other hardware above the top of the retaining wall will be paid for separately.

296. Geocomposite Wall Drain, Item SPV.0165.4010.

A Description

This special provision describes supplying and installing prefabricated geocomposite wall drain as indicated on the plans. Perform work according to pertinent provisions of the standard specifications, the plans, and as hereinafter provided.

B Materials

Use materials that conform to the following:

Physical Properties	Test Method	Value
Thickness		0.25 inch
Flow capacity, (at 3600 psi with I = 1)	ASTM D 4716 (mod)	9 gpm/ft
Geotextile tensile strength	ASTM D 4632	100 lb
Compressive strength	ASTM D 1621 (mod)	10,000 lbs/SF
Mullen burst	ASTM D 3786	Min. 200 lb
Apparent opening size	ASTM D 4751	70
Flow rate	ASTM D 4491	Min 140 gpm/SF

C Construction

Handle the prefabricated geocomposite drainage board in such a manner as to ensure the geocomposite is not damaged in any way. Take care during the placement of the geocomposite not to entrap dirt or excessive dust in the geocomposite that could cause clogging of the drainage system. Deliver, store, and handle the geocomposite according to manufacturer's recommendations. Place and secure geocomposite in strips covering secant wall pile seams after weep hole installation as indicated on the plans, with the fabric facing outward towards the seams. Make seams and overlaps as required according to the manufacturer’s recommendations and specifications.

D Measurement

The department will measure Geocomposite Wall Drain in area by the square foot, acceptably completed. The department will not pay for repairs to the geocomposite and will not pay for overlap of drain elements.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.4010	Geocomposite Wall Drain	SF

Payment is full compensation for furnishing, installing, and trimming all materials; and for furnishing all labor, tools, equipment, fasteners, and incidentals necessary to complete the contract work.

297. Prestressed Precast Concrete Wall Panel R-40-641, Item SPV.0165.4015; Prestressed Precast Concrete Wall Panel R-40-642, Item SPV.0165.4016.

A Description

This special provision describes providing and constructing precast prestressed concrete wall panels with heights and patterns as shown on the plans, including product design, fabrication, transportation, erection, anchorage and other related items. The design life of the precast concrete wall panels and all panel components shall be 75 years.

These specifications provide for prestressing concrete panels by the pretensioning method. In this method, stress the reinforcing tendons initially, then place and cure the concrete and release the stress from the anchorages to the concrete after developing specified concrete strength.

B Materials

B.1 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review:

erection drawings, production drawings, complete design calculations, explanatory notes, supporting materials, and specifications.

Erection drawings shall conform to the contract plans and consist of member piece marks and completely dimensioned size and shape of each member; plans and/or elevations locating and defining all products furnished by manufacturer; sections and details showing connections, cast-in items and their relation to the structure; relationship to adjacent material including footings and copings; joints between members and structure; description of all loose, cast-in and field hardware; field installed anchor location drawings; erection sequences, when required to satisfy stability, and handling requirements; and all dead, live and other applicable loads used in the design.

Production drawings shall conform to the contract plans and consist of elevation view of each member; sections and details to indicate quantities and position of reinforcing steel, anchors, inserts, etc.; handling devices; dimensions and finishes; prestress strand quantities; initial prestress forces; material strengths; estimated cambers; and methods for storage and transportation.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8-1/2 inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin, experienced in the design of Prestressed Precast Concrete Wall Panels.

The design of the Prestressed Precast Concrete Wall Panel shall conform to the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD.

Design and construct the panels per the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. Design panels and components to withstand initial handling, transportation, and erection stress limits; dead loads; wind load; thermal stresses; and other loads specified. Although the cavity shall remain free of backfill and debris, consider backfill within the cavity not exceeding the finish grade elevation at the front face of wall for design.

The minimum Strength III design wind pressure shall be 40 pounds per square foot in the windward direction and 20 pounds per square foot in the leeward direction (suction), unless specified otherwise on the plans. The minimum Service I design wind pressure shall be 15 pounds per square foot in the windward direction and 8 pounds per square foot in the leeward direction (suction), unless specified otherwise on the plans. All wind loads shall be applied perpendicular to the wall face.

In addition to the above loads also design inserts and connection assemblies for the loads indicated on the plans and a horizontal force equal to at least 20% of the dead weight of the panel and coping.

Provide a minimum prestress of 250 pounds per square inch after losses and minimum temperature and shrinkage reinforcement as required by AASHTO LRFD 5.10.8.

B.2 Submittals

Submit on request reports on materials, compressive strength tests on concrete and water absorption tests on units.

Submit to the engineer, for acceptance and placing on file before commencing, one set of the submittals that the contractor has checked. In addition, provide two sets to the Region office, (Ken Kiepczynski, (414) 659-3055), and one set to the Bureau of Structures for acceptance and inspection purposes. Only after acceptance by the Region may panel fabrication commence. The engineer may refuse prints of submittals that are not clear and legible. If the engineer requests, submit one additional copy of submittals for review. After acceptance, furnish as many copies of submittals as required. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to erect the wall panels.

The submittals become a part of the contract, provided any differences between the production drawings and the plans are approved by the engineer and provided those changes are made at no additional expense to the department.

After initial submittal and acceptance, make no deviation from the production drawings or changes to them without the engineer's further review and acceptance.

The engineer's review of submittals is only a review of the character and sufficiency of the details and does not relieve the contractor from responsibility in regard to errors or omissions on those drawings.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All certifications related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 General

Furnish materials conforming to the following:

Material	Standard Spec Section
Masonry Anchors	502
Coated High Strength Bar Steel Reinforcement	505
Pretensioning Reinforcement	503
Welded Steel Wire Fabric for Concrete Reinforcement	505
Structural Steel and Miscellaneous Metals	506
Elastomeric Bearing Pads	506

Galvanize or furnish stainless steel materials for all hardware incorporated into the finished structures. (Not including reinforcement bars or pretensioning reinforcement.)

B.3.2 Concrete

Furnish concrete as specified in standard spec 501 and 716.

Ensure concrete attains a minimum 28-day compressive strength of 5,000 pounds per square inch. Base all tests on 6 inch by 12-inch cylinders, or 4 inch by 8-inch cylinders, provided the engineer develops and approves a correlation factor. Mold concrete cylinders in suitable steel or plastic molds. Cure concrete cylinders according to AASHTO T23, except cure the cylinders with the member until release strength is obtained, then cure the cylinders according to AASHTO T23.

Make and test the cylinders and make available to the engineer all information relating to the making and testing of cylinders. Notify the engineer immediately if concrete cylinder compressive strengths are less than the required 28-day strength. Keep neatly documented records of all cylinder testing on the day of the test and make them available to the engineer. Provide copies of the tests to the engineer by contract completion.

Furnish precast prestressed concrete panels cast from air entrained concrete. Use type I, IS, I(SM), IP, II, or III cement. The contractor may replace up to 30 percent of type I, II, or III portland cement with an equal weight of fly ash conforming to standard spec 501.2.6 or slag conforming to standard spec 501.2.7. Use only one source and replacement rate for work under a single bid item. Use a department-approved air entraining admixture conforming to standard spec 501.2.2 for air entrained concrete. Use only size No. 1 coarse aggregate conforming to standard spec 501.2.5.4.

Determine proportions for the mix within the following limitations:

Proportion	Limitation
Water cement ratio	0.45 max.
Cement content	610 lbs/cy min.
Air content of concrete	3.5%-6.0%
Slump of mixed concrete	4 inches max.

If the mix does not contain a high range water reducer admixture, use a department-approved set retarding admixture as specified in standard spec 501.2.3.2 at the recommended rate if the ambient air temperature is 70 degrees F (21 degrees C) or higher. The contractor may use it at their option if the ambient air temperature is less than 70 degrees F (21 degrees C).

Do not add more admixtures or water after mixing is complete.

Use admixtures that do not have significant chlorides or chlorides added during manufacture.

Use admixtures that are compatible with all ingredients of the concrete mixture.

B.3.3 Pretensioning Reinforcement

Use high tensile strength, 7-wire strands conforming to ASTM A416, grade 270.

B.3.4 Lifting Devices

The type, number and locations of lifting devices and the method of handling the Prestressed Precast Concrete Wall Panels is determined by the fabricator and approved by the engineer. Lifting devices shall not be located on the exposed front face of the panel.

B.3.5 Accessories and Inserts

Furnish materials conforming to the following:

Item	Material
Shims	High-density plastic or galvanized steel, 1/8-inch thick, smooth both sides
Carbon steel plate	ASTM A283
Welded headed studs	AWS D1.1 – Type B
Bolts, nuts, rods, washers	Standard spec 506.2
Neoprene Filler	Closed cell 100% virgin chloroprene (neoprene) filler meeting Section 14 of AASHTO LRFD
Inserts	Galvanized with minimum 12 Gage steel conforming to ASTM A1011 SS GR 33 or ASTM A653 GR 33 A. Inserts anchors to have 1 1/2-inch minimum cover.
Zinc coated fabrications	Conform to ASTM 385 for fabricating zinc coated work

B.3.6 Footing and Coping

Furnish and place footings and coping as shown on the plans and as hereinafter provided.

Use a footing that consists of poured Grade A concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class II Concrete.

For cast in place sections of cap and coping, use poured Grade A concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard spec 716, Class II Concrete.

Use high-strength bar steel conforming to standard spec 505.

B.4 Plant Certification

Obtain all precast prestressed concrete wall panels from fabrication plants that comply with the department's plant certification program for precast prestressed concrete, unless the engineer agrees to accept these items according to the alternate procedures set forth in the department's plant certification program.

C Construction

C.1 Excavation and Backfill

Excavation will encompass the preparation of the foundation below the wall panel footing and to the limits and extents as shown on the plans, conforming to standard spec 206. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or

water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

C.2 Stressing Procedure

Stressing procedure shall conform to standard spec 503.3.1. Ensure all the strands of a pretensioned member are free from kinks or twists before starting tensioning operations. Ensure no strand unwinds more than one turn after starting tensioning operations.

Perform transfer of prestress to concrete after the concrete develops the minimum required strength for transfer determined by the test cylinders.

C.3 Placing and Fastening Steel

Placing and fastening steel shall conform to standard spec 503.3.1.1. Place all steel units in the position the plans show and hold firmly during concrete placing and setting as specified in standard spec 505.3.

Ensure that all prestressing steel is free of dirt, grease, wax, scale, rust, oil, or other foreign material that may prevent bonding between the steel and the concrete.

C.4 Placing Concrete

Handle and place the concrete as specified in standard spec 502.

C.5 Tolerances

Cast Prestressed Precast Concrete Wall Panels to plan dimensions within the following applicable tolerances:

Item	Tolerance
Overall height of panel measured at the face exposed to view	± 3/16-inch per 10 ft.
Overall width of panel measured at the face exposed to view	± 3/16-inch per 10 ft.
Total thickness	± 1/4-inch
Structural thickness	± 1/4-inch
Variation from square or designated skew	± 1/2-inch
Local smoothness, unconcealed surfaces	± 1/4-inch per 10 ft.
Bowing	+ Length/360, to a maximum of 1-inch
Warp (from adjacent corner)	± 1/16-inch per ft.
Location of inserts	± 1/2-inch
Tipping and flushness of inserts	± 1/4-inch
Position of handling devices	± 3-inch
Reinforcing steel: Where position has structural implications or affects concrete cover Otherwise:	 ± 1/4-inch ± 1/2-inch
Location of strand: Perpendicular to panel Parallel to panel	 ± 1/4-inch ± 1-inch
Dimensions of architectural features and rustications	± 1/4-inch

C.6 Curing

Cure concrete per standard spec 503.3.2.2.

C.7 Surface Finish

Provide surface treatment as detailed in the plans. Provide a rubbed surface finish on the remaining exposed surfaces of prestressed concrete panels as specified in standard spec 502.3.7.3 before shipping from the plant. Exposed face to match approved mockup panel. Use rigid molds to maintain panels within specified tolerances conforming to shape, lines, and dimensions shown on the production drawings. Construct molds to withstand vibration method selected.

Coat bottom of panels with bitumastic after cutting strands flush. Do not coat top of panels.

C.8 Erection

Erect panels without damage to shape or finish. Replace or repair damaged panels. Do not drill or form holes through the precast prestressed wall facing panels to erect panels. An alternate method of anchoring/attaching the precast prestressed concrete wall panels may be submitted to the engineer for review and possible acceptance.

Place precast concrete wall panels so that their final position is vertical. Ensure that the vertical joint openings between panels are uniform and that decorative patterns between panels are aligned.

When panels require adjustment beyond design or tolerance criteria, discontinue affected work; advise engineer.

Verify structure, footings, anchors blocks, rods, couplers, clevises, and other anchor devices are ready to receive panels. Verify that wall panel footings are placed at the proper horizontal and vertical alignments and are ready to the receive wall panels. Place elastomeric pad and shims behind panels to ensure proper horizontal alignment. Set panels on elastomeric bearing pads and shims and install base angles at ends of panels. Place a layer of Geotextile Type DF over the joint between the tilt up panel and the panel footing as shown on the plans. Shim vertical joints to get proper opening. Install and compress neoprene joint filler in the lap joints between panels. Fasten top of panels to deadman anchor block assemblies at MSE walls, as shown on the plans.

Touch-up scratched or damaged galvanized surfaces with 2 coats of zinc dust/zinc oxide paint. Clean and deburr the damaged and adjacent areas thoroughly before applying paint.

The cavity between the MSE wall and the panels shall remain free of backfill and debris throughout construction unless plans indicate otherwise or approved by the department’s Bureau of Structures.

C.8.1 Erection Tolerances

Item	Tolerance
Plan location from wall reference line	± 1/2-inch
Plan location from wall alignment	± 1/2-inch
Top elevation from nominal top elevation	± 1/4-inch
Support elevation from nominal elevation: Maximum low Maximum high	 1/2-inch 1/4-inch
Plumb in any 10 ft. of panel height	± 1/4-inch
Maximum offset of matching edges and decorative patterns	± 1/4-inch
Maximum offset of matching faces	± 1/4-inch
Joint width (governs over joint taper)	± 1/4-inch
Joint taper maximum	± 3/8-inch
Joint taper over 10 ft. length	± 1/4-inch
Differential bowing or camber as erected between adjacent members of the same design	+ 1/4-inch

C.9 Adjusting

Adjust panels so joint dimensions are within tolerances.

D Measurement

The department will measure Prestressed Precast Concrete Wall Panel by the square foot, acceptably completed. The department will compute the measured quantity from the theoretical pay limits the contract plans show. The department will make no allowance for wall area constructed above or below the theoretical pay limits. All work beyond the theoretical pay limits is incidental to the cost of work. The department will make no allowance for as-built quantities.

E Payment

The department will pay for accepted measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.4015	Prestressed Precast Concrete Wall Panel R-40-641	SF
SPV.0165.4016	Prestressed Precast Concrete Wall Panel R-40-642	SF

Payment is full compensation for preparing the design drawings and calculations, production drawings, and coordination; for providing concrete and reinforcement steel for the cast-in-place concrete footings and copings, decorative surface finish, sample panels, prestressed precast concrete wall panels, including all concrete, grout, mortar, reinforcement steel, tie bars, bearing pads, geotextile Type DF, excavation, shims, masonry anchors, filler, anchor plates, angles, slotted inserts and other embedded metal; for casting and curing concrete; for jacking and prestressing; and for furnishing all handling, hauling and erecting. Deadman, anchor blocks, rods, couplers and clevises shall be produced and supplied to the job site under this item.

The department will pay separately for parapets, traffic barriers, railings, and other items above the wall cap or coping.

298. Geocomposite Drain Board, Item SPV.0165.4020.

A Description

This special provision describes providing and installing prefabricated geocomposite drain board as indicated on the plans. Perform work according to pertinent provisions of the standard specifications, the plans, and as hereinafter provided.

B Materials

Furnish materials that conform to the following:

Physical Properties	Test Method	Value
Thickness		0.25 inch
Flow capacity, (at 3600 psi with I = 1)	ASTM D 4716 (mod)	9 gpm/ft
Geotextile tensile strength	ASTM D 4632	100 lb
Compressive strength	ASTM D 1621 (mod)	10,000 lbs/SF
Mullen burst	ASTM D 3786	Min. 200 lb
Apparent opening size	ASTM D 4751	70
Flow rate	ASTM D 4491	Min 140 gpm/SF

C Construction

Handle the prefabricated geocomposite drainage board in such a manner as to ensure the geocomposite is not damaged in any way. Take care during the placement of the geocomposite not to entrap dirt or excessive dust in the geocomposite that could cause clogging of the drainage system. Deliver, store, and handle the geocomposite according to manufacturer's recommendations. Place and secure geocomposite against the retaining wall back face as indicated on the plans with the fabric facing outward towards the backfill. Make seams and overlaps between adjacent boards according to the manufacturer’s recommendations and specifications.

D Measurement

The department will measure Geocomposite Drain Board by the square foot, acceptably completed. The department will not pay for repairs to the geocomposite and will not pay for overlap of drain elements.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.4020	Geocomposite Drain Board	SF

Payment is full compensation for furnishing, installing, and trimming all materials.

299. Temporary Wall Wire Faced Mechanically Stabilized Earth, Item SPV.0165.4030.

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system according to the lines, dimension, elevations and details as shown on the plans and provided in the contract.

This special provision describes the quality management program (QMP) for Mechanically Stabilized Earth (MSE) walls. A quality management program is defined as all activities, including process control, inspection, sampling and testing, and necessary adjustments in the process that are related to the construction of the MSE wall, which meets all the requirements of this provision.

This special provision describes contractor quality control (QC) sampling and testing for backfill density testing, documenting those results, and documenting related production and placement process changes. This special provision also describes department quality verification (QV), independent assurance (IA), and dispute resolution.

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Temporary Wire Faced Mechanically Stabilized Earth Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section in Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit electronically to the engineer and Bureau of Structures for review and acceptance. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All

plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the plans.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as stated on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratios (CDR) for sliding, eccentricity, and bearing checks is performed by the department and are provided in the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and panel-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

The wall facings shall be designed according to AASHTO 11.10.2.3. A fine metallic screen and a geotextile shall be used at the front face of the wall to retain the fines of the soil mass.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 8 feet. The soil reinforcement shall be the same length from the bottom to the top of the wall. All soil reinforcement layers shall be connected to wire facing panels. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be 24 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 12 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

The nominal long term design strength to be used in steel reinforcement and connector design shall consider the corrosion losses and based upon conditions at the end of the design life, as described in Chapter 14 of the WisDOT LRFD Bridge Manual and AASHTO LRFD Section 11.

Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. Unless approved by the Bureau of Structures cutting or altering of the basic structural section of either the strip or grid at the site is prohibited, a minimum clearance of 3" shall be maintained between any obstruction and reinforcement, and splicing steel reinforcement is not allowed.

The minimum embedment of the MSE wall shall be 1 foot 6 inches, or as given on the contract plan. Step the wall to follow the general slope of the ground line. Frost depth shall not be considered.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Steel Components

Provide steel reinforcement that meets the following requirements:

- **Welded Wire Fabric Soil Reinforcement**

  Provide shop fabricated welded wire reinforcement from cold drawn steel wire that has a yield stress of 65,000 psi and conforming to the minimum requirements of ASTM A1064 and be welded into the finished configuration according to ASTM A1064. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department.

- **Steel Reinforcing Strips and Tie Strips**

  As an alternate to welded wire reinforcing mesh, provide steel reinforcing strips or ladder reinforcing strips or equal, hot-rolled from bars, to the required shape and dimensions meeting the requirements of ASTM A572 Grade 65 minimum. Tie strips shall be shop fabricated of hot-rolled steel meeting the requirements of ASTM A1011 Grade 50.

- **Welded Wire Fabric Facing Panels**

  Provide welded wire fabric that is used to fabricate the facings of the wire-faced wall that has a yield stress of 65,000 psi. All steel shall be shop fabricated of cold drawn steel wire conforming to the minimum requirements of ASTM A1064 and be welded into the finished configuration according to ASTM A1064. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department.

- **Fasteners**

  High strength bolts meeting the requirements of AASHTO M164 or equivalent.

- **Connector Pins and Mat Bars**

  Connector pins and mat bars fabricated from cold drawn steel wire meeting the requirements of ASTM A82.

- **Metallic Screen**

  Provide a steel metallic screen. The metallic screen should have an approximate opening of 1/4” and be made of 0.025” (minimum) gauge wire.

B.3.2 Geotextile

Geotextile shall be used behind the metallic screen. Use geotextile as recommended by the wall manufacturer. If none is recommended, use Type DF (schedule B) as shown in standard spec 645 or as specified on the contract plans. Deliver in a protective wrap and keep protected from ultraviolet light until incorporated into the work.

B.3.3 Backfill

Furnish and place backfill for wall as shown on the plans and as herein provided.

Use natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. Do not use foundry sand, bottom ash, blast furnace slag, crushed/recycled concrete, crushed/milled asphaltic concrete or other potentially corrosive material.

Provide material that conforms to the following gradation requirements as per AASHTO T27.

Sieve Size	% by Weight Passing
1 inch	100
No. 40	0-60
No. 200	0-15

The material shall have a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90. Provide the percent by weight, passing the #4 sieve.

In addition, backfill material shall meet the following requirements.

Test	Method	Value
pH	AASHTO T-289	5.0 – 10.0
Sulfate content	AASHTO T-290	200 ppm max.
Chloride content	AASHTO T-291	100 ppm max.
Electrical Resistivity	AASHTO T-288	3000 ohm-cm min.
Organic Content	AASHTO T-267	1.0% max.
Angle of Internal Friction	AASHTO T-236[1]	30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2)

[1] If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM 5821, on the R-4 material. If more than 90% of the material is fractured on one face and more than 50% is fractured on two faces, the material meets the specifications, and the angle of internal friction can be assumed to be 30 degrees. The second method allows testing all P-1" material, as per AASHTO T-236, with a large shear box. Test results of this second method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests (except Angle of Internal Friction test) are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. All certified report of these test results shall be less than 6 months old and performed by a certified independent laboratory.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the MSE wall shall be according to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the bottom of the wall unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store any materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facings, soil reinforcement, or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place and compact material beyond the reinforced soil zone to allow for proper compaction of material within the reinforced zone. The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back wall facing. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing.

C.2 Compaction

Compact all backfill behind the wall as specified in standard spec 207.3.6. Compact the backfill to 95.0% of maximum dry density as determined by AASHTO T-99 (modified to compute densities to the nearest 0.1 pcf).

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the wall face. Do not use sheepsfoot or padfoot rollers within the reinforced soil zone.

A minimum of 3 inches of backfill shall be placed over the MSE reinforcement prior to working above the reinforcement.

C.3 Wall Components

C.3.1 General

Erect welded wire facing and other associated elements according to the wall manufacturer's construction guide. Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place remaining courses in vertical or battered positions as shown on the contract plans.

The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill. Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstruction in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

When using a temporary wall for four months or more or when the installation of a permanent wall facing will not occur for four months or more after placement of any geotextile material, cover the exposed geotextile material in the wall as quickly as practical, to prevent damage caused by exposure to ultraviolet light.

C.3.2 Tolerances

- The overall vertical tolerance of the wall and the horizontal alignment tolerance shall not exceed 3 inches per 10 feet for permanent installations.
- For battered wire facing, the final deviation from the design batter shall be within ±1 inch for each 10 feet of battered wall height

C.4 Quality Management Program

C.4.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform MSE wall construction work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review and acceptance. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
3. A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Descriptions of stockpiling and hauling methods.

5. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
6. Location of the QC laboratory, retained sample storage, and other documentation.
7. A summary of the locations and calculated quantities to be tested under this provision.
8. A proposed sequencing plan of wall construction operations and random test locations.

C.4.2 Quality Control Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at the each grading site during all wall backfill placement, compaction, and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

If an Assistant Certified Technician (ACT) is performing sampling or testing, a certified technician must coordinate and take responsibility for the work an ACT performs. Have a certified technician ensure that all sampling and testing is performed correctly, analyze test results, and post resulting data. No more than one ACT can work under a single certified technician.

C.4.3 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at:

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/default.aspx

Ensure that the nuclear gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to AASHTO T310 and CMM 8-15 for density testing and gauge monitoring methods.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department's split samples to the department.

C.4.4 Documentation

(1) Document all observations, inspection records, and process adjustments daily. Submit test results to the department's project materials coordinator on the same day they become available.

(2) Use forms provided in CMM Chapter 8. Note other information in a permanent field record and as a part of process control documentation enumerated in the contractor's quality control plan. Enter QC data and backfill material certified report results into the applicable materials reporting system (MRS) software within 5 business days after results are available.

(3) Submit final testing records and other documentation to the engineer electronically within 10 business days after all contract-required information becomes available. The engineer may allow submission of scanned copies of hand-written documentation.

C.4.5 Quality Control (QC) Testing

Perform compaction testing on the backfill. Conform to CMM 8-15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of 1 test per 150 cubic yards of backfill, or major portion thereof in each lift. A minimum of one test for every lift is required. Deliver documentation of all compaction testing results to the engineer at the time of testing.

Perform 1 gradation test every 750 cubic yards of fill and one 5-point Proctor test (or as modified in C.1) every 2,250 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM Method D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

C.4.6 Department Testing

C.4.6.1 General

(1) The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all QV and IA personnel for the project, and provide test results to the contractor within two business days after the department obtains the sample.

C.4.6.2 Quality Verification (QV) Testing

(1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.3.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.

(2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.

(3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.

(4) The department will conduct QV Proctor and gradation tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.

(5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.6.3 Dispute Resolution

(1) Independent assurance is unbiased testing the department performs to evaluate the department's QV and the contractor's QC sampling and testing, including personnel qualifications, procedures, and equipment. The department will perform an IA review according to the department's independent assurance program. That review may include one or more of the following:

1. Split sample testing.
2. Proficiency sample testing.
3. Witnessing sampling and testing.
4. Test equipment calibration checks.
5. Reviewing required worksheets and control charts.
6. Requesting that testing personnel perform additional sampling and testing.

(2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.6.4.

C.4.6.4 Independent Assurance (IA)

(1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E178 to evaluate potential statistically outlying data.

(2) Production test results, and results from other process control testing, may be considered when resolving a dispute.

(3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product or work, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C.5 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils Engineer two working days to review the foundation.

D Measurement

The department will measure Temporary Wall Wire Faced Mechanically Stabilized Earth by the square foot acceptably completed at locations the plans show, measured as the area of exposed face in the plane of the wall from the front face ground line of the wall to the retained grade. Temporary Walls used for staged construction in multiple configurations will be measured once based on the configuration with the largest area of exposed face.

E Payment

The department will pay for accepted measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.4030	Temporary Wall Wire Faced Mechanically Stabilized Earth	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system, constructing the retaining system including drainage system; providing backfill, backfilling, compacting, developing/completing/documenting the quality management program, performing compaction testing; covering geotextile, and for furnishing all tools, labor, equipment, and incidentals necessary to complete the contract work.

Payment limit for all walls is the line of minimum embedment per section B.2. No payment will be made for additional embedment detailed for construction purposes.

Parapets, railings, vehicle barriers and its support, abutment bodies and other items above the wall will be paid for separately. Concrete facings, facing leveling pads or footings, and copings will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price for those items.

300. Wall Concrete Panel Mechanically Stabilized Earth R-40-412, Item SPV.0165.4412; Wall Concrete Panel Mechanically Stabilized Earth R-40-413, Item SPV.0165.4413; Wall Concrete Panel Mechanically Stabilized Earth R-40-414, Item SPV.0165.4414; Wall Concrete Panel Mechanically Stabilized Earth R-40-415, Item SPV.0165.4415; Wall Concrete Panel Mechanically Stabilized Earth R-40-636, Item SPV.0165.4636; Wall Concrete Panel Mechanically Stabilized Earth R-40-637, Item SPV.0165.4637; Wall Concrete Panel Mechanically Stabilized Earth R-40-639, Item SPV.0165.4639; Wall Concrete Panel Mechanically Stabilized Earth R-40-640, Item SPV.0165.4640; Wall Concrete Panel Mechanically Stabilized Earth R-40-642, Item SPV.0165.4642; Wall Concrete Panel Mechanically Stabilized Earth R-40-645, Item SPV.0165.4645; Wall Concrete Panel Mechanically Stabilized Earth R-40-646, Item SPV.0165.4646; Wall Concrete Panel Mechanically Stabilized Earth R-40-647, Item SPV.0165.4647; Wall Concrete Panel Mechanically Stabilized Earth R-40-648, Item SPV.0165.4648.

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system according to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the wall and all wall components shall be 75 years minimum.

This special provision describes the quality management program (QMP) for Mechanically Stabilized Earth (MSE) walls. A quality management program is defined as all activities, including process control, inspection, sampling and testing, and necessary adjustments in the process that are related to the construction of the MSE wall, which meets all the requirements of this provision.

This special provision describes contractor quality control (QC) sampling and testing for backfill density testing, documenting those results, and documenting related production and placement process changes. This special provision also describes department quality verification (QV), independent assurance (IA), and dispute resolution.

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Concrete Panel Mechanically Stabilized Earth Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid opening date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section at the following email address: DOTDLStructuresFabrication@dot.wi.gov.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit shop drawings to the engineer conforming to 105.2 with electronic submittal to the fabrication library under 105.2.2. Certify that shop drawings conform to quality control standards by submitting department form DT2329 with each set of shop drawings. Department review does not relieve the contractor from responsibility for errors or omissions on shop drawings. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. Where walls or wall sections intersect with an included angle of 130 degrees or less, a vertical corner element separate from the standard panel face shall abut and interact with the opposing standard panels. The corner element shall have ground reinforcement connected specifically to that panel and shall be designed to preclude lateral spread of the intersecting panels. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the plans.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as stated on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratios (CDR) for sliding, eccentricity, and bearing checks is performed by the department and are provided on the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and panel-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software program used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

The wall facing shall be designed according to AASHTO LRFD 11.10.2.3. The facing panels shall also be designed to resist compaction stresses that occur during the wall erection. The minimum thickness of the facing panel shall be 5.5 inches. The surface area of a standard single panel cannot exceed 60 square feet. The maximum height of a standard panel shall be 5 feet. The top and bottom panels may exceed 5 foot in height based on site topography subject to the approval by the Structures Design Section. The design of the steel reinforcement within the panels shall be based on one-way bending action. Design the wall panels and joints between panels to accommodate a maximum differential settlement of 1 foot over a 100-foot length, unless the plans indicate other.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height or as shown on the plan. In no case shall this length be less than 8 feet. The soil reinforcement length shall be the same from the bottom to the top of the wall. All soil reinforcement layers shall be connected to facings. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be 31 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 18 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

All soil reinforcement required for the reinforced soil zone shall be connected to the face panels. The reinforcement and the reinforcement/facing connection strength shall be designed to resist maximum factored reinforcement loads according to AASHTO LRFD Section 11.10.6. Facing connection strength shall be defined as the resistance factor times the failure load, or the load at 0.5 inch deformation times 0.9, whichever is less. The nominal long term design strength in steel reinforcement and connections shall be based upon assumed conditions at the end of the design life.

Soil reinforcement shall be prefabricated into single or multiple elements before galvanizing. Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. Unless approved by the Bureau of Structures cutting or altering of the basic structural section of either the strip or grid at the site is prohibited, a minimum clearance of 3” shall be maintained between any obstruction and reinforcement, and splicing reinforcement is not allowed.

The minimum embedment of the wall shall be 1 foot 6 inches below finished grade, or as given on the plans. All walls shall be provided with a concrete leveling pad. Minimum wall embedment does not include the leveling pad depth. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad.

Wall facing units shall be installed on a leveling pad.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Wall Facing

Wall facing shall consist of modular precast concrete face panels produced by a wet cast process. The concrete panels shall have a minimum strength of 4000 psi at 28 days. The concrete for the panels shall be air entrained, with an air content of 6% +/- 1.5%. All materials for the concrete mixture for the panels shall meet the requirements of standard spec 501. The panel edges shall be configured so as to conceal the joints. The detail shall be a shiplap, tongue and groove or other detail adequate to prevent vandalism or ultraviolet light damage to the backside of the wall joint covering. Joints between panels shall be no more than 0.75 inch. Use full wall height slip joints at points of differential settlement when detailed on the plan. Horizontal joints must be provided with a compressible bearing material to prevent concrete to concrete contact. Panels shall be reinforced using coated high-strength bar steel or welded steel wire fabric conforming to standard spec 505. Welded steel wire fabric shall be epoxy-coated according to ASTM A884 or galvanized according to AASHTO M 111 or ASTM A641. Panel dowels for cast-in-place copings shall be coated high-strength bar steel conforming to standard spec 505. Unless approved by the Bureau of Structures, adhesive anchors are prohibited.

For reinforced cast-in-place concrete cap or coping, use poured Grade A concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast-in-place cap and coping concrete as specified in standard spec 716, Class II Concrete. Use coated high-strength bar steel conforming to standard spec 505.

A minimum of two bearing pads shall be used per panel. The allowable bearing stress shall not exceed 900 psi. The bearing pads shall be preformed EPDM rubber conforming to ASTM D2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80, or high- density polyethylene pads with a minimum density of 0.034 lb/in3 according to ASTM D1505.

An 18-inch wide geotextile shall be used on the backface of the wall panels to cover all panel joints. The geotextile shall meet the physical requirements stated in standard spec 645.2.4 for Geotextile, Type DF, Schedule B, except that the grab tensile strength shall be a minimum of 180 pounds in both the machine and cross-machine directions. The geotextile shall be attached with a standard construction adhesive suitable for use on concrete surfaces and cold temperatures. The adhesive shall be applied to the panels, not to the geotextile.

B.3.2 Leveling Pad

Provide an unreinforced cast-in-place concrete leveling pad. Use Grade A concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete.

The minimum width of the leveling pad shall be 12-inches. The minimum thickness of the leveling pad shall be 6-inches.

B.3.3 Backfill

Furnish and place backfill for the wall as shown on the plans and as hereinafter provided.

Place backfill in a zone extending horizontally from the back face of the wall facing to 1 foot minimum beyond the end of the reinforcement and extending vertically from the top of the leveling pad to a minimum of 3 inches above the final reinforcement layer.

Use natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. Do not use foundry sand, bottom ash, blast furnace slag, crushed/recycled concrete, crushed/milled asphaltic concrete or other potentially corrosive material.

Provide material conforming to the following gradation requirements as per AASHTO T27.

Sieve Size	% by Weight Passing
1 inch	100
No. 40	0 – 60
No. 200	0 - 15

The material shall have a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90. Provide the percent by weight, passing the #4 sieve.

In addition, backfill material shall meet the following requirements.

Test 1	Method	Value	
		(Galvanized)	(Aluminized Type 2)
pH	AASHTO T-289	5.0 – 10.0	5.0 – 9.0
Sulfate content	AASHTO T-290	200 ppm max.	
Chloride content	AASHTO T-291	100 ppm max.	
Electrical Resistivity	AASHTO T-288	3000 ohm-cm min.	1500 ohm-cm min.
Organic Content	AASHTO T-267	1.0% max.	
Angle of Internal Friction	AASHTO T-236[1]	30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2.)	

[1] If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM D5821, on the R-4 material. If more than 90% of the material is fractured on one face and more than 50% is fractured on two faces, the material meets the specifications, and the angle of internal friction can be assumed to be 30 degrees. The second method allows testing all P-1” material, as per AASHTO T-236, with a large shear box. Test results of this second method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. For the additional required testing for every 2000 cubic yards of backfill placement, if the characteristic of the backfill and/or the source has not changed then Angle of Internal Friction tests are not included in the additional required testing. All certified reports of test results shall be less than 6 months old and performed by a certified independent laboratory.

B.3.4 Soil Reinforcement

All steel portions of the wall system exposed to earth shall be galvanized. All soil reinforcement and attachment devices shall be carefully inspected to ensure they are true size and free from defects that may impair the strength and durability. Soil reinforcement shall be galvanized or aluminized Type 2. Galvanized soil reinforcement shall be according to AASHTO M 111 or ASTM A641. Aluminized soil reinforcement shall be according to ASTM A463 Aluminized Type 2-100, SS, Grade 50, Class 2. Design of galvanized soil reinforcement shall be according to Section 11.10.6.4.2 of the current AASHTO LRFD Specifications. The design life of steel soil reinforcements shall comply with AASHTO LRFD. Aluminized soil reinforcement shall be limited 16 years of steel protection. Aluminized steel shall only be used on soil

reinforcement elements and shall not be used on facing connections or any other steel portion of the wall system. Steel soil reinforcement shall be prefabricated into single or multiple elements before galvanizing.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the MSE wall and the leveling pad shall be according to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the leveling pad unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall panels, soil reinforcement, or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place and compact material beyond the reinforced soil zone to allow for proper compaction of material within the reinforced zone. The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back panels. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the panels.

C.2 Compaction

Compact all backfill behind the wall as specified in standard spec 207.3.6. Compact the backfill to 95.0% of maximum dry density as determined by AASHTO T-99 (modified to compute densities to the nearest 0.1 pcf).

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the panels. Do not use sheepsfoot or padfoot rollers within the reinforced soil zone.

A minimum of 3 inches of backfill shall be placed over the MSE reinforcement prior to working above the reinforcement.

C.3 Wall Components

C.3.1 General

Erect panel facing and other associated elements according to the wall manufacturer’s construction guide. Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing.

The MSE reinforcement shall lay horizontally on the top of the most recently placed and compacted layer of MSE backfill. Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstructions in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

C.3.2 Leveling Pad

Provide an unreinforced cast-in-place concrete leveling pad as shown on the plans. Vertical tolerances shall not exceed 3/4-inch when measured along a 10-foot straight edge. Allow concrete to set at least 12 hours prior to placing wall facing units.

The bottom row of wall facing units shall be horizontal and 100% of the unit surface shall bear on the leveling pad. Rubber or plastic shims may be used to level the wall facing units at the leveling pad. No more than 2 shims (each 3/16-inch thick) shall be used to level the wall facing.

C.3.3 Steel Layers

Place the steel reinforcement full width in one piece as shown on the plans. No splicing will be allowed. Maintain elements in position during backfilling.

C3.4 Panel Tolerances

As backfill material is placed behind a panel, maintain the panel in its proper inclined position according to the supplier specifications and as approved by the engineer. The supplier shall specify the back batter so that the final position of the wall is vertical. Vertical tolerances and horizontal alignment tolerances shall not exceed ¾-inch when measured along a 10-foot straight edge. The maximum allowable offset in any panel joint shall be ¾-inch. The overall vertical tolerance of the wall (plumbness from top to bottom) shall not exceed ½-inch per 10 feet of wall height. Erect the precast face panels to ensure that they are located within 1 inch from the contract plan offset at any location to ensure proper wall location at the top of the wall. Provide a ¾-inch joint separation between all adjacent face panels to prevent direct concrete-to-concrete contact. Maintain this gap by the use of bearing pads and/or alignment pins. Failure to meet this tolerance shall cause the engineer to require the contractor to disassemble and re-erect the affected portions of the wall. In addition, imperfect molding, honeycombing, cracking or severe chipping of panels shall be cause of panel rejection.

C.4 Quality Management Program

C.4.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform MSE wall construction work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review and acceptance. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
3. A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Descriptions of stockpiling and hauling methods.
5. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
6. Location of the QC laboratory, retained sample storage, and other documentation.
7. A summary of the locations and calculated quantities to be tested under this provision.
8. A proposed sequencing plan of wall construction operations and random test locations.

C.4.2 Quality Control Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at each grading site during all wall backfill placement, compaction, and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

If an Assistant Certified Technician (ACT) is performing sampling or testing, a certified technician must coordinate and take responsibility for the work an ACT performs. Have a certified technician ensure that all sampling and testing is performed correctly, analyze test results, and post resulting data. No more than one ACT can work under a single certified technician.

C.4.3 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at:

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/default.aspx

Ensure that the nuclear gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to AASHTO T310 and CMM 8-15 for density testing and gauge monitoring methods.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department's split samples to the department.

C.4.4 Documentation

(1) Document all observations, inspection records, and process adjustments daily. Submit test results to the department's project materials coordinator on the same day they become available.

(2) Use forms provided in CMM Chapter 8. Note other information in a permanent field record and as a part of process control documentation enumerated in the contractor's quality control plan. Enter QC data and backfill material certified report results into the applicable materials reporting system (MRS) software within 5 business days after results are available.

(3) Submit final testing records and other documentation to the engineer electronically within 10 business days after all contract-required information becomes available. The engineer may allow submission of scanned copies of hand-written documentation.

C.4.5 Quality Control (QC) Testing

Perform compaction testing on the backfill. Conform to CMM 8-15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of 1 test per 150 cubic yards of backfill, or major portion thereof in each lift. A minimum of one test for every lift is required. Deliver documentation of all compaction testing results to the engineer at the time of testing.

Perform 1 gradation test every 750 cubic yards of fill and one 5-point Proctor test (or as modified in C.2) every 2,250 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM Method D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

C.4.6 Department Testing

C.4.6.1 General

(1) The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all QV and IA personnel for the project, and provide test results to the contractor within 2 business days after the department obtains the sample.

C.4.6.2 Quality Verification (QV) Testing

(1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.4.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.

(2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.

(3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.

(4) The department will conduct QV Proctor and gradation tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.

(5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.6.3 Independent Assurance (IA)

(1) Independent assurance is unbiased testing the department performs to evaluate the department's QV and the contractor's QC sampling and testing, including personnel qualifications, procedures, and equipment. The department will perform an IA review according to the department's independent assurance program. That review may include one or more of the following:

1. Split sample testing.
2. Proficiency sample testing.
3. Witnessing sampling and testing.
4. Test equipment calibration checks.
5. Reviewing required worksheets and control charts.
6. Requesting that testing personnel perform additional sampling and testing.

(2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.6.4.

C.4.6.4 Dispute Resolution

(1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

(2) Production test results, and results from other process control testing, may be considered when resolving a dispute.

(3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product or work, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C.5 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils Engineer two working days to review the foundation.

D Measurement

The department will measure Wall Concrete Panel Mechanically Stabilized Earth by the square foot, acceptably completed. The department will compute the measured quantity from the theoretical pay limits the contract plans show. The department will make no allowance for wall area constructed above or below the theoretical pay limits. All work beyond the theoretical pay limits is incidental to the cost of work. The department will make no allowance for as-built quantities.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.4412	Wall Concrete Panel Mechanically Stabilized Earth R-40-412	SF
SPV.0165.4413	Wall Concrete Panel Mechanically Stabilized Earth R-40-413	SF
SPV.0165.4414	Wall Concrete Panel Mechanically Stabilized Earth R-40-414	SF
SPV.0165.4415	Wall Concrete Panel Mechanically Stabilized Earth R-40-415	SF
SPV.0165.4636	Wall Concrete Panel Mechanically Stabilized Earth R-40-636	SF
SPV.0165.4637	Wall Concrete Panel Mechanically Stabilized Earth R-40-637	SF
SPV.0165.4639	Wall Concrete Panel Mechanically Stabilized Earth R-40-639	SF
SPV.0165.4640	Wall Concrete Panel Mechanically Stabilized Earth R-40-640	SF
SPV.0165.4642	Wall Concrete Panel Mechanically Stabilized Earth R-40-642	SF
SPV.0165.4645	Wall Concrete Panel Mechanically Stabilized Earth R-40-645	SF
SPV.0165.4646	Wall Concrete Panel Mechanically Stabilized Earth R-40-646	SF
SPV.0165.4647	Wall Concrete Panel Mechanically Stabilized Earth R-40-647	SF
SPV.0165.4648	Wall Concrete Panel Mechanically Stabilized Earth R-40-648	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system including cap, copings, leveling pads, leveling pad steps, and shims; constructing the retaining system and providing temporary drainage; providing backfill, backfilling, compacting, developing/completing/documenting the quality management program, and performing compaction testing.

The department will pay separately for parapets, traffic barriers, railings, and other items above the wall cap or coping.

SPV.0165.XX (20211104)

301. Topsoil Special, Item SPV.0180.0001.

A Description

This special provision section describes furnishing, placing, spreading, and finishing humus-bearing soil, adapted to sustain plant life, commonly known as topsoil, from locations the contractor furnishes beyond the limits of the right-of-way.

This special provision also describes removing topsoil from the sites of proposed roadway excavations and embankments in quantities and depths available and necessary to cover the work slopes. This work also includes reclamation, placing, spreading, and finishing of this topsoil.

B Materials

Furnish material that is relatively free from large roots, sticks, weeds, brush, stones, litter, and waste products.

Furnish material, either obtained offsite, or material obtained within project limits, consisting of loam, sandy loam, silt loam, silty clay loam, or clay loam humus-bearing soils adapted to sustain plant life. Do not use surface soils from ditch bottoms, drained ponds, and eroded areas, or soils which are supporting growth of NR 40 listed plants and noxious weeds or other undesirable vegetation. Ensure that the material conforms to the following:

Topsoil Requirements	Minimum Range	Maximum Range
Material Passing 2.00 mm (#10) Sieve[1]	90%	100%
PH Range	6.0	7.0
Organic Matter[2]	5%	20%
Clay	5%	30%
Silt	10%	70%
Sand and Gravel	10%	70%

[1] See standard spec 625.3.3 for sieve requirements when using either sod or seed mixture 40.

[2] Organic matter determined by loss on ignition test of samples oven dried to constant weight at 212 F (100 C).

C Construction

C.1 Preparing the Roadway for Topsoil

Undercut or underfill all areas designated to receive topsoil to a degree that if covered to the required depth with topsoil the finished work conforms to the required lines, grades, slopes and cross sections the plans and drawings show.

C.2 Processing Topsoil

Mow topsoil procurement areas to a height of approximately 6 inches. Remove litter such as brush, rock, and other materials that will interfere with subsequent vegetation establishment.

Strip off the humus-bearing soil. Take care to minimize removing the underlying sterile soil. Then stockpile the topsoil on the right-of-way or place it directly on the designated areas.

Obtain topsoil from embankment areas outside the roadway foundation only if that additional material is required to cover the slopes and conforms to the requirements of section B in this special provision. Use excess topsoil on the project or dispose of as specified in standard spec 205.3.12.

C.3 Placing Topsoil

After preparing and finishing the areas designated for topsoil to the required lines, grades, slopes and cross section, place and spread the topsoil to a uniform depth as the plans show or the contract requires. If no depth is shown, place and spread the topsoil to a minimum depth of 4 inches in rural areas and a minimum depth of 6 inches in urban areas, or as the engineer designates.

Break down all clods and lumps using appropriate equipment to provide a uniformly textured soil.

Where using either sod or seed mixture 40 ensure that, for the upper 2 inches, 100 percent of the material passes a one-inch sieve and at least 90 percent passes the No. 10 sieve.

Remove rocks, twigs, foreign material, and clods that cannot be broken down. Dress the entire surface to present a uniform appearance. The engineer will not require rolling.

If light sandy soils are covered with heavier clay bearing loam topsoil, then mix or blend the 2 types of soils to a more or less homogeneous mixture by using the appropriate equipment.

D Measurement

The department will measure Topsoil Special by the square yard, acceptably completed conforming to standard spec 625.4.1.

E Payment

The department will pay for plan quantities conforming to standard spec 109.1.1.2 at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.0001	Topsoil Special	SY

Payment for Topsoil Special is full compensation for removing, stockpiling, reclaiming, providing, processing, excavating, loading, hauling, and placing this material; and for undercutting excavations, or underfilling embankments necessary to receive this material. The department will make no deductions from the Excavation bid items for quantities of Topsoil Special obtained from cut sections. The department will not measure or pay for volumes of Topsoil Special obtained from the sites of proposed embankments under the Excavation bid items. Additionally, the department will make no allowance, adjustment, or measurement for payment under the Excavation bid items for undercutting cut sections necessary to receive Topsoil Special. The department will not measure and pay for volumes of topsoil placed under the Roadway Embankment bid item.

If an area is damaged by erosion after partial acceptance, the department will pay for restoring topsoil in these areas at a unit price determined by multiplying the contract unit price bid for Topsoil multiplied by 3, the department will pay for restoration under the Restoration Post Acceptance Topsoil administrative item.

The department will not pay for removing topsoil from outside the roadway foundation in embankment areas unless that material is necessary to cover the slopes.

302. Removing Surface Milling Special, Item SPV.0180.0002.

A Description

This special provision describes milling and removing the 2-inch asphalt surface overlay and 2-inches of the underlying concrete pavement along IH-43 as shown on the plans and according to standard spec 204, and as hereinafter provided.

B (Vacant)

C Construction

C.1 Equipment

Use a machine that provides a surface finish acceptable to the engineer. Shroud the machine to prevent discharge of any loosened material into adjacent work area or live traffic lanes.

C.2 Milling

Remove the existing asphalt surface and concrete pavement to a depth of 4 inches as shown on the plan by grinding, planing, chipping, sawing, milling, or by using other methods approved by the engineer.

Perform the removal operation in such a manner as to preclude damage to the remaining pavement and provides a reasonable uniform plane surface with a uniform transverse slope and free of excessive large scarification marks.

Windrowing or storing of the removed material on the roadway will only be permitted in conjunction with a continuous removal and pick-up operation. During non-working hours, clear the roadway of all materials and equipment. The removed pavement shall become the property of the contractor. Properly dispose of it according to standard spec 204.3.1.3

D Measurement

The department will measure Removing Surface Milling Special by the square yard of material removed, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.0002	Removing Surface Milling Special	SY

Payment is full compensation for removing the asphaltic surface and a portion of the underlying concrete pavement and for disposing of materials.

303. Concrete Pavement 8-Inch Special, Item SPV.0180.0003.

A Description

This special provision describes specialized material and construction requirements to use on mainline concrete pavement and shoulders, and freeway entrance and exit ramps.

Conform to standard spec 415, 501, and 715 as modified in this special provision.

B Materials

B.1 Reinforcement

B.2 Coarse Aggregates

B.2.1 General

Replace standard spec 501.2.7.3.1 (2) with the following:

Use clean, hard, durable crushed limestone with 100 percent fractured surfaces and free of an excess of thin or elongated pieces, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.

Use virgin aggregates only.

B.3 Deleterious Substances

Replace standard spec 501.2.7.2.2 (1) and 501.2.7.3.3 with the following:

The quantity of deleterious substances shall not exceed the following percentages:

DELETERIOUS SUBSTANCE	PERCENT BY WEIGHT
Shale	1.0
Coal	1.0
Clay lumps	0.3
Soft fragments	3.0
Any combination of above	3.0
Thin or elongated pieces based on a 3:1 ratio[1]	10.0
Materials passing the No. 200 (75 µm) sieve	1.5
Chert[2]	3.0
Lightweight pieces in concrete not for prestressed members[3]	5.0

[1] As modified by CMM 860.

[2] Material classified lithologically as chert and having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of chert by dividing the weight of chert in the sample retained on a 3/8-inch (9.5 mm) sieve by the weight of the total sample.

[3] Material having a saturated surface-dry bulk specific gravity of less than 2.45, tested according to AASHTO T113. Determine the percentage of lightweight pieces by dividing the weight of lightweight pieces in the sample retained on the 3/8-inch sieve by the weight of the total sample.

B.4 Physical Properties

Replace standard spec 501.2.7.3.2 (1) and (2) with the following:

(1) The percent LA wear shall not exceed 30 percent.

(2) The department will ensure that soundness testing conforms to AASHTO T 104, using five cycles in sodium sulfate solution on aggregate retained on the No. 4 (4.75 mm) sieve. The weighted loss shall not exceed 6 percent.

The department will ensure that freeze-thaw soundness testing confirms to AASHTO T 103. The weighted freeze-thaw average loss shall not exceed 15 percent.

B.5 Joint Filler

Replace standard spec 415.2.6 with the following:

(1) Furnish a silane sealer from the department's approved product list for Concrete Protective Surface Treatments.

C Construction

C.1 Jointing

Replace standard spec 415.3.7.1 (2) with the following:

For all intersections, ramps and mainline pavement; plan and locate all points necessary to establish the horizontal position of the transverse and longitudinal joints in the concrete to prevent uncontrolled cracking. Submit a joint layout design plan to the engineer at least 7 calendar days before paving. Do not layout joints until the engineer has reviewed the joint layout design. Mark the location of the concrete joints in the field prior to or after paving. Follow the plan details for joints in the concrete, making adjustments as required to fit field conditions.

Supplement standard spec 415.3.7.1 with the following:

(9) Remove all saw slurry from sawed joints and allow to dry thoroughly before application of silane joint sealer.

(10) Apply silane joint sealer to all sawed surfaces of the transverse and longitudinal joints unless directed otherwise by the engineer. Apply the silane joint sealer directly to the interior of the sawed joint. Do not use a broadcast spray method of application.

(11) Apply silane joint sealer per manufacturers specifications

(12) Apply silane joint sealer within one month of concrete placement.

C.2 Surface Finishing

Replace standard spec 415.3.8.3.1 with the following:

(1) Tine freshly placed pavement as soon as it is practical after floating.

(2) Tine with a self-propelled tining machine. Where using a tining machine is not practical, tine by hand. Produce uniformly deep grooves approximately 1/8 to 3/16 inch (3 mm to 5 mm) deep.

(3) Construct a finished surface free of tining defects. Complete before tining tears or unduly roughens the concrete

(4) Tine surface longitudinally as specified in standard spec 415.3.8.3.2.

C.3 Curing Concrete

Replace standard spec 415.3.12.1 with the following:

(1) Maintain adequate moisture throughout the concrete mass to support hydration until the concrete develops sufficient strength to open it to service. Cure all concrete by impervious coating as specified in standard spec 415.3.12.2 within 75 minutes from the time concrete is discharged from the truck. Use PAM except, use curing compound conforming to 501.2.8 on pavement will get an overlay under the contract or as directed by the engineer. The liquid curing compound shall have a color equal to or lighter than Gardner Color Standard No.2 when tested according to ASTM C 1315.8.7.6 Yellowing Resistance.

(2) If the concrete is not cured as specified in the subsection, the engineer may suspend concrete placement operations.

C.4 Extended Delivery Time

Delete standard spec 501.3.2.4.3.3.

C.5 Ready-Mixed Concrete

Replace standard spec 501.3.5.1 with the following:

Use central-mixed concrete for all work under this special provision. Central-mixed concrete is mixed in a stationary mixer and transported to the point of delivery with or without mechanical agitation in the transporting vehicle.

C.6 Hot Weather Concreting

The contractor is responsible for the quality of the concrete pavement placed in hot weather.

Take the following steps to ensure that the concrete will cure during hot weather conditions. Submit a written temperature control plan at or before the pre-pour meeting. In that plan, outline the actions to control concrete temperature if the concrete temperature at the point of placement exceeds 80° F (27° C). Do not place concrete without the engineer's written acceptance of that temperature control plan. Perform the work as outlined in the temperature control plan.

If the concrete temperature at the point of placement exceeds 90° F (32° C), do not place concrete for items covered in this special provision.

Notify the engineer whenever conditions exist that might cause the temperature at the point of placement to exceed 80° F (27° C). If project information is not available, obtain information from similar mixes placed for other nearby work.

C.7 Lots by Lane-Feet

Add the following to standard spec 715.3.1.2.2 as paragraph three:

(3) A sublot is 350 linear feet for 3-lane paving width or 2-lane plus shoulder.

C.8 Strength Evaluation

Replace standard spec 715.3.2.2.1 with the following:

715.3.2.2.1 Pavement

(1) If a sublot flexural strength is less than 550 psi, the department may direct the contractor to core that sublot to determine its structural adequacy and whether to direct removal. Cut and test cores according to AASHTO T24 as and where the engineer directs. Have an HTCP-certified PCC technician I perform or observe the coring.

(2) The sublot pavement is conforming if the compressive strengths of all cores from the sublot are 3000 psi or greater or the engineer does not require coring.

(3) The sublot pavement is nonconforming if the compressive strengths of any core from the sublot is less than 3000 psi. The department may direct removal and replacement or otherwise determine the final disposition of nonconforming material as specified in 106.5.

D (Vacant)

E Payment

Replace standard spec 415.5.1(1) with the following:

(1) The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.0003	Concrete Pavement 8-Inch Special	SY

Replace standard spec 415.5.1(2) with the following:

(2) Payment for the Concrete Pavement bid items is full compensation for providing pavement; for preparing the foundation, unless provided otherwise; for joint layout and joint layout design, for placing thickness plates; and for thickness coring and filling core holes as required under 415.3.16.4. Payment also includes providing tie bars and dowel bars within concrete placed under the contract. The department will pay separately for tie bars and dowel bars used to connect the work to concrete not placed under the contract under the Drilled Tie Bars and Drilled Dowel Bars bid items as specified in 416.5. The department will not pay for removal and replacement of pavement not meeting the surface smoothness tolerances specified in 415.3.10.

Payment also includes sealing joints with silane sealer, sawing of concrete pavement, and any additive or action taken to control the temperature of concrete.

304. Concrete Pavement 10.5-Inch Special, Item SPV.0180.0004; Concrete Pavement 11.5-Inch Special, Item SPV.0180.0005.

A Description

This special provision describes specialized material and construction requirements to use on mainline concrete pavement and shoulders, and freeway entrance and exit ramps.

Conform to standard spec 415, 501, and 715 as modified in this special provision.

B Materials

B.1 Reinforcement

Replace standard spec 415.2.2 with the following:

(1) Furnish high performance dowel bars for transverse joints from the WisDOT Approved Products List (APL) located at:

https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/default.aspx

(2) Furnish only one type of high-performance bar for all concrete pavement under the contract.

B.2 Coarse Aggregates

B.2.1 General

Replace standard spec 501.2.7.3.1 (2) with the following:

Use clean, hard, durable crushed limestone with 100 percent fractured surfaces and free of an excess of thin or elongated pieces, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.

Use virgin aggregates only.

B.3 Deleterious Substances

Replace standard spec 501.2.7.2.2 (1) and 501.2.7.3.3 with the following:

The quantity of deleterious substances shall not exceed the following percentages:

DELETERIOUS SUBSTANCE	PERCENT BY WEIGHT
Shale	1.0
Coal	1.0
Clay lumps	0.3
Soft fragments	3.0
Any combination of above	3.0
Thin or elongated pieces based on a 3:1 ratio[1]	10.0
Materials passing the No. 200 (75 µm) sieve	1.5
Chert[2]	3.0
Lightweight pieces in concrete not for prestressed members[3]	5.0

[1] As modified by CMM 860.

[2] Material classified lithologically as chert and having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of chert by dividing the weight of chert in the sample retained on a 3/8-inch (9.5 mm) sieve by the weight of the total sample.

[3] Material having a saturated surface-dry bulk specific gravity of less than 2.45, tested according to AASHTO T113. Determine the percentage of lightweight pieces by dividing the weight of lightweight pieces in the sample retained on the 3/8-inch sieve by the weight of the total sample.

B.4 Physical Properties

Replace standard spec 501.2.7.3.2 (1) and (2) with the following:

(1) The percent LA wear shall not exceed 30 percent.

(2) The department will ensure that soundness testing conforms to AASHTO T 104, using five cycles in sodium sulfate solution on aggregate retained on the No. 4 (4.75 mm) sieve. The weighted loss shall not exceed 6 percent.

The department will ensure that freeze-thaw soundness testing confirms to AASHTO T 103. The weighted freeze-thaw average loss shall not exceed 15 percent.

B.5 Joint Filler

Replace standard spec 415.2.6 with the following:

(1) Furnish a silane sealer from the department's approved product list for Concrete Protective Surface Treatments.

C Construction

C.1 Jointing

Replace standard spec 415.3.7.1 (2) with the following:

For all intersections, ramps and mainline pavement; plan and locate all points necessary to establish the horizontal position of the transverse and longitudinal joints in the concrete to prevent uncontrolled cracking. Submit a joint layout design plan to the engineer at least 7 calendar days before paving. Do not layout joints until the engineer has reviewed the joint layout design. Mark the location of the concrete joints in the field prior to or after paving. Follow the plan details for joints in the concrete, making adjustments as required to fit field conditions.

Supplement standard spec 415.3.7.1 with the following:

(9) Remove all saw slurry from sawed joints and allow to dry thoroughly before application of silane joint sealer.

(10) Apply silane joint sealer to all sawed surfaces of the transverse and longitudinal joints unless directed otherwise by the engineer. Apply the silane joint sealer directly to the interior of the sawed joint. Do not use a broadcast spray method of application.

(11) Apply silane joint sealer per manufacturers specifications

(12) Apply silane joint sealer within one month of concrete placement.

C.2 Surface Finishing

Replace standard spec 415.3.8.3.1 with the following:

(1) Tine freshly placed pavement as soon as it is practical after floating.

(2) Tine with a self-propelled tining machine. Where using a tining machine is not practical, tine by hand. Produce uniformly deep grooves approximately 1/8 to 3/16 inch (3 mm to 5 mm) deep.

(3) Construct a finished surface free of tining defects. Complete before tining tears or unduly roughens the concrete.

(4) Tine surface longitudinally as specified in standard spec 415.3.8.3.2.

C.3 Curing Concrete

Replace standard spec 415.3.12.1 with the following:

(1) Maintain adequate moisture throughout the concrete mass to support hydration until the concrete develops sufficient strength to open it to service. Cure all concrete by impervious coating as specified in standard spec 415.3.12.2 within 75 minutes from the time concrete is discharged from the truck. Use PAM except, use curing compound conforming to 501.2.8 on pavement will get an overlay under the contract or as directed by the engineer. The liquid curing compound shall have a color equal to or lighter than Gardner Color Standard No.2 when tested according to ASTM C 1315.8.7.6 Yellowing Resistance.

(2) If the concrete is not cured as specified in the subsection, the engineer may suspend concrete placement operations.

C.4 Extended Delivery Time

Delete standard spec 501.3.2.4.3.3.

C.5 Ready-Mixed Concrete

Replace standard spec 501.3.5.1 with the following:

Use central-mixed concrete for all work under this special provision. Central-mixed concrete is mixed in a stationary mixer and transported to the point of delivery with or without mechanical agitation in the transporting vehicle.

C.6 Hot Weather Concreting

The contractor is responsible for the quality of the concrete pavement placed in hot weather.

Take the following steps to ensure that the concrete will cure during hot weather conditions. Submit a written temperature control plan at or before the pre-pour meeting. In that plan, outline the actions to control concrete temperature if the concrete temperature at the point of placement exceeds 80° F (27° C). Do not place concrete without the engineer's written acceptance of that temperature control plan. Perform the work as outlined in the temperature control plan.

If the concrete temperature at the point of placement exceeds 90° F (32° C), do not place concrete for items covered in this special provision.

Notify the engineer whenever conditions exist that might cause the temperature at the point of placement to exceed 80° F (27° C). If project information is not available, obtain information from similar mixes placed for other nearby work.

C.7 Lots by Lane-Feet

Add the following to standard spec 715.3.1.2.2 as paragraph three:

(3) A sublot is 350 linear feet for 3-lane paving width or 2-lane plus shoulder.

C.8 Strength Evaluation

Replace standard spec 715.3.2.2.1 with the following:

715.3.2.2.1 Pavement

(1) If a sublot flexural strength is less than 550 psi, the department may direct the contractor to core that sublot to determine its structural adequacy and whether to direct removal. Cut and test cores according to AASHTO T24 as and where the engineer directs. Have an HTCP-certified PCC technician I perform or observe the coring.

(2) The sublot pavement is conforming if the compressive strengths of all cores from the sublot are 3000 psi or greater or the engineer does not require coring.

(3) The sublot pavement is nonconforming if the compressive strengths of any core from the sublot is less than 3000 psi. The department may direct removal and replacement or otherwise determine the final disposition of nonconforming material as specified in 106.5.

D (Vacant)

E Payment

Replace standard spec 415.5.1(1) with the following:

(1) The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.0004	Concrete Pavement 10.5-Inch Special	SY
SPV.0180.0005	Concrete Pavement 11.5-Inch Special	SY

Replace standard spec 415.5.1(2) with the following:

(2) Payment for the Concrete Pavement bid items is full compensation for providing pavement; for preparing the foundation, unless provided otherwise; for joint layout and joint layout design, for placing thickness plates; and for thickness coring and filling core holes as required under 415.3.16.4. Payment also includes providing tie bars and dowel bars within concrete placed under the contract. The department will pay separately for tie bars and dowel bars used to connect the work to concrete not placed under the contract under the Drilled Tie Bars and Drilled Dowel Bars bid items as specified in 416.5. The department will not pay for removal and replacement of pavement not meeting the surface smoothness tolerances specified in 415.3.10.

Payment also includes sealing joints with silane sealer, sawing of concrete pavement, and any additive or action taken to control the temperature of concrete.

305. Asphaltic Material Binder, Item SPV.0180.0106.

A Description

This special provision describes furnishing and applying an asphaltic material binder to aggregate, at locations shown in the plans, to control erosion and prevent the growth of vegetation.

B Materials

B.1 General

Furnish emulsified asphalt, type RS 1 or RS 2 conforming to AASHTO M140, or type CRS 1 or CRS 2 conforming to AASHTO M208 for the asphaltic material.

Furnish evidence, to the satisfaction of the engineer, that the proposed product has been successfully used in a similar application.

C Construction

C.1 Application

Apply the Asphaltic Material binder uniformly over the dry surface at a rate just sufficient to ensure penetration and binding of the particles in the upper 2 inches of the aggregate blanket according to the manufacturer's recommended rate and procedures. Avoid excessive application of asphaltic material binder and exercise care to prevent material run-off. Protect the surface of adjacent structures, barriers, and pavement to prevent splattering or discoloration by asphaltic material.

Protect asphaltic material binder from excessive dust exposure for the first 4 hours of curing.

C.2 Test Section

Prepare a test section utilizing aggregate and asphaltic material binder so the engineer will be able to assess the adequacy of the product and the application to yield the desired results. Test section to be a minimum of 3-feet x 3-feet. Notify the engineer no less than 24 hours in advance of preparing the test section to allow him time to arrange for witnessing the asphaltic material binder application and mixing with the aggregate. Cure test section according to product manufacturer's requirements before the engineer will accept the product for use.

If the test section is not accepted, prepare another test section and repeat the process. Repeat this procedure until the engineer accepts the test section. Use the same asphaltic material binder means and methods when installing the product that were used in preparing the accepted test section.

D Measurement

The department will measure Asphaltic Material Binder by the square yard in place, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.0106	Asphaltic Material Binder	SY

Payment is full compensation for furnishing, mixing and applying the asphaltic material binder to the aggregate; for cleaning any splatter of asphaltic material binder from adjacent structures, barriers, and pavement; and for making and disposing of test sections.

306. Membrane Waterproofing UPRR, Item SPV.0180.4000.

A Description

This special provision describes furnishing and installing a multi-layered cold liquid-applied elastomeric waterproofing membrane system with protection continuously along the horizontal surface of the deck plates, the inside surface of ballast retainers composed of rolled shapes, and the horizontal surface of the

approach slabs of the railroad structure, according to the details shown on the plans, as directed by the engineer or the UPRR engineer, and as hereinafter provided.

B Materials

B.1 General

Furnish a cold liquid-applied elastomeric membrane, applied over a primer, and covered with a spray-on protection layer, and according to the requirements for Waterproofing as specified in Part 29, Chapter 8, Volume 2 of the current AREMA Specifications. The membrane must be resistant to water and resistant to chemical attack.

Before the material is installed, submit a detailed waterproofing submittal to the engineer and the UPRR engineer for approval. The submittal shall include, but not necessarily be limited to:

(i) Material certifications and samples of the primer, membrane including any jointing material or other details developed by the waterproofing manufacturer, and protection of the membrane system.

(ii) Installation procedures and Installer's certification.

(iii) Inspection and field-testing criteria.

(iv) Joint details, or all other details developed to accurately describe the waterproofing installation for prior approval.

(v) Testing procedures for field quality control as described in subsection C.5.

B.2 Elastomeric Membrane Primer

Furnish a primer compatible with the steel deck and the elastomeric membrane. Furnish a primer compatible with the concrete approach slabs. Furnish primers consistent with the manufacturer's recommendations.

B.3 Cold Liquid-Applied Elastomeric Membrane

Furnish an elastomeric membrane that is 100% reactive spray-applied material, applied to a minimum thickness of 80 mils, that meets the following specifications:

Property	Test Method	Specific Value
Water Vapor Transmission	ASTM E96, procedure B or BW	Equal to or less than 0.2 perms, which is 0.1 grains/ft2/h (1.14x10-8g/Pa.s.m2)
Elongation at Break	ASTM D638	Minimum 80%
Min. Tensile Strength	ASTM D638	930 psi (6.4 MPa)
Adhesion to Steel	ASTM D4541	290 psi (2.0 MPa)
Adhesion to Concrete	ASTM D4541	100 psi (0.7 MPa)
Crack Bridging	ASTM C836	Meet the low temperature flexibility and crack bridging requirements of 10 cycles of 1/8 inch (3.2 mm) at -15 degrees F (-26 degrees C)

Furnish certification from an approved independent testing agency that the supplied material meets designated test performance requirements to the UPRR engineer and the engineer for review and approval.

B.4 Spray-On Protection Layer

Furnish a protection layer that is 100% reactive spray-applied material, applied to a minimum thickness of ¼ inch, that meets the following specifications:

Property	Test Method	Specific Value
Elongation at Break	ASTM D638	Minimum 80%
Min. Tensile Strength	ASTM D638	930 psi (6.4 MPa)

Furnish certification from an approved independent testing agency that the supplied material meets designated test performance requirements to the UPRR engineer and the engineer for review and approval.

C Construction

C.1 General

Do not apply waterproofing without written permission of the engineer and the UPRR engineer and not until a minimum of 7 days after concrete has been placed. Do not apply waterproofing when the atmospheric temperature is below 40 degrees F. Sand blast metal surfaces to remove contamination, providing 3 to 5 mil blast profile. Prepare metal surfaces to SSPC-SP10 White Blast or better. Ensure all surfaces to be waterproofed are clean, smooth, dry, and free from fins, sharp edges, oil, grease, and loose or foreign materials. Fill or remove projections or depressions on the surface on which the membrane is to be applied that may cause injury to the membrane, as directed by the engineer or the UPRR engineer. Mask protected surfaces as required prior to spray applications.

During construction, exercise care to prevent injury to the waterproofing membrane due to the passage of workers and equipment. As soon as permitted by the manufacturer's recommendations after the membrane waterproofing has been placed, protect it from damage by installing a spray-on protection layer.

C.2 Elastomeric Membrane Primer

Spray or roll primers at 400 to 600 square feet per gallon over surfaces to receive coating system. Allow primers to go tack-free before spraying deck membrane coat. Reapply primer if it has set for more than 18 hours.

C.3 Cold Liquid-Applied Elastomeric Membrane

Spray base coat of deck membrane over primed surfaces at the required thickness noted above. Retouch coat by filling low spots or areas with inadequate thickness. Spray additional deck membrane coats to achieve specified deck membrane thickness. Retouch as required. Install deck membrane protection course per manufacturer's recommendations.

C.4 Spray-On Protection Layer

Spray protection layer over deck membrane surfaces at the required thickness noted above. Retouch layer by filling low spots or areas with inadequate thickness. Spray additional protection layer coats to achieve specified protection layer thickness. Retouch as required. Broadcast aggregate into ballast protection layer as required by the manufacturer in conformance with the submittal in section B.1. Install ballast on protection layer as indicated in the plans after curing time determined by the manufacturer.

C.5 Field Quality Control

Perform dry film thickness tests of the deck membrane coat and the protection layer according to SSPC-PA2 (Measurement of Dry Coating Thickness) as required.

In-place joint leak testing: Perform in-place joint leak testing in conformance with the approved testing procedures previously submitted in subsection B.1, prior to placement of ballast. Submit a testing procedure that allows for a minimum of 3" of water to be placed over any joint and allowed to set for a minimum period of 30 minutes. The joint will be considered watertight if there are no leaks through the joint after this 30-minute period.

C.6 Manufacturer's Representative

Arrange for manufacturer's representative of the membrane waterproofing system to observe and approve the installation, and observe the testing indicated in subsection C.5. Submit a certification of installation by the manufacturer's representative to the engineer and the UPRR engineer.

D Measurement

The department will measure Membrane Waterproofing UPRR by the square yard, acceptably completed. The area measured for payment will be the area of the floor plates, ballast stop plates, and the top surface of the approach slabs that are covered by the cold liquid-applied elastomeric membrane system.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.4000	Membrane Waterproofing UPRR	SY

Payment is full compensation for furnishing and installing the primer; the membrane; the protection layer; submitting details, samples, certifications, installation and testing procedures, and for presence on-site of the manufacturer's representative.

307. Geotextile Type DF UPRR, Item SPV.0180.4005; Geotextile Type SAS UPRR, Item SPV.0180.4006.

A Description

Provide geotextiles for work within UPRR right-of-way according to the details shown on the plans, standard spec 645, and as hereinafter provided.

B Materials

B.1 General

Furnish materials according to standard spec 645.2.1 and 645.2.2.1, with the following modifications:

Replace standard spec 645.2.2.1(2), with the following:

Furnish a manufacturer's certified report of test or analysis that shows the geotextile delivered meets the requirements of this special provision to the engineer and the UPRR engineer for approval at least 30 calendar days before use in the work. Do not install geotextiles before obtaining approval of these reports from the engineer and the UPRR engineer. Mark the delivered geotextile to clearly identify it with the applicable test report furnished to the engineer and the UPRR engineer.

B.2 Geotextile, Type DF UPRR (Drainage Filtration for UPRR work)

Furnish this geotextile according to standard spec 645.2.2.4, with the following modifications:

Replace standard spec 645.2.2.4(1), with the following:

Furnish this geotextile conforming to the Class A survivability properties outlined in AREMA Table 1-10-7 and the filtration properties outlined in AREMA Table 1-10-8, and as further described in AREMA 1-10.2.2. Submit reports described in subsection B.1 of this special provision that complies with AREMA 1-10.2.4.

B.3 Geotextile, Type SAS UPRR (Subgrade Aggregate Separation for UPRR work)

Furnish this geotextile according to standard spec 645.2.2.2, with the following modifications:

Replace standard spec 645.2.2.2(1), with the following:

Furnish this geotextile conforming to the Extra Heavy nonwoven properties outlined in AREMA Table 1-10-2, or the enhanced woven properties outlined in AREMA Table 1-10-3, and as further defined in AREMA 1-10.1.1.4, or 1-10.1.2.5, as applicable. Submit reports described in subsection B.1 of this special provision that complies with AREMA 1-10.1.1.6, or 1-10.1.2.7, as applicable.

C Construction

Furnish and install Geotextile Type DF UPRR according to standard spec 645.3.1.1 and 645.3.1.4.

Furnish and install Geotextile Type SAS UPRR according to standard spec 645.3.1.1 and 645.3.1.2.

D Measurement

The department will measure Geotextile UPRR bid items by the square yard, acceptably completed according to standard spec 645.4.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.4005	Geotextile Type DF UPRR	SY
SPV.0180.4006	Geotextile Type SAS UPRR	SY

Payment is full compensation for providing geotextiles according to standard spec 645.5, and for furnishing certified test reports for approval to the engineer and the UPRR engineer before installing the geotextiles.

308. HMA Longitudinal Joint Repair, Item SPV.0195.0001.

A Description

This special provision describes providing longitudinal joint repairs in HMA pavements. Conform to standard spec 204, 315, 455, and 460, and as follows.

B Materials

Furnish asphaltic mixture as specified for type 3 HT 58-28 H under standard spec 460.2.

Provide tack coat conforming to standard spec 455.2.5.

C Construction

C.1 General

Remove an area 1.5 to 3 feet wide and at least to the full depth of asphaltic pavement; the engineer will determine the repair length. Remove damaged concrete pavement discovered below the asphalt during this removal and replace with asphalt mixture.

Clean the existing exposed concrete pavement surface before placing tack coat.

Apply asphaltic materials the same day the joint is removed to prevent the entrance of water. Do not apply if weather or surface conditions are unfavorable or before impending rains.

Conform to standard spec 315.3.1 for placement of the HMA pavement.

Dispose of removed pavement and other waste materials outside of the project limits unless the engineer allows otherwise.

C.2 Maintenance

Maintain repaired joints during the contract. Remove and replace additional tack coat and HMA pavement if the engineer directs.

D Measurement

The department will measure HMA Longitudinal Joint Repair by the ton, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.0001	HMA Longitudinal Joint Repair	TON

Payment is full compensation for providing the joint repair including removing the existing asphaltic surface and damaged concrete; for tack coat and asphaltic pavement mixture; and for maintaining the repair during the contract.

309. HMA Transverse Joint Repair, Item SPV.0195.0002.

A Description

This special provision describes providing transverse joint repairs in HMA pavements at bridges. Conform to standard spec 204, 315, 455, and 460, and as follows.

B Materials

Furnish asphaltic mixture as specified for type 3 MT 58-28 S under standard spec 460.2. Provide tack coat conforming to standard spec 455.2.5.

C Construction

C.1 General

Remove an area 2 feet wide and at least to the full depth of asphaltic pavement; the engineer will determine the repair length. Remove damaged concrete pavement discovered below the asphalt during this removal, and replace with asphalt mixture.

Clean the existing exposed concrete pavement surface before placing tack coat.

Apply asphaltic materials the same day the joint is removed to prevent the entrance of water. Do not apply if weather or surface conditions are unfavorable or before impending rains.

Conform to standard spec 315.3.1 for placement of the HMA pavement

Dispose of removed pavement and other waste materials outside of the project limits unless the engineer allows otherwise.

C.2 Maintenance

Maintain repaired joints during the contract. Remove and replace additional tack coat and HMA pavement if the engineer directs.

D Measurement

The department will measure HMA Transverse Joint Repair by the ton, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.0002	HMA Transverse Joint Repair	TON

Payment is full compensation for providing the joint repair including removing the existing asphaltic surface and damaged concrete; for tack coat and asphaltic pavement mixture; and for maintaining the repair during the contract.

310. Subballast UPRR, Item SPV.0195.0840.

A Description

This special provision describes installing subballast above UPRR track embankment as fill material under ballast as noted on the plans according to section 34 11 27 of the UPRR General Conditions and Specifications, except as hereinafter modified.

B Materials

Furnish subballast conforming to section 34 11 27 Subballast Part 2 – Products of the UPRR General Conditions and Specifications. Subballast materials shall comply with the gradations criteria indicated in UPRR standard drawing 0010E.

C Construction

C.1 General

Construct according to Part 3 - Execution of section 34 11 27 of the UPRR General Conditions and Specifications.

D Measurement

The department will measure Subballast UPRR by the ton, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.0840	Subballast UPRR	TON

Payment is full compensation for furnishing, spreading, placing and testing subballast.

311. Base Aggregate Open Graded Special, Item SPV.0195.4000.

A Description

This special provision describes installing open graded base as fill material behind abutments as noted on the plans to construct a temporary drilling platform for drilling wall secant piles at the abutments according to standard spec 310, except as hereinafter modified.

B Materials

Furnish Base Aggregate Open Graded aggregate material conforming to standard spec 310.

Furnish Geotextile, Type SAS fabric material conforming to standard spec 645.

C Construction

Place fabric material on top of on-site soils before spreading base aggregate.

Use standard compaction to compact the base aggregate open graded material in French drains according to standard spec 301.3.4.2.

Compact the base aggregate open graded material behind abutments using general Standard Compaction procedures per standard spec 301.3.4.2 except as hereinafter modified. The maximum loose thickness of base aggregate per lift of fill prior to compaction is 8 inches. Compaction of the open-graded aggregate should be performed with hand-operating equipment between pile flanges and at least three passes using a vibratory plate compactor such as a Wacker Neuson Model DPU 5545He vibratory plate or equivalent equipment as approved by the engineer, and the UPRR engineer if applicable. A minimum of three passes of the compactor are required in two mutually perpendicular directions (at least 6 passes total), such that with additional compactive effort, no further densification is obtained as visually determined by a geotechnical engineer. If additional densification is observed after three passes in the two directions, then the material must be re-compacted until no further visual densification is observed.

Verify the maximum and minimum density using test methods in ASTM D4253 and ASTM D4254, respectively. Perform one test of the compacted material placed behind abutments. Compact tested material using similar procedures described above for field compaction until no further visual densification is observed. Report the results to the engineer and the UPRR engineer for approval.

Verify the angle of internal friction through the Direct Shear Test in conformance to AASHTO T-236. Perform one test for every 500 cubic yards of compacted material placed behind abutment walls only. Compact tested material using similar procedures described above for field compaction until no further visual densification is observed. Report the results to the engineer and the UPRR engineer for approval.

D Measurement

The department will measure Base Aggregate Open Graded Special by the ton, acceptably completed.

E Payment

The department will pay for the measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.4000	Base Aggregate Open Graded Special	TON

Payment is full compensation for preparing the foundation, including excavation of French drains; and for stockpiling, placing, shaping, compacting, and maintaining the base. The department will pay for EBS in areas of placed base (as noted on the plans and elsewhere, if required due to unstable soil as determined by the engineer), dust control water, and compaction water as specified in standard spec 301.5.

312. Excavation, Hauling, and Disposal of Solid Waste Soil, Item SPV.0195.4005.

A Description

The department completed a review of environmental documents and databases for soil contamination at locations within this project where excavation is required. The review indicated that solid waste (contaminated soil) is likely to be encountered during excavation near the Union Pacific Railway at the following locations:

1. 97UPRR+40 to 98UPRR+30, from approximately 35 feet left to 105 feet right of reference line, from approximately 0 to 20+ feet below existing grade.
2. 100UPRR+30 to 101UPRR+40, from approximately 35 feet left to 105 feet right of reference line, from approximately 0 to 20+ feet below existing grade.
3. 105UPRR+25 to 108UPRR+50, from approximately 42 feet left to 72 feet left of the reference line, from approximately 0 to 3+ feet below existing grade.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the areas of the railroad crossing described above.

The environmental consultant for this project is:

Consultant:	TRC Environmental Corporation
Address:	150 N. Patrick Blvd., Suite 180, Brookfield, WI 53045
Contact:	Bryan Bergmann
Phone:	(262) 901-2126 office, (262) 227-9210 cell
Fax:	(262) 879-1220
E-mail:	bbergmann@trccompanies.com

Information regarding the department's hazardous materials assessment and the potential for handling and disposal of contaminated soil is available by contacting:

Name:	Andrew Malsom
Address:	141 NW Barstow St., Waukesha, WI 53187
Phone:	(262) 548-6705
E-mail:	Andrew.Malsom@dot.wi.gov

Control construction operations at the locations described above to ensure that they do not extend beyond the excavation limits indicated in the plans.

Soil samples collected during construction from the areas identified above will be submitted to a laboratory for analytical testing. The results of the laboratory testing will be used to determine if the soil requires landfill disposal or can be considered common excavation. The soil sampling, laboratory testing, and approval for landfill disposal (if necessary) is estimated to take up to 12 business days to complete.

Soil samples shall be collected from test pits excavated by the contractor at the locations described above or from a temporary stockpile if the contractor excavates soil from the location described prior to testing. Test pits and temporary stockpiling of soil is incidental to the contract. The stockpile shall be located within the right-of-way and placed on plastic and covered with plastic according to NR 718.05 of the Wisconsin Administrative Code.

If analytical testing indicates the stockpiled soil requires landfill disposal, the closest landfills to the project would be the following.

Waste Management Orchard Ridge Landfill
W124 N9355 Boundary Rd.
Menomonee Falls, WI 53051
(866) 909-4458

Advanced Disposal Emerald Park Landfill

W124 S10629 South 124th St.
Muskego, WI 53150
(414) 529-1360

Perform this work according to standard spec 205 and with pertinent parts of Chapter NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport contaminated soil,

If contaminated soil is encountered at this site or elsewhere on the project during excavation, terminate excavation in the area and notify the engineer.

A.1 Excavation Management Plan

The excavation management plan for this project has been designed to minimize the offsite landfilling of contaminated material. The excavation management plan, including these special provisions, has been developed in cooperation with the WDNR. The WDNR concurrence letter is on file at the Wisconsin Department of Transportation. For further information regarding previous investigation and remediation activities at this site contact:

Name:	Andrew Malsom
Address:	141 NW Barstow Street, PO Box 798, Waukesha, WI 53187-0798
Phone:	(262) 548-6705
Fax:	(262) 548-6891
E-mail:	andrew.malsom@dot.wi.gov

A.2 Coordination

Coordinate work under this contract with the environment consultant:

Consultant:	TRC Environmental Corporation
Address:	150 N. Patrick Blvd., Ste. 180, Brookfield, WI 53045
Contact:	Bryan Bergmann
Phone:	(262) 901-2126 office, (262) 227-9210 cell
Fax:	(262) 879-1220
E-mail:	bbergmann@trccompanies.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of contaminated soil to be excavated as expressed on the project plans and described in the special provisions;
2. Coordinating lab testing for landfill acceptance;
3. Identifying contaminated soils to be hauled to the landfill;
4. Obtaining landfill permitting and documentation of proper landfill disposal;
5. Documenting that activities associated with management of contaminated soil are in conformance with the contaminated soil management methods for this project as specified herein.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the area of possible contaminated soil to the environmental consultant. Also notify the environmental consultant at least three calendar days prior to commencement of excavation activities in the area with possible contaminated soil.

Identify the landfill that will be used for disposal of contaminated soil and provide this information to the environmental consultant no later than 30 calendar days prior to commencement of excavation activities in the possible contaminated soil area or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals for disposal. Do not transport contaminated soil offsite without prior approval from the environmental consultant.

A.3 Health and Safety Requirements

Add the following to standard spec 107.1:

During excavation activities, expect to encounter soil possibly contaminated with Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), and/or Metals. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each contaminated site location as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer prior to the start of work.

B (Vacant)

C Construction

Add the following to standard spec 205.3:

Control operations in the possible contaminated soil areas to minimize the quantity of contaminated soil excavated.

Excavate the possible contaminated soil in the areas shown in the plan. Stockpile the material within the project footprint of DOT right-of-way, pending lab results and landfill acceptance (if necessary). Construct and maintain a temporary stockpile of the material according to NR 718.05(3), including, but not limited to, placement of the contaminated soil/fill material on an impervious surface and covering the stockpile with impervious material to prevent infiltration and precipitation. In lieu of temporary stockpiling the possible contaminated soil, excavate test pits as directed by the environmental consultant prior to excavation in the areas of possible contaminated soil.

The environmental consultant will coordinate analytical testing of possible contaminated soil for landfill acceptance. Five business days should be allowed for the laboratory to conduct this testing and issue results. In the event the laboratory analytical test results do not indicate contamination is present, the stockpiled material may be considered common excavation and can be handled according to the erosion control implementation plan (ECIP).

Once landfill acceptance permitting is complete (if necessary), directly load and haul soils to the landfill as directed by the environmental consultant. Use loading and hauling practices that are appropriate to prevent any spills or releases of contaminated soil or residues. Prior to transport, sufficiently dewater soils designated for off-site bioremediation so as not to contain free liquids. Verify that the vehicles used to transport contaminated materials are licensed for such activity according to applicable state and federal regulations.

When material is encountered outside the above-identified limits of possible contaminated soil that appears to have been impacted with petroleum or chemical products or when other obvious potentially contaminated materials are encountered or material exhibits characteristics of industrial-type wastes, such as fly ash, foundry sand, and cinders, or when underground storage tanks are encountered, suspend excavation in that area and notify the engineer and the environmental consultant.

Groundwater may be present within the construction limits. Water generated during dewatering operations (if necessary) is expected to be permitted to discharge to the surface except in the contaminated areas. Contaminated groundwater generated from dewatering activities within the contaminated areas may exceed the surface water discharge limits for petroleum compounds specified in DNR's "General Permit to Discharge under the Wisconsin Pollutant Discharge Elimination System" for "Contaminated Groundwater from Remedial Action Operations" (WPDES Permit No. WI-0046566-5), Table 3.1.

If dewatering is required in an area of observed contamination, water generated from dewatering activities may contain PAHs, SVOCs, and Metals. Such water may, with approval of sanitary sewer owner, be discharged to the respective sanitary system as follows:

1. Meet all applicable requirements of the local municipality including the control of suspended solids. Perform all necessary monitoring to document compliance with sanitary sewer owner's requirements. Furnish, install, operate, maintain, disassemble, and remove treatment equipment necessary to comply with the sanitary sewer owner's requirements.

2. Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities.
3. Notify the engineer of any dewatering activities and obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

Costs for this dewatering and disposing of contaminated water are incidental to the contract.

Employ construction methods and techniques in a manner that will minimize the need for dewatering, andif dewatering is required, minimize the volume of water generated. Take measures to limit groundwater, surface water, and precipitation from entering and exiting excavations in the areas of contamination. Such measures, which may include berming, ditching, or other means, shall be maintained until construction in the areas of contamination are complete.

D Measurement

The department will measure Excavation, Hauling, and Disposal of Solid Waste Soil in tons of contaminated soil or solid waste, accepted by the landfill as documented by weight tickets generated by the landfill.

E Payment

Temporary stockpiling of soil is incidental to the contract.

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.4005	Excavation, Hauling, and Disposal of Solid Waste Soil	TON

Payment is full compensation for excavating, stockpiling (including contractor-provided plastic sheeting to cover as well as place the material on), loading, and hauling the solid waste soil to a landfill; obtaining solid waste collection and transportation service operating licenses; assisting in the collection of soil samples for field evaluation; and dewatering of soils prior to transport, if necessary.

313. Coarse Aggregate Mix for Stream Bed, Item SPV.0195.0410.

A Description

This special provision describes providing Coarse Aggregate Mix for Stream Bed at the locations shown in the plans or as directed by the engineer. Conform to standard spec 606 and as follows.

B Materials

Furnish Coarse Aggregate Mix material consisting of natural, rounded uncrushed coarse aggregate. Furnish a mix consisting of roughly 75% number 2 stone and 25% 3/8-inch pea gravel, thoroughly mixed. The mix must be approved by the engineer prior to installation. Crushed concrete and/or crushed concrete particles are prohibited from being used in the Coarse Aggregate Mix.

C Construction

Compact the Coarse Aggregate Mix as construction progresses. The finished surface shall present an even, tight surface.

D Measurement

The department will measure Coarse Aggregate Mixture for Stream Bed by the ton in place and completed work, and the quantity thereof to be paid for shall be the summation of tons of such Coarse Aggregate Mix incorporated in the work, according to the contract. Only accepted work will be measured for payment and the computation of the quantity thereof will be based on the volume within the limiting dimensions designated on the plans, in the contract or established by the engineer.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.4010	Coarse Aggregate Mix for Stream Bed	TON

Payment is full compensation for furnishing and placing Coarse Aggregate Mix.

314. Reconstruct MMSD Sanitary Manhole, Item SPV.0200.5000.

A Description

This work includes reconstructing a sanitary manhole to an elevation as determined by the engineer, according to the details as shown in the plans and the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and amendments (SSSW) and as hereinafter provided in these special provisions.

B Materials

B.1 Manhole

Manhole barrel and cone sections shall be constructed of precast reinforced concrete sections. Precast manholes and tops shall conform to ASTM Specifications, C478, latest revision.

B.2 Adjusting Rings

Adjustment rings shall be concrete with steel reinforcement in conformance with ASTM C-478. Precast concrete rings shall have an inside diameter to match the manhole opening, be not less than 2 inches nor more than 6 inches high, and have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring. Do not use any cracked or broken rings. The top of precast manhole cones shall be set a maximum of 18 inches lower than established grade in unimproved areas, with the top of the manhole cover being ringed up flush with the existing ground. The minimum number of adjusting rings shall be one 2-inch ring. The maximum height of adjusting rings shall be 8 inches in paved areas. All joints between the adjusting rings shall be filled with grout or mortar, including between the cone and the adjusting ring and the adjusting ring and the frame. Rings shall be grooved to receive a step.

B.3 Manhole Seal

Furnish new internal frame/chimney seal as manufactured by Cretex Specialty Products, NPC Flexrib, or approved equal. The seal shall meet the material requirements of section 8.42.3 and the performance requirements of section 8.42.4 of the SSSW.

B.4 Joints

Joints for precast manholes shall meet the requirements of ASTM C-443, latest revision, except that sealant shall be butyl rubber gasket or butyl rubber rope. Flexible butyl rubber gaskets or rope shall comply with the physical requirements for Type “B” gaskets in AASHTO Designation M-198, or Federal Specification SSS-00210-A, sealing compound, preformed plastic for expansion joints and pipe joints.

B.5 Steps

All manholes shall be provided with steps equally spaced vertically on center installed by the manufacturer as shown on the standard detail sheet. Steps shall be embedded into the riser or conical top section of the wall a minimum of 3 inches. Manhole steps shall meet the requirements of section 8.40.1 of the SSSW.

B.6 Elastomeric Waterproofing Sealer

Elastomeric waterproofing membrane shall be a single component, bitumen-modified, moisture-curing polyurethane similar to TREMproof 60 as manufactured by Tremco, 10701 Shaker Blvd., Cleveland, Ohio 44104; Duramem V500 as manufactured by Pecora Corporation, 2601 Oakland Avenue, Garland, Texas 75040; Thiodeck C.F. as manufactured by Toch/Carboline Company, 350 Hanley Industrial Court, St. Louis, Missouri 63144; or equal.

B.7 Plastic Sheet

Plastic sheet shall be clear plastic, minimum 4 mils. thick, of length and width to cover elastomeric waterproofing sealer.

B.8 Backfill Slurry

Backfill slurry shall meet the material and construction requirements of section 8.43.8 of the SSSW.

C Construction

C.1 General

Reconstruct manholes to conform to the detail on the standard detail sheet and in the locations shown in the plans.

The location of existing sanitary manholes to be reconstructed is indicated on the plans. Reconstruct these items as shown in the plans. Reconstruct manholes as necessary so that the frames and lid when placed will be at the established required grade. Install seals according to the manufacturer's recommended installation procedures. Furnish and use backfill slurry in the manhole excavation area to existing surface or to appropriate depth for pavement restoration.

Prior to starting work, submit protocol for preventing any foreign material from falling into the flow line of the sanitary sewer system. Verify no debris falls into the flow line prior to, during and completing construction of manhole. Put in place measures to clean out any foreign materials that fall into the bottom of the manholes. Any private or public sewer backups due to failure to remove foreign material from sanitary sewer system will become the sole financial and physical responsibility of the contractor.

C.2 Backfill

Backfill with granular backfill material. Place in suitable lifts not exceeding 8 inches loose depth and compact each lift to a minimum of 90 percent of maximum density as determined by AASHTO T 180. Compact with mechanical vibrating or impact tampers.

Remove all form materials and trash from the excavation before placing any backfill. Backfill around manholes only after the concrete has attained 2/3 of the specified compressive strength. Obtain the engineer's approval of concrete work and attained strength prior to backfilling. Backfill shall be brought up uniformly around manholes and structures to prevent unbalanced lateral loading.

Do not operate earth-moving equipment within 5 feet of walls of manholes for the purpose of depositing or compacting backfill materials. Compact backfill adjacent to concrete walls with hand-operated tampers or other equipment that will not damage the manhole.

C.3 Elastomeric Waterproofing Sealer

Elastomeric waterproofing sealer shall be applied to all gravity sewer manholes. Thoroughly sandblast the section of the manhole frame over which the sealer is to be applied, the manhole header, extension and cone and the top 12 inches of the manhole riser. All surfaces shall be free of dust, oil, rust, loose materials and other contaminants. Take necessary precautions to prevent rebound from the sandblasting operation to enter the sewer system. If the mortar between grade rings or brick courses is removed to a depth greater than 1/4 inch by the sandblasting, the joints shall be refilled with mortar as specified herein. All new masonry work shall be cured a minimum of 24 hours prior to applying the waterproofing sealer.

Apply the 4-inch wide bond breaker tape completely around the manhole circumference and centered over the mortar joint between the manhole frame and the manhole extension. Immediately before applying the sealer, wipe all surfaces with a cleaner and immediately prime. The cleaner and primer shall be furnished by the sealer manufacturer. Apply the sealer with a trowel, roller or by spraying to achieve a thickness of not less than 100 wet mils. Do not apply the sealer when the ambient temperature is below 40 degrees F. The sealer shall extend from 9 inches below the bottom of the manhole cone and be carried over the top and onto the flange of the frame a minimum of 5 inches.

Allow the sealer to cure a minimum of 24 hours before backfilling when the ambient temperature is above 70 degrees F, and 48 hours when the ambient temperature is below 70 degrees F. Immediately before backfilling, loosely wrap two layers of 4 mil plastic sheet over the sealed area to prevent direct contact between the sealer and the backfill material.

C.4 Manhole Seal

Seals shall cover from the frame across all rings and onto the cone.

C.5 Manhole Frames and Lids – MMSD

Milwaukee Metropolitan Sewerage District will supply new frames and lids for the reconstructed manholes. Notify Jim Romanowski at (414) 225-2241 from MMSD prior to construction at least five business days in advance to make arrangements for delivery to the work site. Salvaged existing frames and lids will become the property of MMSD and shall be stockpiled for their pickup.

D Measurement

The department will measure Reconstruct MMSD Sanitary Manhole by the vertical foot per final surface elevation difference, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0200.5000	Reconstruct MMSD Sanitary Manhole	VF

Payment is full compensation for providing and installing all required materials including barrel sections, adjusting rings, internal frame/chimney seals, joints, steps, elastomeric waterproofing sealer, plastic sheet, and masonry and fittings; for salvaging and reinstalling existing or new covers, including frames and lids; for excavating, backfilling, and compacting; for furnishing and placing backfill slurry; for disposing of surplus materials; and for cleaning out and restoring the structure.

ADDITIONAL SPECIAL PROVISION 1 (ASP 1)
FOR TRANSPORTATION ALLIANCE FOR NEW SOLUTIONS (TrANS)
PROGRAM EMPLOYMENT PLACEMENTS AND APPRENTICESHIPS

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Section 5204(e) – Surface Transportation Workforce Development Training and Education, provides for 100 percent Federal funding if the core program funds are used for training, education, or workforce development purposes, including "pipeline" activities. The core programs includes: Congestion Mitigation and Air Quality Improvement (CMAQ) Program, Highway Bridge Program (HBP), Interstate Maintenance (IM), National Highway System (NHS), and Surface Transportation Program (STP). These workforce development activities cover surface transportation workers, including OJT/SS programs for women and minorities as authorized in 23 U.S.C. §140(b).

TrANS is an employment program originally established in 1995 in Southeastern Wisconsin. Currently TrANS has expanded to include TrANS program locations to serve contractors in Southeast (Milwaukee and surrounding counties), Southcentral (Dane County and surrounding counties including Rock County), and most Northeastern Wisconsin counties from locations in Keshena, Rhinelander and surrounding far Northern areas. TrANS attempts to meet contractor's needs in other geographic locations as possible. It is an industry driven plan of services to address the outreach, preparation, placement and retention of women, minorities and non-minorities as laborers and apprentices in the highway skilled trades. These candidate preparation and contractor coordination services are provided by community based organizations. For a list of the TrANS Coordinators contact the Disadvantaged Business Enterprise Office at (414) 438-4583 in Milwaukee or (608) 266-6961 in Madison. These services are provided to you at no cost.

I. BASIC CONCEPTS

Training reimbursements to employing contractors for new placements, rehires or promotions to apprentice of TrANS Program graduates will be made as follows:

1) **On-the-Job Training, Item ASP.1T0G, ASP 1 Graduate.** At the rate of $5.00 per hour on federal aid projects when TrANS graduates are initially hired, or seasonally rehired, as unskilled laborers or the equivalent.

   Eligibility and Duration: To the employing contractor, for up to 2000 hours from the point of initial hire as a TrANS program placement.

   Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that 18 *(number)* TrANS Graduate(s) be utilized on this contract.

2) **On-the-Job Training, Item ASP.1T0A, ASP 1 Apprentice.** At the rate of $5.00 per hour on federal aid projects at the point when an employee who came out of the TrANS Program is subsequently entered into an apprenticeship contract in an underutilized skilled trade (this will include the Skilled Laborer Apprenticeship when that standard is implemented).

Eligibility and Duration: To the employing contractor, for the length of time the TrANS graduate is in apprentice status.

Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that __7___ *(number)* TrANS Apprentice(s) be utilized on this contract.

3) The maximum duration of reimbursement is two years as a TrANS graduate plus time in apprentice status.

4) If a TrANS program is not available in the contractor's area and another training program is utilized, payment of On-the-Job Training hours may be approved by the Wisconsin Department of Transportation (WisDOT) if the training program meets the established acceptance criteria. Only On-the-Job Training Hours accumulated after WisDOT approval will be reimbursed as specified under Items ASP.1T0G and ASP.1T0A. For more information, contact the Disadvantaged Business Enterprise Office at the phone numbers listed above.

5) WisDOT reserves the right to deny payments under items ASP.1T0G and ASP.1T0A if the contractor either fails to provide training or there is evidence of a lack of good faith in meeting the requirements of this training special provision.

II. RATIONALE AND SPECIAL NOTE

The $5.00 per hour now being paid for TrANS placements is intended to cover the duration of two years to allow for reaching entry-level laborer status. An additional incentive, the $5.00 rate, would promote movement into the underutilized skilled trades' apprenticeships and applies until the individual completes their apprenticeship. These incentives benefit TrANS candidates by giving them a better opportunity to enter a skilled trade; benefits contractors who will be assisted in meeting their EEO profiles and goals; and benefits the public who will see the program reinforce larger public-private employment reform in Wisconsin. The pool of TrANS graduates was created for the purpose of addressing underutilization in the skilled trades, an objective that is further reinforced by a parallel retention pilot program, known as the Companywide Reporting. *Whether or not reimbursement is involved, the WisDOT reassures contractors who are in the Companywide Program that TrANS placements still contribute toward fulfilling the new hire goal of 50% women and minorities.* Based on data administered by United States Department of Labor (US DOL), the highway skilled trades remain underutilized for women statewide (less than 6.9%); and for minorities in all counties (% varies by county).

NOTE: *Unless using other advancement strategies, contractors are encouraged to use some or all of this monetary incentive to offset the cut in hourly wages an individual may incur when entering an apprenticeship if the full general laborer hourly rate has been previously paid. No special accounting measures are required.*

III. IMPLEMENTATION

The implementation of ASP 1 is intended to cover only the amount of time it takes for underutilization to be resolved across the trades. This will be measured annually at the county and/or state levels using data administered by WisDWD in relation to goals set by the USDOL-

OFCCP. With appropriate state and federal approvals, we may also do some measurement at the company level.

It is the contractor's responsibility to note on their Certified Payrolls if their employee is a TrANS graduate or a TrANS apprentice. The District EEO Coordinators utilize the information on the Certified Payrolls to track the hours accumulated by TrANS Graduates and TrANS apprentices on WisDOT contracts. Payment under this ASP 1 is made based on the hours recorded off of the Certified Payrolls. Tracking may eventually include improved linkages with the WisDWD apprentice database, information from company and committee level sources.

TrANS is nondiscriminatory by regulation, and is a tool for optional use by contractors to address the underutilization of women and minorities as laborers and apprentices in our industry's skilled trades.

IV. *TRANS TRAINING*

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided to employees enrolled in apprenticeship and on-the-job training programs as follows:

The contractor shall provide on-the-job training aimed at developing full journey workers in the type of trade or job classifications involved. In the event the contractor subcontracts a portion of the contract work, the contractor shall determine how many, if any, of the trainees are to be trained by the subcontractor provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract.

Training and upgrading of minorities and women toward journey workers status is a primary objective of this training special provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority trainees and women trainees); to the extent such persons are available within a reasonable area of recruitment. The contractor will be given an opportunity and will be responsible for demonstrating the steps that they have taken in pursuance thereof, prior to determination as to whether the contractor is in compliance with this training special provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journey workers status or in which they have been employed as a journey worker. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the contractor's records should document the findings in each case.

V. *APPRENTICESHIP TRAINING*

The Federal Highway Administration's (FHWA) policy is to require full use of all available training and skill improvement opportunities to assure increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The FHWA On-the-Job Training (OJT) Program requires the State transportation agencies (STAs) to establish apprenticeships and training programs targeted to move women, minorities, and disadvantaged individuals into journey-level positions to ensure that a competent workforce is available to meet highway construction hiring needs, and to address the historical under-representation of members of these groups in highway construction skilled crafts.

The OJT Supportive Services (OJT/SS) Program was established in Title 23 Code of Federal Regulations (CFR), Part 230) to supplement the OJT program and support STA training programs by providing services to highway construction contractors and assistance to highway construction apprentices and trainees. The primary objectives of OJT/SS are:

(1) To increase the overall effectiveness of the State highway agencies' approved training programs.
(2) To seek other ways to increase the training opportunities for women, minorities, and disadvantaged individuals.

The STAs are responsible for establishing procedures, subject to the availability of Surface Transportation and Bridge Funds under 23 U.S.C. §140(b*)* (Nondiscrimination), for the provision of supportive services with respect to training programs approved under 23 CFR, Part 230(a*)* (Equal Employment Opportunity on Federal and Federal-aid Construction Contracts – including Supportive Services).

The contractor and subcontractor shall maintain records to demonstrate compliance with these apprenticeship requirements. Reasonable exemptions and modifications to and from any or all of these requirements will be determined by the Wisconsin Department of Transportation-Civil Rights Office. A request for an exemption or modification, with justification, shall be made in writing, addressed to WisDOT Civil Rights Office, 4802 Sheboygan Avenue, P.O. Box 7965, Rm. 451, Madison, WI 53707.

ADDITIONAL SPECIAL PROVISION 3

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM IMPLEMENTATION

Authority

Wisconsin Department of Transportation (WisDOT) is a recipient of funds from the US Department of Transportation's Federal Highway Administration. The DBE program is a federal program applicable on all contracts administered by WisDOT that include federal-aid highway funds. The authority for the DBE program is the Transportation Bill as approved by Congress periodically. DBE program guidance and requirements are outlined in the Code of Federal Regulations at 49 CFR Part 26. This contract is subject to DBE provisions because it is financed with federal-aid-highway funds. Additionally, this contract is subject to the *State of Wisconsin Standard Specifications for Highway and Structure Construction* and all applicable contract documents.

Requirements

Pursuant to the federal DBE program regulation at 49 CFR Part 26, a contractor's failure to comply with any provision of the DBE program regulatory provisions will be considered a material breach of contract. This is nonnegotiable.

If a contractor fails to carry out the DBE program requirements and/or the Required Contract Provisions for Federal Aid Contracts (FHWA 1273) referenced in this document, sanctions will be assessed depending upon the facts, reasoning, severity, and remedial efforts of the contractor that may include: termination of contract, withholding payment, assessment of monetary sanctions, and/or suspension/debarment proceedings that could result in the disqualification of the contractor from bidding for a designated period of time.

(1) The Commitment to Subcontract to DBE (Form DT1506 or digital submittal), Attachments A, and Good Faith Effort Documentation (Form DT1202) will be submitted as described in Section 2.
(2) Any change to DBE Commitments thereafter must follow modification of DBE subcontracting commitment as described in Section 9.
(3) The Department requires this list of DBE subcontractors from all bidders at time of bid to ensure the lowest possible cost to taxpayers and fairness to other bidders and subcontractors. Bid shopping is prohibited.
(4) The contractor must utilize the specific DBE firms listed in the approved DBE Commitment to perform the work and/or supply the materials for which the DBE firm is listed unless the contractor obtains written consent in advance from WisDOT. The contractor will not be entitled to payment for any work or materials on the approved DBE Commitment that is not performed or supplied by the listed DBE without WisDOT's written consent.

Description

The Wisconsin Department of Transportation is committed to the compliant administration of the DBE Program. The DBE provisions work in tandem with FHWA 1273 and WisDOT's *Standard Specifications for Highway and Structure Construction* and *Construction and Materials Manual*. The WisDOT Secretary is signatory to assurances of department-wide compliance.

The Department assigns the contract DBE goal as a percentage of work items that could be performed by certified DBE firms on the contract. The assigned DBE goal is expressed on the bid proposal as a percentage applicable to the total contract bid amount.

(1) WisDOT identifies the assigned DBE goal in its contract advertisements and posts the contract DBE goal on the cover of the bidding proposal. The contractor can meet the assigned contract DBE goal by subcontracting work to a DBE firm or by procuring services or materials from a DBE firm.

(2) Under the contract, the prime contractor should inform, advise, and develop participating DBE firms to be more knowledgeable contractors who are prepared to successfully complete their contractual agreement through the proactive provision of assistance in the following areas:
- Produce accurate and complete quotes
- Understand highway plans applicable to their work
- Understand specifications and contract requirements applicable to their work
- Understand contracting reporting requirements

(3) The Department encourages contractors to assist DBE subcontractors more formally by participating in WisDOT's Business Development program as a mentor, coach, or resource. For comprehensive information on the Disadvantaged Business Enterprise Program, visit the Department's Civil Rights and Compliance Section website at: http://wisconsindot.gov/Pages/doing-bus/civil-rights/dbe/default.aspx

1. Definitions

Interpret these terms, used throughout this additional special provision, as follows:

a. **Assigned DBE Contract Goal:** The percentage shown on the cover of the Highway Work Proposal that represents the feasible level of DBE participation for each contract. The goal is calculated using the Engineer's Estimate and DBE Interest Report. Goal assignment includes review of FHWA funds, analyzes bid items for subcontract opportunity and compatibility with DBE certified firm work codes. Additional factors considered include proximity, proportion, and regulations.

b. **Bid Shopping:** In construction law, bid shopping is the practice of divulging a subcontractor's bid to another prospective contractor(s) before or after the award of a contract to secure a lower bid.

c. **DBE:** Disadvantaged Business Enterprise – A for-profit small business concern where socially and economically disadvantaged individuals own at least a 51% interest and control management and daily business operations.

d. **DBE Commitment:** The DBE Commitment is identified in the Commitment to Subcontract to DBE (Form DT1506) and is expressed as the amount of DBE participation the prime contractor has secured. The DT1506, a contract document completed by the bidder, is required to be considered a responsive bidder on an FHWA-funded contract that has an assigned DBE goal. The prime contractor will have the option to submit the DT1506 digitally, as an entry with the bid in Bid Express, or as an attachment to the bid.

e. **DBE Utilization:** The actual participation of a DBE subcontractor on a project. WisDOT verifies DBE utilization through review of the DBE Commitment, payments to subcontractors, and contract documentation. The Prime Contractor receives DBE credit for payments made to the DBE firms performing the work listed on the approved DBE Commitment, and those submitted after approved commitment with Attachment A.

f. **Good Faith Effort:** Legal term describing a diligent and honest effort taken by a reasonable person under the same set of facts or circumstances. For DBE subcontracting, the bidder must show that it took all necessary and reasonable steps to achieve the assigned DBE goal by the scope, intensity, and appropriateness of effort that could reasonably be expected for a contractor to obtain sufficient DBE participation.

g. **Manufacturer:** A firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract.

h. **Reasonable Price:** Contractors are expected to assess reasonable price by analyzing the contract scope for DBE subcontract feasibility and comparing common line items in DBE and non-DBE subcontract quotes for the same work. Per federal regulation, reasonable price is not necessarily the lowest price.

i. **Supplier:** A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles, or equipment required under the contract are bought, kept in stock, and regularly sold or leased to the public.

j. **Tied quote:** Subcontractor quote that groups multiple bid/line items at a bundled/package price with a notation that the items within the quote will not be separated.

2. WisDOT DBE Program Compliance

a. Documentation Submittal

- The Commitment to Subcontract to DBE (Form DT1506 or digital submittal) must be submitted at the time of bid (Tuesday) by all prime contractors.
- Attachments A OR quotes from all DBEs included in the Commitment must be submitted at bid (Tuesday) **OR**
- Within one-hour following bid submittal by ALL prime contractors via eSubmit (Tuesday).
- If only DBE quotes were submitted, all remaining signed Attachments A must be submitted within 24-hours of bid closing via eSubmit (Wednesday).
- If the assigned DBE contract goal is not met, Documentation of Good Faith Effort (Form DT1202) and supporting documentation must be submitted within 24-hours of bid closing (Wednesday) via eSubmit. Instructions for eSubmit.

**Bidders have the option of submitting the DBE Commitment at the time of bid via direct entry through Bid Express OR with attachment of Form DT1506 (Commitment to Subcontract to DBE). The DBE Commitment entered with bid is the digital form of the DT1506. Separate submission of Form DT1506 is not required if the DBE Commitment is entered in Bid Express. Form DT1202, if applicable, is no longer required to be submitted at time of bid; submit DT1202 within the 24-hour supplemental time frame following bid closing.

The DBE Office will not certify Good Faith Effort and the Bureau of Project Development will consider the bid nonresponsive if the contractor fails to furnish the DBE Commitment (digitally entered into the bid OR Form DT1506 as an attachment), Attachments A, and Form DT1202 if applicable, as required. See sample forms in the Appendix.

b. Verification of DBE Commitment

The documentation related to DBE subcontract commitment submitted prior to contract award is evaluated as follows:

(1) DBE Goal Met

If the bidder indicates that the contract DBE goal is met, the Department will evaluate the DBE Commitment submitted with bid OR Form DT1506, and Attachments A to verify the actual DBE percentage calculation. If the DBE Commitment is verified, the contract is eligible for award with respect to the DBE Commitment.

(2) DBE Goal Not Met

a) If the bidder indicates a bid percentage on the DBE Commitment that does not meet the assigned DBE contract goal, the bidder must request alternative evaluation of good faith effort through

submission of Form DT1202 (Documentation of Good Faith Effort) within 24-hours of bid including narrative description. Supplementary documentation of good faith effort that supports the DT1202 submission is also due within 24-hours of bid submission and prior to bid posting. The Department will review the bidder's DBE Commitment and evaluate the bidder's good faith efforts submission.

b) Following evaluation of the bidder's Good Faith Effort documentation the bidder will be notified that the Department intends to:
   1. *Approve* the request (adequate documentation of GFE has been submitted) - no conditions placed on the contract with respect to the DBE Commitment;
   2. *Deny* the request (inadequate documentation of GFE has been submitted) - the contract is viewed as non-responsive per Wisconsin Standard Specifications for Highway and Structure Construction and will not be executed.

c) If the Department denies the bidder's request, the contract is ineligible for award. The Department will provide a written explanation for denying the request to the bidder. The bidder may appeal the Department's denial (see Section 4).

Supplemental good faith effort documentation must be submitted through eSubmit.

3. Department's Criteria for Good Faith Effort Documentation

The Federal-aid Construction Contract Provision, referenced as FHWA-1273, explicitly states that the prime contractor shall be responsible for all work performed on the contract by piecework, station work, or subcontract. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of the contract including assurances of equal employment opportunity laws, DBE regulations, and affirmative action. Compliance encompasses responsible and responsive action, documentation, and good faith effort.

Contractually, all contractors, subcontractors, and service providers on the contract are bound by FHWA 1273 and DBE program provisions. **Prime contractors should encourage subcontractors to utilize DBE firms whenever possible to contribute to the assigned DBE contract goal.**

Bidders are required to document good faith effort. Per 49 CFR Part 26.53, good faith effort is demonstrated in one of two ways. The bidder:

(1) Documents that it has obtained enough DBE participation to meet the goal; OR

(2) Documents that it made adequate good faith efforts to meet the goal, even though it did not succeed

Appendix A of 49 CFR Part 26 provides guidance concerning good faith efforts. WisDOT evaluates good faith effort on a contract basis just as each contract award is evaluated individually.

The efforts employed by the bidder should be those that WisDOT can reasonably expect a bidder to take to actively and aggressively obtain DBE participation sufficient to meet the DBE contract goal. The Department will only approve demonstration of good faith effort if the bidder documents the quality, quantity, and intensity of the variety of activities undertaken that are commensurate with expected efforts to meet the stated goal.

The Department, in conjunction with industry stakeholders, has developed the following guidance for contractor good faith effort activity. The guidance and the attached appendices provide a framework for the actions required by all parties in the processing and evaluation of bidder's total efforts to achieve the project specific DBE goal prior to the bid letting date.

a. Solicitation Guidance for Prime Contractors:

(1) Document all efforts and decisions made toward achieving the DBE goal on the contract. The bidder should use WisDOT-approved DBE outreach tools, including the UCP DBE Directory and the Bid Express Small Business Network to foster DBE participation on all applicable contracts.

(2) As needed, request assistance with DBE outreach and follow-up by contacting the Department's DBE Support Services Office by phone or email request at least 14 days prior to the bid letting date. Phone numbers are (414) 438-4584 and/or (608) 267-3849; Fax: (414) 438-5392; E-mail: DBE_Alert@dot.wi.gov

(3) Participate in and document a substantive conversation with at least one DBE firm per Let, to discuss questions, concerns, and any other contract related matters that may be applicable to the DBE firm. Guidelines for this conversation are provided in Appendix A of ASP-3.

(4) Request quotes by identifying potential items to subcontract and solicit. In their initial contacts, contractors are strongly encouraged to include a single page, detailed list of items for which they are accepting quotes, by project, within a letting. *See attached sample entitled "Sample Contractor Solicitation Letter" in* Appendix B. Prime contractors should also indicate a willingness to accept quotes in areas they are planning to perform themselves, as required by federal rules. In some cases, it might be appropriate to use DBE firms to do work in a prime contractor's area of specialization.

i. Solicit quotes from certified DBE firms who match possible items to subcontract using all reasonable and available means. Additionally, forward copies of solicitations highlighting the work areas for which quotes are being sought to DBE_Alert@dot.wi.gov

ii. Acceptable outreach tools include SBN (Small Business Network, see Appendix C): https://www.bidx.com/wi/main, postal mail, email, fax, and phone.

a. Contractors must ask DBE firms for a response in their solicitations. See *Sample Contractor Solicitation Letter,* Appendix B. This letter may be included as an attachment to the sub-quote request.

b. Solicit quotes at least 10 calendar days prior to the letting date to allow DBE firms sufficient time to respond. Prime contractors should contact DBE firms early, asking if they need help organizing their quote, assistance confirming equipment needs, or other assistance supporting their submission of a competitive quote for their services.

c. A follow up solicitation should take place within 5 calendar days of the letting date. Email and/or SBN are the preferred method for the solicitation.

iii. Upon request, provide interested DBE firms with adequate information about plans, specifications, and the requirements of the contract by letter, information session, email, phone call, and/or referral.

iv. When potential exists, the contractor should advise interested DBE firms on how to obtain bonding, line of credit, or insurance if requested.

v. Document DBE firm's interest in quoting by taking appropriate steps to follow up initial solicitation with:

a. Email to all prospective DBE firms in relevant work areas

b. Phone call log to DBE firms who express interest via written response or call

c. Fax/letter confirmation

d. Signed copy of record of subcontractor outreach effort

b. Guidance for Evaluating DBE quotes

(1) Quote evaluation practices required to evaluate DBE quotes:

i. Reasonable Price**:** Contractors are expected to assess reasonable price by analyzing the contract scope for DBE subcontract feasibility and comparing common line items in DBE and non-DBE subcontract quotes for the same work. Per federal regulation, reasonable price is not necessarily the lowest price. See 49 CFR Part 26, Appendix A. IV.D(2).

(2) Documentation submitted by the prime of the following evaluation is required to evaluate DBE quotes by contractors:

i. Evaluation of DBE firm's ability to perform "possible items to subcontract" using legitimate reasons, including but not limited to, ***a discussion*** between the prime and DBE firm regarding its capabilities prior to the bid letting. If lack of capacity is the reason for not utilizing the DBE firm's quote, the prime is required to contact the DBE by phone and email regarding their ability to perform the work indicated in the UCP directory listed as their work area by NAICS code. Only the work area indicated by the NAICS code(s) listed in the UCP directory can be counted toward DBE credit. Documentation of the conversation is required.
    a In striving to meet an assigned DBE contract goal, contractors are expected to use DBE quotes that are responsive and reasonable. This includes DBE quotes that are not the low quote.
    b Additional evaluation - Evaluation of DBE quotes with <u>tied bid items</u>. Typically, this type of quoting represents a cost saving but is not clearly stated as a discount. Tied quotes are usually presented as an 'all or none' quote. When non-DBE subcontractors submit tied bid items in their quotes, the DBE firm's quote may not appear competitive. In such a case, the following steps are taken in comparing the relevant quotes. These are qualitative examples:
        i Compare bid items common to both quotes, noting the reasonableness in the price comparison.
        ii Review quotes from other firms for the bid items not quoted by the DBE firm to see if combining both can provide the same competitive advantage that the tied bid items offered.

See Appendix D – *Good Faith Effort Evaluation Measures* and Appendix E - *Good Faith Effort Best Practices.*

c. Requesting Good Faith Effort Evaluation <u>At the time of bid</u>- if the DBE goal is not met in full, the prime contractor must indicate they will file form DT1202- Documentation of Good Faith Effort within 24-hours of bid submission. Supplementary documentation of good faith effort that supports the DT1202 submission is also due within 24-hours of bid submission and prior to bid posting. Supporting documentation for the DT1202 is to include the following:

(1) Solicitation Documentation: The names, addresses, email addresses, and telephone numbers of DBE firms contacted along with the dates of both initial and follow-up contact; electronic copies of all written solicitations to DBE firms. A printed copy of SBN solicitation is acceptable.

(2) Selected Work Items Documentation: Identify economically feasible work units to be performed by DBEs to include activities such as: list of work items to be performed; breaking up of large work items into smaller tasks or quantities; flexible time frames for performance and delivery schedules.

(3) Documentation of Project Information provided to interested DBEs: A description of information provided to the DBE firms regarding the plans, specifications, and estimated quantities for portions of the work to be performed by that DBE firm.

(4) Documentation of Negotiation with Interested DBEs: Provide sufficient evidence to demonstrate that good faith negotiations took place. Merely sending out solicitations requesting bids from DBEs does not constitute sufficient good faith efforts.

(5) Documentation of Sound Reasoning for Rejecting DBEs and copies of each quote received from a DBE firm and, if rejected, copies of quotes from non-DBEs for same items.

(6) Documentation of Assistance to Interested DBEs- Bonding, Credit, Insurance, Equipment, Supplies/Materials

(7) Documentation of outreach to Minority, Women, and Community Organizations and other DBE Business Development Support: Contact organizations and agencies for assistance in contacting, recruiting, and providing support to DBE subcontractors, suppliers, manufacturers, and truckers at least 14 days before bid opening. Participate in or host activities such as networking events, mentor-protégé programs, small business development workshops, and others consistent with DBE support.

If the Good Faith Effort documentation is deemed adequate, the request will be approved and the DBE office will promptly notify the Prime Contractor and Bureau of Project Development.

If the DBE Office denies the request, the Prime Contractor will receive written correspondence outlining the reasons. The Department encourages the Prime Contractor to communicate with DBE staff to clarify any questions related to meeting goals and/or contractor demonstration of good faith efforts.

If the contract is awarded, the Prime Contractor must obtain written consent from the DBE Office to change or replace any DBE firm listed on the approved DBE Commitment. No contractor, prime or subsequent tier, shall be paid for completing work assigned to a DBE subcontractor on an approved DBE Commitment unless WisDOT has granted permission for the reduction, replacement, or termination of the assigned DBE in writing. If a prime contractor or a subcontractor on any tier uses its own forces to perform work assigned to a DBE on an approved DBE Commitment, **they will not be paid for the work**. Any changes to DBE Commitment after the approval of the DBE Commitment must be reviewed and approved by the DBE Office prior to the change (see Section 9).

Additional resources for demonstrating and tracking good faith effort can be found on the “Contracting with a DBE” webpage in the ASP-3 and Good Faith Effort Guidance section.

4. Bidder's Documentation of Good Faith Effort Evaluation Request Appeal Process

A bidder can appeal the Department's decision to deny the bidder’s demonstration of Good Faith Effort through Administrative Reconsideration. The bidder must provide a written justification refuting the specific reasons for denial as stated in the Department's denial notice. The bidder may meet in person with the Department if so requested. Failure to appeal within 5 business days after receiving the Department's written notice denying the request constitutes a forfeiture of the bidder's right of appeal. Receipt of appeal is confirmed by email date stamp or certified mail signed by WisDOT staff. A contract will not be executed without documentation that the DBE provisions have been fulfilled.

The Department will appoint a representative who did not participate in the original good faith effort determination, to assess the bidder's appeal. The Department will issue a written decision within 5 business days after the bidder presents all written and oral information. In that written decision, the Department will explain the basis for finding that the bidder did or did not demonstrate an adequate good faith effort to meet the contract DBE goal. The Department's decision is final.

5. Determining DBE Eligibility

Directory of DBE firms

a. The only resource for DBE firms certified in the State of Wisconsin is the Wisconsin Unified Certification Program (UCP) DBE Directory. WisDOT maintains a current list of certified DBE firms at: http://wisconsindot.gov/Documents/doing-bus/civil-rights/dbe/dbe-ucp-directory.xlsx

b. The DBE Program office is available to assist with contracting DBE firms:(608) 267-3849.

c. DBE firms are certified based on various factors including the federal standards from the Small Business Administration that assigns a North American Industrial Classification (NAICS) Codes. DBE firms are only eligible for credit when performing work in their assigned NAICS code(s). If a DBE subcontractor performs work that is not with its assigned NAICS code, the prime contractor should contact the DBE Office to inquire about compatibility with the Business Development Program.

6. Counting DBE Participation

Assessing DBE Work

The Department will only count the DBE usage towards the contract DBE goal if the DBE firm is certified as a DBE by one of the UCP agencies. The Department only counts the value of the work a DBE actually performs towards the DBE goal. The Department assesses the DBE work as follows:

a. The Department counts work performed by the DBE firm's own resources. The Department includes the cost of materials and supplies the DBE firm obtains for the work. The Department also includes the cost of equipment the DBE firm leases for the work. The Department will not include the cost of materials, supplies, or equipment the DBE firm purchases or leases from the prime contractor or its affiliate, with the exception of non-project specific leases the DBE has in place before the work is advertised.

b. The Department counts fees and commissions the DBE subcontractor charges for providing bona fide professional, technical, consultant, or managerial services. The Department also counts fees and commissions the DBE charges for providing bonds or insurance. The Department will only count costs the program engineer deems reasonable based on experience or prevailing market rates.

c. If a DBE firm subcontracts work, the Department counts the value of the work subcontracted to a DBE subcontractor.

d. The contractor will maintain records and may be required to furnish periodic reports documenting its performance under this item.

e. It is the Prime Contractor's responsibility to determine whether the work that is committed and/or contracted to a DBE firm can be counted for DBE credit by referencing the work type and NAICS code listed for the DBE firm on the Wisconsin UCP DBE Directory.

f. It is the Prime Contractor's responsibility to assess the DBE firm's ability to perform the work for which it is committing/contracting the DBE to do. Note that the Department encourages the Prime Contractor to assist and develop DBE firms to become fully knowledgeable contractors to successfully perform on its contracts.

g. The Prime Contractor will inform the DBE office via email of all DBE subcontractors added to the project following execution of the contract. The Prime Contractor may omit submission of another form DT1506, but must submit signed Attachment A forms for additional DBE firms.

h. See Section 7 for DBE credit evaluation for Trucking and Section 8 for DBE credit evaluation for Manufacturers, Suppliers, and Brokers

Naming conventions: When emailing files, please use the following language to identify your submission- "Project #, Proposal #, Let date, Business Name, Attachment A" Email: DBE_Alert@dot.wi.gov

*Note: A sublet request is required for DBE work, regardless of subcontract tier, and also for reporting materials or supplies furnished by a DBE.

- Sublet Requests via form DT1925 or WS1925 are required for 1st Tier DBEs
- For all 2nd Tier and below notification of DBE sublet is indicated by the contractor entering them in CRCS

7. Credit Evaluation for Trucking

All bidders are expected to adhere to the Department's current trucking policy posted on the HCCI website at: http://wisconsindot.gov/Documents/doing-bus/civil-rights/dbe/trucking-utilization-policy.pdf

The prime contractor is responsible for ensuring that all subcontractors including trucking firms, receive Form FHWA 1273: https://www.fhwa.dot.gov/programadmin/contracts/1273/1273.pdf

See Section 8 for Broker credit.

8. Credit Evaluation for Manufacturers, Suppliers, Brokers

The Department will calculate the amount of DBE credit awarded to a prime using a DBE firm for the provisions of materials and supplies on a contract-by-contract basis. The Department will count the material and supplies that a DBE firm provides under the contract for DBE credit based on whether the DBE firm is a manufacturer, supplier, or broker. Generally, DBE credit is determined through evaluation of the DBE owner's role, responsibility, and contribution to the transaction. Maximum DBE credit is awarded when the DBE firm manufactures materials or supplies. DBE credit decreases when the DBE firm solely supplies materials, and minimal credit is allotted when the DBE firm's role is administrative or transactional. It is the bidder's responsibility to confirm that the DBE firm is considered a supplier or a manufacturer before listing them on Commitment to Subcontract to DBE form DT1506 or DBE Commitment submitted with the bid.

a. Manufacturers

(1) A manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.

(2) If the materials or supplies are obtained from a DBE manufacturer, **100%** percent of the cost of the materials or supplies counts toward DBE goals.

b. Regular Dealers of Material and/or Supplies

(1) A regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

(2) If the materials or supplies are purchased from a DBE regular dealer, count **60%** percent of the cost of the materials or supplies toward DBE goals.

(3) At a minimum, a regular dealer must meet the following criteria to be counted for DBE credit:

i. The DBE firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.

ii. The DBE firm must both own and operate distribution equipment for the product--bulk items such as petroleum products, steel, cement, gravel, stone, or asphalt. If some of the distribution equipment is leased, the lease agreement must accompany the DBE Commitment form for evaluation of the dealer's control before the DBE office approves the DBE credit.

(4) When DBE suppliers are contracted, additional documentation must accompany the DBE Commitment and Attachment A forms. An invoice or bill-of-sale that includes names of the bidder and the DBE supplier, along with documentation of the calculations used as the basis for the purchase agreement, subcontract, or invoice. WisDOT recognizes that the amount on the Attachment A form may be more or less than the amount on the invoice per b.(1) above.

i. The bidder should respond to the following questions and include with submission of form DT1506 or the DBE Commitment entered with bid:

a. What is the product or material?

b. Is this item in the prime's inventory or was the item purchased when contract was awarded?

c. Which contract line items were referenced to develop this quote?
d. What is the amount of material or product used on the project?

(5) Supplies purchased in **bulk** from DBE firms at the beginning of the season may be credited to current contracts if submitted with appropriate documentation to the DBE office.

i. To ensure that the appropriate credit is assigned, follow the procedure below:
   a. When DBE suppliers are contracted for bulk supply or commodity purchases, an invoice or bill-of-sale that includes names of the contractor and the DBE supplier should be submitted to the DBE Office via eSubmit (preferred during letting) or the DBE_Alert email box. The supply/commodity credit may be applied during the federal fiscal year (October- September) in which the purchase was made.
   b. When the contractor intends to apply the credit to a particular project, submit a copy of the original invoice, documentation of the calculations for supplies/commodities to be used on the project, and an Attachment A. Indicate on the Attachment A:
   c. This supply/commodity is in the prime's inventory or pre-paid in case of commodities
   d. The full value of the original invoice submitted to the DBE Office, above in (1)
   e. The amount of material or product used on this project
   f. Fuel estimate listed on Attachment A will be recorded as a deduction from the full fuel purchase amount shown on the invoice

ii. DBE Office Process (Applies only to bulk purchases)
   a. Supply/Commodity commitment is received
   b. Engineer verifies amount listed on invoice and enters the full amount into spreadsheet
   c. The amount of credit applied for each project is updated on the spreadsheet until the bulk purchase is exhausted
   d. Engineer informs contractor when full amount of bulk purchase has been applied

c. Brokers, Transaction Expediters, Packagers, Manufacturers' Representatives

(1) No portion of the cost of the materials, supplies, services themselves will count for DBE credit. However, WisDOT will evaluate the fees or commissions charged when a prime purchases materials, supplies, or services from a DBE certified firm which is neither a manufacturer nor a regular dealer, namely: brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions.

(2) Brokerage fees are calculated as **10%** of the purchase amount.

(3) WisDOT may count the amount of fees or commissions charged for assistance in the procurement of the materials and supplies, fees, or transportation charges for the delivery of materials or supplies required on a job site.

(4) Evaluation of DBE credit includes review of the contract need for the item/service, the sub-contract or invoice for the item/service, and a comparison of the fees customarily allowed for similar services to determine whether they are reasonable.

9. DBE Commitment Modification Policy (Formerly "DBE Replacement Policy")

a. Issuing a Contract Change Order

Any changes or modifications to the contract once executed are considered contract modifications and as such require a change order. In addition, the DBE office must provide consent for reduction, termination, or replacement of subcontractors approved on the DBE Commitment *in advance* of the modification for the prime contractor to receive payment for work or supplies. Additions to the DBE Commitment do not require advance notification of the DBE office. (see below e. DBE Utilization beyond the approved DBE Commitment)

b. Contractor Considerations

(1) A prime contractor cannot modify the DBE Commitment through reduction in participation, termination, or replacement of a DBE subcontractor listed on the approved DBE Commitment without prior written consent from the DBE Office. This includes, but is not limited to, instances in which a prime contractor

seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.

(2) If a prime contractor reduces participation, replaces, or terminates a DBE subcontractor who has been approved for DBE credit toward its contract, the prime is required to provide documentation supporting its inability to fulfill the contractual commitment made to the Department regarding the DBE utilization.

(3) The Prime Contractor is required to demonstrate efforts to find another DBE subcontractor to perform at least the same amount of work under the contract as the DBE subcontractor that was terminated, to the extent needed to meet the assigned DBE contract goal. When additional opportunity is available by contract modifications, the Prime Contractor must utilize DBE subcontractors that were committed to equal work items, in the original contract.

(4) In circumstances when a DBE subcontractor fails to complete its work on the contract for any reason, or is terminated from a contract, the Prime Contractor must undertake efforts to maintain its commitment to the assigned DBE goal.

(5) The DBE subcontractor should communicate with the Prime Contractor regarding its schedule and capacity in the context of the contract. If the DBE firm anticipates that it cannot fulfill its subcontract, they will advise the Prime Contractor and suggest a DBE subcontractor that may replace their services and provide written consent to be released from its subcontract.

i. Before the Prime Contractor can request modification to the approved DBE Commitment, the Prime Contractor must:

a. Make every effort to fulfill the DBE Commitment by working with the listed DBE subcontractor to ensure that the firm is fully knowledgeable of the Prime Contractor's expectations for successful performance on the contract. Document these efforts in writing.

b. If those efforts fail, provide written notice to the DBE subcontractor of the Prime Contractor's intent to request to modify the Commitment through reduction in participation, termination, and/or replacement of the subcontractor including the reason(s) for pursuing this action.

c. Copy the DBE Office on all correspondence related to changing a DBE subcontractor who has been approved for DBE credit on a contract, including preparation and coordination efforts.

d. Clearly state the amount of time the DBE firm has to remedy and/or respond to the notice of intent to replace/terminate. The DBE must be allowed five days from the date notice was received as indicated by email time stamp or signed certified mail, to respond, in writing. EXCEPTION: The Prime Contractor must provide a verifiable reason for a response period shorter than five days. For example, a WisDOT project engineer or project manager confirms that WisDOT has eliminated an item the DBE subcontractor was contracted for.

e. The DBE subcontractor must acknowledge the contract modification with written response to the Prime Contractor and the DBE Office. If objecting to the subcontract modification, the DBE subcontractor must outline the basis for objection to the proposed modification, providing sound reasoning for WisDOT to reject the prime's request.

c. Request to Modify DBE Subcontracting Commitment

The written request referenced above may be delivered by email or fax. The request must contain the following:

1. Project ID number
2. WisDOT Contract Project Engineer's name and contact information
3. DBE subcontractor name and work type and/or NAICS code
4. Contract's progress schedule
5. Reason(s) for requesting that the DBE subcontractor be replaced or terminated
6. Attach/include all communication with the DBE subcontractor to deploy/address/resolve work completion

Naming conventions: When emailing files, please use the following language to identify your submission- "Project #, Proposal #, Let date, Business Name, MODIFICATION" Email: DBE_Alert@dot.wi.gov + Project Engineer

WisDOT will review the request and any supporting documentation submitted to evaluate if the circumstance and the reasons constitute good cause for replacing or terminating the approved DBE subcontractor.

Good Causes to Replace a DBE subcontractor according to the federal DBE program guidelines {49 CFR part 26.53}

- The listed DBE subcontractor fails or refuses to execute a written contract
- The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor
- The listed DBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements
- The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness
- The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215, and 1,200 or applicable state law
- The prime has determined that the listed DBE subcontractor is not a responsible contractor
- The listed DBE subcontractor voluntarily withdraws from the project and provides written notice of its withdrawal
- The listed DBE subcontractor is ineligible to receive DBE credit for the type of work required
- A DBE firm owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract.

d. Evaluation and Response to the Request

WisDOT's timely response to the Prime Contractor's request for modification of the approved DBE Commitment will be provided to the prime and the WisDOT project engineer via email.

If WisDOT determines that the Prime Contractor's basis for reduction in participation, replacement, or termination of the DBE subcontractor is not consistent with the good cause guidelines, the DBE office will provide a response via email within 48-hours of receipt of request from the Prime Contractor as indicated by email time stamp. The communication will include: the requirement to utilize the committed DBE, actions to support the completion of the contractual commitment, a list of available WisDOT support services, and administrative remedies, including withholding payment to the prime, that may be invoked for failure to comply with federal DBE guidelines for DBE replacement.

The WisDOT contact for all actions related to modification of the approved DBE Commitment is the DBE Program Engineer who can be reached at DBE_Alert@dot.wi.gov or (414) 335-0413.

e. DBE Utilization beyond the approved DBE Commitment

When the prime or a subcontractor increases the scope of work for an approved DBE subcontractor or adds a DBE subcontractor who was not on the approved form DT1506 or DBE Commitment submitted with bid at any time after contract execution, this is referred to as voluntary DBE contract goal achievement. The contractor must follow these steps to ensure that the participation is accurately credited toward the DBE goal:

(1) Forward a complete, signed Attachment A form to the DBE Office. A complete Attachment A includes DBE subcontractor contact information, signatures, subcontract value, and description of the work areas to be performed by the DBE. The DBE Office will verify the DBE participation and revise the DBE Commitment based on the email/discussion and the new Attachment A.

(2) When adding to an existing DBE Commitment, submit a new Attachment A to the DBE Alert mailbox

(3) OR Submit a final Attachment A to DBE Alert during the Finals Process when Compliance receives notice of "Substantially Complete"

Naming conventions: When emailing files, please use the following language to identify your submission- "Project #, Proposal #, Let date, Business Name, New Attachment A" Email: DBE_Alert@dot.wi.gov

Special note on trucking

- DBE truckers added to the sublets in CRCS *will* be approved without DBE credit (You will see a "N" in CRCS instead of "Y")
- Prime Contractors may enter a "place holder" e.g. $1000.00, for DBE Trucking in CRCS if the full amount of trucking is unknown for sublet purposes only
- The hiring contractor may obtain the Attachment A with DBE signature included but the **Prime Contractor** must sign the Attachment A before submitting
- DBE truckers need to be added to the DBE commitment once. If the DBE trucker is on the initial commitment (DT1506/E1506) there is no requirement to submit another Attachment A for that trucker for that contract.

10. Commercially Useful Function

a. Commercially Useful Function (CUF) is evaluated after the contract has been executed, while the DBE certified firm is performing contracted work items.

b. The Department uses Form DT1011, DBE Commercially Useful Function Review and Certification to evaluate if the DBE is performing a commercially useful function. WisDOT counts expenditures of a DBE toward the DBE goal only if the DBE is performing a commercially useful function on that contract.

c. A DBE firm is performing a commercially useful function if the following conditions are met:

(1) For contract work, the DBE is responsible for executing a distinct portion of the work and is carrying out its responsibilities by actually performing, managing, and supervising that work.

(2) For materials and supplies, the DBE is responsible for negotiating price, determining quality and quantity, ordering, and paying for those materials and supplies.

d. Offsite Hauling – when DBE truck will haul between a pit and plant or location other than the construction site associated with the commitment

(1) Indicate Offsite Hauling on Attachment A

(2) Discuss offsite hauling at weekly progress meetings with Project Engineer (PE)

(3) PE conducts spot checks of pits/plants to verify DBE truck is hauling and/or verifying hauling log

(4) Prime should be prepared to submit haul tickets, plant/pit tickets, timecards, and other pertinent documentation if requested by PE or DBE Office

11. Credit Evaluation for DBE Primes

WisDOT calculates DBE credit based on the amount and type of work performed by DBE certified firms for work submitted with required documentation. If the prime contractor is a DBE certified firm, the Department will only count the work that the DBE prime performs with its own forces for DBE neutral credit. The Department will also calculate DBE credit for work performed by any other DBE certified subcontractor, DBE certified supplier, and DBE certified manufacturer on the contract in each firm's approved NAICS code/work areas that are submitted with required documentation. Crediting for manufacturers and suppliers is calculated consistent with Section 8 of this document and 49 CFR Part 26.

12. Joint Venture

A joint venture is an association of a DBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest. If a DBE performs as a participant in a joint venture, the Department will only credit the portion of the total dollar value of the contract equal to the portion of the work that the DBE performs with its own forces.

13. Mentor-Protégé

a. If a DBE performs as a participant in a mentor-protégé agreement, the Department will credit the portion of the work performed by the DBE protégé firm.

b. DBE credit is evaluated and confirmed by the DBE Office for any contracts on which the mentor-protégé team identifies itself to the DBE Office as a current participant of the Mentor-Protégé Program.
- **(1)** DBE credit may only be awarded to a non-DBE mentor firm for using its own protégé firm for less than one half of its goal on any contract; and
- **(2)** Not award DBE credit to a non-DBE mentor firm for using its own protégé firm for more than every other contract performed by the protégé firm.

c. A DBE protégé firm may be eligible for conditional NAICS code extension for training with the mentor. Request permission from the DBE Office- Certification area.

d. Refer to WisDOT's Mentor-Protégé guidelines for guidance on the number of contracts and amount of DBE credit allowed on WisDOT projects.

14. Use of Joint Checks

The use of joint checks is allowable if it is a commonly recognized business practice in the material industry. A joint check is defined as a two-party check between a DBE subcontractor, a prime contractor, and the regular dealer or materials supplier who is neither the prime nor an affiliate of the prime. Typically, the prime contractor issues one check as payor to the DBE subcontractor and to the supplier jointly (to guarantee payment to the supplier) as payment for the material/supplies used by the DBE firm in cases where the DBE subcontractor and materials have been approved for DBE credit. The DBE subcontractor gains the opportunity to establish a direct contracting relationship with the supplier to potentially facilitate a business rapport that results in a line of credit or increased partnering opportunities.

The cost of material and supplies purchased by the DBE firm is part of the value of work performed by the DBE to be counted toward the goal. To receive credit, the DBE firm must be responsible for negotiating price, determining quality and quantity, ordering the materials, and installing (where applicable) and "paying for the material itself." See 49 CFR 26.55(c)(1).

The approval to use joint checks constitutes a commitment to provide further information to WisDOT, upon request by staff. WisDOT will allow the use of joint checks when the following conditions are met:

a. The Prime Contractor must request permission to use joint checks from the DBE Office by submitting the Application to Use Joint Checks.
- **(1)** Request should be made when the DBE Commitment or the Request to Sublet is submitted; the request will not be considered if submitted after the DBE Subcontractor starts its work.
- **(2)** Approval/Permission must be granted prior to the issuance of any joint checks.

(3) The payment schedule for the supplier must be presented to the DBE office before the first check is issued.
(4) The joint check for supplies must be strictly for the cost of approved supplies.

b. The DBE subcontractor is responsible for furnishing and/or installing the material/work item and is not an 'extra participant' in the transaction. The DBE firm's role in the transaction cannot be limited solely to signing the check(s) to release payment to the material supplier. At a minimum, the DBE subcontractor's tasks should include the following:
(1) The DBE subcontractor (not the prime/payor) negotiates the quantities, price, and delivery of materials.
(2) The DBE subcontractor consents to sign/release the check to the supplier by signing the Application to Use Joint Checks after establishing the conditions and documentation of payment within the subcontract terms or in a separate written document.

c. The Prime contractor/payor acts solely as a guarantor.
(1) The Prime Contractor agrees to furnish the check used for the payment of materials/supplies under the contract.
(2) The prime contractor/payor cannot require the subcontractor to use a specific supplier or the prime contractor's negotiated unit price.

15. Payment

Costs for conforming to this Additional Special Provision (ASP) and any associated DBE requirements are incidental to the contract.

Appendix A
Substantive Conversation Guidelines

The substantive conversation is critical to all bidders' demonstration of good faith effort to meet the DBE goal prior to bid opening. Relationship building between primes and subcontractors is crucial to DBE goal attainment. Responsible bidders seek to build rapport with potential DBE subcontractors to understand capacity, areas of expertise, and assess contracting feasibility. Bidders who compete for WisDOT contracts are specialty contractors responding to a growing and changing contract environment. Just as these specialists are responsible for care of the roads, they are likewise responsible for contributing to the health of the industry. The substantive conversation drives collaboration that will build industry health and capacity. The following is intended to provide guidance for such discussions but is not an exhaustive list. Contractors are encouraged to incorporate their existing strategies for cultivating business relationships as well.

Prior to Bid Opening- this discussion should happen as early as possible (WisDOT advertisements are released 5 weeks prior to each Let)

- Determine DBE subcontractor's interest in quoting
- If response indicates inexperience with quoting- offer support/assistance to the DBE in understanding the industry including fundamentals a subcontractor needs to know, required reading and/or resources.
- Assess their interest and experience in the road construction industry by asking questions such as:
  1. Have you competed for other WisDOT contracts? Ratio of competed/to wins
  2. Have you performed on any transportation industry contracts (locally or with other states)?
  3. What the largest contract you've completed?
  4. Have you worked in the industry: apprentice, journeyman, safety, inspection etc.?
  5. Does this project fit into your schedule? Are you working on any contracts now?
  6. Have you reviewed a copy of the plans? Are you comfortable performing within the scope and quantity considerations of this contract?
  7. What region do you work in? Home base?
  8. Which line items are you considering?
  9. Have you read/are you familiar with WisDOT Standard Specifications? Construction Material Manual?
  10. Do you understand where your work fits in the project schedule, project phases?

Following Bid Opening- this discussion can happen at any time

1. After reviewing their quote, note the following in your discussion:

- Does the quote look complete? Irregular?
- Are there errors in the quote? Are items very high or very low?
- In general, does the quote look competitive?

2. Questions and Advice for the bidder to share with the potential DBE subcontractor:

- What line items would typically be in a competitive quote for a subcontractor of their specialty?
- How many employees and what is their role/experience/expertise in your firm?
- Do you have resources for labor (union member, family-based, community-resourced) and capital (banking relationship, bond agent, CPA)?
- Where have you worked: cities, states, government, commercial, residential/private sector, etc. Explain similarities or differences.
- Refer them to reliable, trusted, industry resources that can educate or connect them to relevant resources, education/certification resources, more appropriate contract opportunities.
- Discussion about prime contract and subcontract liability, critical path items, contract quantities, schedule risks, and potential profit/loss (for upcoming known projects or in general).
- Discussion of bonding, insurance, and overall business risk considerations.

APPENDIX B

Sample Contractor Solicitation Letter Page 1

(This sample is provided as a guide, not a formatting requirement)

DBE Solicitation - [Month] [Day], [Year] WisDOT Bid Letting

Attention all DBEs. [Prime Contractor] is actively seeking your quote for the [Month][Day], [Year] Bid Letting. [Prime Contractor] is considering bidding on the projects listed on page 2 as a prime contractor. Please see page 2 for instructions and the sub-contractable opportunities for each proposal.

Does [Prime Contractor] accept quotes in areas we might self-perform? Yes, we do! We support this federal rule and (if needed) we consider areas we might self-perform an opportunity to provide in the field assistance and training if we award your quote.

Where can DBEs find the plans, specifications & addenda? Please visit [Prime Contractor's] plan room [LINK] or on WisDOT's Highway Construction Contract Information HCCI website: Wisconsin Department of Transportation Highway Construction Contract Information (wisconsindot.gov). This same website can be checked for the contract status.

What should your quote include? All the costs required to complete the items you propose to perform including labor, equipment, material, and related bonding or insurance. The quote should also note items that you are DBE certified to perform, tied items, and any special terms. Please use page 2 as your cover sheet for your quote.

Do you have a question regarding bonding, credit, insurance, equipment, or supplies/materials? We welcome all DBE questions! Please call [Prime Contractor] and ask to speak with [Contact]. [Prime Contractor] can provide basic information as well as a referral to a trusted industry partner for insurance and bonding needs.

When are quotes due?

[Month] [Day], [Year] at [Time]. We accept quotes via SBN, email, or fax. Please make every effort to have your quotes in by this time or earlier. Quality check your quote so it includes the correct letting date, project ID, proposal number, unit price and extension.

Who can DBEs contact for questions, information, clarification or for a quote evaluation? [Project Manager Name] [Phone] [Email]. If you are quoting [Prime Contractor] for the first time, we encourage you to come meet with us in person to discuss the project. Our office hours are 7:30 a.m. – 5:00 p.m. On bid day, we are in the office by 6:30 a.m.

Why partner with [Prime Contractor]?

DBE partnership is a core part of [Prime Contractor's] mission. Including DBEs at the beginning of each project is essential in the success of each project. We consider DBEs to be important industry partners who bring dedication and knowledge at various stages during construction. We are proud to be an industry leader with our DBE partnership. Your success as a DBE is our success.

Sample Contractor Solicitation Letter Page 2

(This sample is provided as a guide, not a formatting requirement)

REQUEST FOR QUOTE

[Prime Contractor]
Letting Date: [Month] [Day], [Year]
Project IDs: 1234-56-00 (Proposal #1) & 1234-01-78 (Proposal #6)

Please check all that apply:
____Yes, we will be quoting the projects & items listed below
____ No, we are not interested in quoting on the letting or its items referenced below
____ Please take our name off your monthly DBE contact list
____ We have questions about quoting this letting. Please have someone contact me at this number:

Prime Contractor Contact:_____ DBE:_____
Phone:_____ Fax:_____
Email:_____

Please circle the proposals and items you will be quoting below and contact us with any questions

Proposal **County**	**1** **Dane County**	**6** **Crawford County**
Clearing & Grubbing	**X**	**X**
Dump Truck Hauling	**X**	**X**
Curb/Gutter/Sidewalk	**X**	
Erosion Control Items		**X**
Excavation	**X**	**X**
Pavement Marking		**X**
Traffic Control	**X**	
Sawing	**X**	**X**
QMP, Base		**X**
Pipe Underdrain	**X**	
Landscape		**X**
Beam Guard	**X**	
Electrical	**X**	
Signs/Posts/Markers		**X**
Survey/Staking		**X**

Again, please make every effort to have your quotes into our office by time deadline prior to the letting date.

Sample Contractor Solicitation Email - Simplified

(This sample is provided as a guide, not a formatting requirement)

ATTENTION DBEs

- **[Prime Contractor] specializes in municipal projects in the XX Region(s)**
- **We have successfully competed for *and* completed XX WisDOT projects over the past XX years**
- **Consider [Prime Contractor] your partner on WisDOT Projects**

[Prime Contractor] is seeking *your* subcontractor quote for the XX/XX/20XX WisDOT bid letting on the below projects:

Project	Proposal	County	Region
1234-56-00	**2**	**Dane**	**SW**
1234-01-78	**6**	**Crawford**	**SW**

- Please review the attachments **[attach Solicitation Letter]** and respond with your intent to quote (or not) along with the work items you are interested in performing and respond via fax or email by ***date***. The quote should note items that you are DBE certified to perform, tied items, and any special terms. Please include labor, equipment, material, and related bonding or insurance.

- If you have any questions regarding bonding, credit, insurance, equipment and/or materials/supplies, please feel free to call [Prime Contractor] and ask for [Contact]. **(Include if your company is willing to answer these types of DBE questions)**

- Plans and Specifications can be found: **WisDOT HCCI Website: List webpage where plans are located**

- If you do choose to quote, please make every effort to have your quote into our office by ***time and date.*** Make sure the correct letting date, project number, unit price and extension are included in your quote.

- Should you have questions regarding the mentioned project, please call our office at (414) 555-5555 and we will direct you to the correct estimator/project manager.
  Our office hours are 7:30 a.m. - 5:00 p.m.

Thank you – we look forward to working with your company on this project!

Prime Contractor
Project Manager
Direct: 414-555-5555
Cell: 414-555-5556

Sample Contractor Solicitation Email to non-DBE WisDOT Subcontractors - Simplified

(This sample is provided as a guide, not a formatting requirement)

ATTENTION WisDOT SUBCONTRACTORS

[Prime Contractor] is considering bidding on the below projects for the XX/XX/20XX WisDOT Bid Letting:

Project	Proposal	County	Region	DBE Goal
1234-56-00	2	Dodge	SW	6.00%
1234-01-78	11	Adams	NC	3.00%
1234-00-99	20	Buffalo	NW	5.00%
1234-00-98	33	Portage	NC	6.00%

The above projects have DBE goals and [Prime Contractor] is committed to DBE inclusion with every project. As such, we are requesting:

- All WisDOT Subcontractors to **solicit and utilize** DBEs in your quotes.
- DBE participation can be achieved through purchasing materials from DBE suppliers, using DBE subcontractors and/or DBE trucking firms or any combination of these.
- If there is an opportunity to untie an item in your quote so a DBE can be utilized, please look for those opportunities as well.
- Your quote will be evaluated based on the amount of DBE participation your company is able to provide when compared to other quotes for the same work.

If you do choose to quote, please make every effort to have your quote into our office by **time and date.** Please submit all quotes to [Email]. Make sure the correct letting date, project number, unit price and extension are included in your quote.

Should you have questions regarding the mentioned project, the Project Manager contact is: [Name] [Phone Number] [Email]

Thank you for utilizing DBEs who are trusted industry partners with WisDOT projects.

Prime Contractor
Project Manager
Direct: 414-555-5555
Cell: 414-555-5556

Appendix C
Small Business Network (SBN) Overview

The Small Business Network is a part of the Bid Express® service that was created to ensure that prime bidders have a centralized online location to find subs - including small and disadvantaged business enterprises (DBEs). It is available for prime bidders to use as part of their Basic Service subscription. Within the Small Business Network, **Prime Contractors** can:

1. Easily select proposals, work types and items:
    a. After adding applicable work types, select items that you wish to quote. Enter the sub-quote quantities and add comments, if desired. Adding or removing items and work types can be done quickly. If needed, you can save the sub-quote for later completion.
2. Create sub-quotes for the subcontracting community:
    a. Create sub-quotes with ease using the intuitive sub-quote creator. In seven short steps, you can rapidly create a custom sub-quote directed to all subcontractors that bid on the applicable work types. Steps include: provide contact information and sub-quote expiration date, select letting and proposal, add work types and items, specify terms and conditions, upload attachments, and select vendors.
    b. Create a sub-quote to send to subcontractors or suppliers that lists the items in a proposal that you want quoted
    c. Create an unlimited number of sub-quotes for items you want quoted, and optionally mark them as a DBE preferred request.
    d. Add attachments to sub-quotes.
3. View sub-quote requests & responses:
    a. After logging into the Bid Express service, you can quickly review all of your sub-quote requests and all unsolicited sub-quote requests from subcontractors. To simplify the Small Business Network home screen, sub-quote requests can be hidden with one click if they are not applicable.
    b. View or receive unsolicited sub-quotes that subcontractors have posted, complete with terms, conditions and pricing.
4. View Record of Subcontractor Outreach Effort:
    a. For each sub-quote produced, a *Record of Subcontractor Outreach Effort* is generated that shows the response statistics for a particular sub-quote. If accepted by the letting agency, this report may serve as proof of a “Good Faith” effort in reaching out to the DBE community.
    b. Easily locate pre-qualified and certified small and disadvantaged businesses.
    c. Advertise to small and disadvantaged businesses more efficiently and cost effectively.
    d. Document your interactions with subs/DBEs by producing an Outreach Report (may be accepted as proof of DBE outreach at the discretion of each agency).

The Small Business Network help small businesses learn more about opportunities, compete more effectively, network with other contractors and subcontractors, and win more jobs. The DBE will provide free SBN accounts to DBEs when requested. Use DBE_Alert@dot.wi.gov to request an account. **DBE firms can:**

1. View and reply to sub-quote requests from primes:
    a. After logging into the Bid Express service, you can quickly review all incoming sub-quote requests and all unsolicited sub-quotes created by your company. Receive notifications by selected work type. To simplify on the Small Business Network home screen, sub-quote requests can be filtered by work types relevant to your interests or hidden with one click if they are not applicable.
2. Select items when responding to sub-quote requests from primes:
    a. You have the freedom to choose and price any number of items when responding to a sub-quote request. Quantities can be modified, and per-item comments are also available.
    b. View requests for sub-quotes for work that primes have posted for projects they are bidding, add your pricing, terms, and conditions, and submit completed sub-quotes to the requesting primes. c. Add attachments to a sub-quote.
3. Create and send unsolicited sub-quotes to specific contractors:
    a. Create unsolicited sub-quotes with ease using the intuitive sub-quote creator. In eight short steps, you can rapidly create a custom sub-quote directed at any number of specific vendors of your choosing. Steps include: provide contact information and sub-quote expiration date, select letting and proposal, add work types and items, specify terms and conditions, upload attachments, and select vendors.
4. Easily select and price items for unsolicited sub-quotes:
    a. After adding applicable work types, select items that you wish to quote. The extended price calculates automatically, cutting out costly calculation errors. Comments can be provided on a per-item basis as well.
    b. Create an unsolicited sub-quote that lists the items from a proposal that you want to quote, include pricing, terms and conditions, and send it to selected prime/plan holder.
    c. Add attachments to a sub-quote.
    d. Add unsolicited work items to sub-quotes that you are responding to.
5. Easy Access to Valuable Information
    a. Receive a confirmation that your sub-quote was opened by a prime.
    b. View Bid Tab Analysis data from past bids, including the high, average and low prices of items.
    c. View important notices and publications from DOT targeted to small and disadvantaged businesses.
6. Accessing Small Business Network for WisDOT contracting opportunities
    a. If you are a contractor not yet subscribing to the Bid Express service, go to **www.bidx.com** and select “Order Bid Express.” The Small Business Network is a part of the Bid Express Basic Service.

APPENDIX D

Good Faith Effort Evaluation Measures *by categories referenced in DBE regulations*

Bidders must demonstrate that they took all necessary and reasonable steps to achieve the assigned DBE contract goal. For each contract, all bidders must submit documentation indicating the goal has been met or if falling short of meeting the assigned goal, must request a DBE Goal Waiver and document all efforts employed to secure DBE subcontractor participation on Form DT1202.

DBE staff analyze the bidder's documented good faith efforts to determine if action taken was sufficient to meet the goal. Sufficiency is measured contract-by-contract. WisDOT evaluates active and aggressive efforts, quality, quantity, scope, intensity, and appropriateness of the bidder's efforts as a scale of the principles of Good Faith outlined in 49 CFR Part 26, Appendix A. Additional emphasis is placed on the bidder's demonstration of timely submission of documentation and communication with DBE subcontractors, and business development initiatives undertaken to support DBE firm growth.

The following is a sample of good faith effort activities that are rated according to the accompanying rubric. Contractors are encouraged to identify additional activities that align with their business type(s).

- Personal, tailored solicitation to firms that specialize in work types planned or desired for subcontracting
- Follow up to initial solicitation via email or phone
- Substantive conversation including topics such as contract liability, critical path work items, schedule risks, and potential profit/loss
- SBN utilization including posting quotes
- Review and response to DBE quotes including provision of information about plans, specifications,and requirements as applicable
- Documentation requesting subcontractors support DBE goal by solicitation and inclusion of DBE subcontractor quotes
- Responsive and timely submission of organized documentation
- Analysis of number of DBE firms who do work types that you typically subcontract
- Analysis of number of DBE firms who reside in geographical areas where prime seeks work
- Analysis of firms who express interest in bidding/quoting including the number of firms who declined your solicitation
- Reference check of DBE subcontractor work or training (documentation of questions and response required)
- Number of different efforts undertaken to meet the assigned DBE goal as documented in accompanying Form DT1202
- Submission of all DBE quotes received matched with a variety of work to be performed by DBEs
- Number and names of DBE firms provided written advice, or referral to industry-specific business development resources
- Overall pattern of DBE utilization on all WisDOT contracts which may include contracting with municipalities
- Documentation of resources expended to meet assigned DBE goal (#of hours, staff titles, average pay rate, actions taken)
- Analysis of subcontractable work items to be completed by prime beyond prime contractor's 30%
- Risk analysis of work items that are typically in tied quotes that could be unbundled
- List of contract work items in smallest economically feasible units, identifying schedule impact
- Submission of a Gap Analysis identifying DBE skillset and/or industry needs
- Staff training in EEO and Civil Rights laws as documented in training logs
- Written Capacity Assessment completed with DBE firm documenting its ability to perform the work quoted
- DBE engagement efforts beyond simple solicitation that include a substantive discussion, initiated as early in the acquisition process as possible (*points added for each day prior to letting*)
- Outreach and marketing efforts with minority, women, and veteran-focused organizations at least 10 days prior to bid opening
- Active involvement in WisDOT's Business Development Program, TrANS training, facilitated networking efforts, workshops
- Customized teaching/training efforts for future opportunities with DBE subcontractor, contract specific and/or annually
- Introduction and reference provided for DBE subcontractor to a prime who has not previously contracted with the DBE firm
- Prime utilization of a DBE subcontractor the prime has not contracted with previously
- Written referral/recommendation to bond/insurance agents, manufacturer, supplier
- Documented efforts fostering DBE participation through administrative and/or technical assistance
- Evidence of negotiation with the DBE firm about current and future Let opportunities
- Recommendation of local and state services that support small business and access to opportunity: DOA, SBA, WEDC, WPI, etc.
- Advice on bonding, lines of credit, or insurance as required to complete the items quoted and contract requirements

GFE EVALUATION RUBRIC – PHASE 1 – Initial Review

DT1202	Examples	Rating	OBOEC Feedback
Solicitation Documentation	Identify all reasonable and available activities performed to solicit the interest of all certified DBEs who have capacity and ability to perform work on the project. *Such as: Updated solicitation letter and email, timely solicitation, and follow-up, and/or utilized various methods to communicate solicitation (ex: letter, email, publication, posting and/or website)*		
Selected Work Items Documentation	All work items are broken out into economically feasible units to facilitate DBE participation. *Such as: Selected work items are specific to each proposal and clearly identified in all solicitation(s)*		
Documentation of Project Information provided to Interested DBEs	Provide interested DBEs with adequate information about the plans, specifications, and any other contractual requirements in a timely manner to assist DBEs in response to solicitation. *Such as: Project information is clearly identified in all solicitation(s)*		
Documentation of Negotiation with Interested DBEs	Provide sufficient evidence demonstrating that good faith negotiations took place during the bid letting. *Such as: Documented attempts with DBEs or on behalf of DBEs to increase DBE participation*		
Documentation of Sound Reason for Rejecting DBEs	Provide sufficient evidence demonstrating that DBEs are rejected for sound reasons. *Such as: Detailed and thoughtful analysis that considers both the percentage and dollar difference when rejecting a DBE including past performance, relevant business experience and stability, safety record, business ethic and integrity, technical capacity, and other tangible factors.*		
Documentation of Assistance to Interested DBEs- bonding, credit, insurance, equipment, supplies/materials	Documented assistance in both solicitation(s) and outreach to DBEs.		
Documentation of Outreach to Minority, Women, and Community organizations and other DBE Business Development Support	Effectively use the services of minority, women, and community organizations as well as contractors' groups, local, state, and federal business assistance offices and organization that provide assistance in recruiting and supporting DBEs, as well participation in activities that support DBE business development. *Such as: Variety of activities that translate into meaningful DBE participation*		
Documentation of other GFE activities	*Such as: Used DT1202 Excel Workbook, Diversity & Inclusion company policy, Mentor-Protégé participant, awarded neutral DBE after bid submission, included company GFE overview/strategy information and/or company website highlights DBE opportunities and participation*		
Overall Demonstration of GFE			

GFE EVALUATION RATING LEGEND – PHASE 1 – Initial Review

Documentation provided by bidder is evaluated and rated on the rubric. Bidders should include activities characterized by the following types of effort:

ACTIVE & AGGRESSIVE: Demonstrated through engaged and assertive activity
QUALITY: Demonstrated through essential character of conscientious and serious activity
QUANTITY: Demonstrated through a measurable number of activities
SCOPE & INTENSITY: Demonstrated through a rigorous approach to an appropriate and purposeful range of activities
TIMING: Demonstrated through engagement efforts beyond simple solicitation, initiated early in the process

GFE EVALUATION – PHASE 2 – Team Review

GFE Team completes:

- Review of activities included on the rubric
- Review of the intent to award and sound reasoning submitted by Prime
- Bid analysis to confirm if any bid submitted met the DBE goal
- Review average of other bidders DBE goal achievement
- Team review of combined efforts documented in Phase 1 and 2 constitute final GFE determination

Rating Scale:

- **GFE Approval:**
  Bona Fide = 6 or more categories color coded green.
  Genuine effort characterized by sincere and earnest activities – "Solicitation" and "Sound Reasoning" must be green

- **GFE Approval:**
  Sufficient = 5 or more categories color coded green or yellow
  Adequate effort documented with a variety of quality activities – "Solicitation" and "Sound Reasoning" must be green or yellow

- **GFE Denial:**
  Pro Forma efforts = 4 or less categories color coded green or yellow. Perfunctory effort characterized by routine or superficial activities

Green = Exceeds expectations
Yellow = Meets expectations
Red = Areas in need of attention and/or absence of documentation **See OBOEC Rubric Analysis_Feedback**

Excerpt from Appendix A to 49 CFR Part 26:
V. In determining whether a bidder has made good faith efforts, it is essential to scrutinize its documented efforts. At a minimum, you must review the performance of other bidders in meeting the contract goal. For example, when the apparent successful bidder fails to meet the contract goal, but others meet it, you may reasonably raise the question of whether, with additional efforts, the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the goal but meets or exceeds the average DBE participation obtained by other bidders, you may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made good faith efforts. As provided in §26.53(b)(2)((vi), you must also require the contractor to submit copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract to review whether DBE prices were substantially higher; and contact the DBEs listed

GFE RUBRIC ANALYSIS	
OBOEC DECISION	APPROVAL OR DENIAL
Prime Contractor	
Proposal	
Project	
Bid Letting	
DBE Goal Amount	
DBE Goal Amount Achieved	
Bid Analysis	
Goal %	Achieved %
Apparent Low Bidder	%
Bidder B	
Bidder C	
Average of OTHER Bidders (Not including Apparent Low Bidder)	
DBE Quotes Received	
DBE Quotes Awarded	
DBE Quote(s) Rejected	**Rejected Quote Analysis**
DBE Quote(s) Awarded	**Awarded DBE Amount**

APPENDIX E
Good Faith Effort Best Practices

This list is not a set of requirements; it is a list of potential strategies

Primes

- Prime contractor open houses inviting DBE firms to see the bid "war room" or providing technical assistance.
- Participate in speed networking and mosaic exercises as arranged by DBE office.
- Host information sessions not directly associated with a bid letting.
- Participate in a formal mentor protégé or joint venture with a DBE firm.
- Participate in WisDOT advisory committees i.e. TRANSAC, or Mega Project committee meetings.
- Facilitate a small group DBE 'training session' clarifying how your firm prepares for bid letting, evaluates subcontractors, preferred qualifications, and communication methods.
- Encourage subcontractors to solicit and highlight DBE participation in their quotes to you.
- Quality of communication, not quantity creates the best results. Contractors should be thorough in communicating with DBE firms before the bid and provide any assistance requested to assure best possible bid.

DBE

- DBE firms should contact primes as soon as possible with questions regarding their quotes or bid; seven days prior is optimal.
- Continually check for contract addendums on the HCCI website through the Thursday prior to letting to stay abreast of changes.
- Review the status of contracts on the HCCI website reviewing the 'apparent low bidder' list and bid tabs at a minimum.
- Prepare a portfolio or list of related projects and prime and supplier references; be sure to note transportation related projects of similar size and scope, firm expertise and staffing.
- Participate in DBE office assessment programs.
- Participate on advisory and mega-project committees.
- Sign up to receive the DBE Contracting Update.
- Consider membership in relevant industry or contractor organizations.
- Active participation is a must. Quote as many projects as you can reasonably work on; quoting the primes and bidding as a prime with the Department are the only ways to get work.

APPENDIX F
Good Faith Effort Evaluation Guidance
Appendix A of 49 CFR Part 26

I. When, as a recipient, you establish a contract goal on a DOT-assisted contract for procuring construction, equipment, services, or any other purpose, a bidder must, in order to be responsible and/or responsive, make sufficient good faith efforts to meet the goal. The bidder can meet this requirement in either of two ways. First, the bidder can meet the goal, documenting commitments for participation by DBE firms sufficient for this purpose. Second, even if it doesn't meet the goal, the bidder can document adequate good faith efforts. This means that the bidder must show that it took all necessary and reasonable steps to achieve a DBE goal or other requirement of this part which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not fully successful.

II. In any situation in which you have established a contract goal, Part 26 requires you to use the good faith efforts mechanism of this part. As a recipient, you have the responsibility to make a fair and reasonable judgment whether a bidder that did not meet the goal made adequate good faith efforts. It is important for you to consider the quality, quantity, and intensity of the different kinds of efforts that the bidder has made, based on the regulations and the guidance in this Appendix.

The efforts employed by the bidder should be those that one could reasonably expect a bidder to take if the bidder were actively and aggressively trying to obtain DBE participation sufficient to meet the DBE contract goal. Mere pro forma efforts are not good faith efforts to meet the DBE contract requirements. We emphasize, however, that your determination concerning the sufficiency of the firm's good faith efforts is a judgment call. Determinations should not be made using quantitative formulas.

III. The Department also strongly cautions you against requiring that a bidder meet a contract goal (i.e., obtain a specified amount of DBE participation) in order to be awarded a contract, even though the bidder makes an adequate good faith efforts showing. This rule specifically prohibits you from ignoring bona fide good faith efforts.

IV. The following is a list of types of actions which you should consider as part of the bidder's good faith efforts to obtain DBE participation. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

A. (1) Conducing market research to identify small business contractors and suppliers and soliciting through all reasonable and available means the interest of all certified DBEs that have the capability to perform the work of the contract. This may include attendance at pre-bid and business matchmaking meetings and events, advertising and/or written notices, posting of Notices of Sources Sought and/or Requests for Proposals, written notices or emails to all DBEs listed in the State's directory of transportation firms that specialize in the areas of work desired (as noted in the DBE directory) and which are located in the area or surrounding areas of the project.

(2) The bidder should solicit this interest as early in the acquisition process as practicable to allow the DBEs to respond to the solicitation and submit a timely offer for the subcontract. The bidder should determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.

B. Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units (for example, smaller tasks or quantities) to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces. This may include, where possible, establishing flexible timeframes for performance and delivery schedules in a manner that encourages and facilitates DBE participation.

C. Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation with their offer for the subcontract.

D. (1) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional Agreements could not be reached for DBEs to perform the work.

(2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

E. (1) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal. Another practice considered an insufficient good faith effort is the rejection of the DBE because its quotation for the work was not the lowest received. However, nothing in this paragraph shall be construed to require the bidder or prime contractor to accept unreasonable quotes in order to satisfy contract goals.

(2) A prime contractor's inability to find a replacement DBE at the original price is not alone sufficient to support a finding that good faith efforts have been made to replace the original DBE. The fact that the contractor has the ability and/or desire to perform the contract work with its own forces does not relieve the contractor of the obligation to make good faith efforts to find a replacement DBE, and it is not a sound basis for rejecting a prospective replacement DBE's reasonable quote.

F. Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

G. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

H. Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, State, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

V. In determining whether a bidder has made good faith efforts, it is essential to scrutinize its documented efforts. At a minimum, you must review the performance of other bidders in meeting the contract goal. For example, when the apparent successful bidder fails to meet the contract goal, but others meet it, you may reasonably raise the question of whether, with additional efforts, the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the goal, but meets or exceeds the average DBE participation obtained by other bidders, you may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made good faith efforts. As provided in §26.53(b)(2)((vi), you must also require the contractor to submit copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract to review whether DBE prices were substantially higher; and contact the DBEs listed on a contractor's solicitation to inquire as to whether they were contacted by the prime. Pro forma mailings to DBEs requesting bids are not alone sufficient to satisfy good faith efforts under the rule.

VI. A promise to use DBEs after contract award is not considered to be responsive to the contract solicitation or to constitute good faith efforts.

[79 FR 59600, Oct. 2, 2014]

APPENDIX G

(SAMPLE) Forms DT1506 and DT1202

Official Form DT1506 can be found here: https://wisconsindot.gov/Documents/formdocs/dt1506.pdf

COMMITMENT TO SUBCONTRACT TO DBE

Clear

Wisconsin Department of Transportation

DT1506 12/2021 s.84.06(2) Wis. Stats. ☐ Non-Traditional Project

Project ID: _____

Proposal # _____

Prime Contractor: _____

County: _____

Letting Date: _____

Total $ Value of Prime Contract: $ _____

DBE Contract Goal: _____ %

DBE Goal Achieved: 0.00 %

This contract requires that a specified percentage of the work be subcontracted to a disadvantaged business enterprise and that this information be submitted as described in ASP-3. The submittal of this form with the bid proposal constitutes your DBE commitment. Include Attachment A for DBEs included on commitment.

This form must be completed and returned for this proposal. See page 2 for instructions.

1. DBE Firm	2. Work or Items to be subcontracted	3. Supplier Y/N	4. Trucking Only	5. DBE Full Subcontract $	6. DBE Amount for Credit $
			O# L#		
			O# L#		
			O# L#		
			O# L#		
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			O# L#		
			O# L#		
				$ 0.00	$ 0.00

Government Use Only Approved Amounts		
A =	$	%
V =	$	%
Total =	$	%

Signature:

Date:

Good faith effort approved: Yes ☐ No ☐

Prime Representative Signature & Date

DBE Office Signature & Date Approved

COMMITMENT TO SUBCONTRACT TO DBE
ATTACHMENT A

CONFIRMATION OF PARTICIPATION

Project I.D.:	Proposal Number:
Letting Date:	

Name of DBE Firm Participating in this Contract:	
Name of the Prime/Subcontractor who hired the DBE Firm: *(list all names of tiers if more than one)*	
Type of Work or Type of Material Supplied:	
Total Subcontract Value:	Total DBE Credit Value:

FOR PRIME CONTRACTORS ONLY: I certify that I made arrangements with the participating DBE firm to perform the type of work listed or supply the material indicated above for the subcontract value listed above.	Prime Contractor Representative's Signature
	Prime Contractor Representative's Name (Print Name)
	Prime Contractor (Print Company Name)
	Date

FOR PARTICIPATING DBE FIRMS ONLY: I certify that I made arrangements with the Prime Contractor or the Hiring Contractor to perform the type of work or supply the material indicated above for the subcontract value listed above.	Participating DBE Firm Representative's Signature	Date
	Participating DBE Firm Representative's Name (Print Name)	
FOR DBE TRUCKING FIRMS ONLY: I certify that I will utilize, for DBE credit, only trucks listed on my WisDOT approved Schedule of Owned/Leased Vehicles for DBE Credit form and I will be utilizing the number of trucks as listed below.	Participating DBE Firm (Print Company Name)	
	DBE Firm's Address:	

# Owned Trucks	# Leased Trucks	# DBE-Owned Leased Trucks	# Non-DBE-Owned Leased Trucks

☐ Off site Hauling

Official Form DT1506 can be found here: https://wisconsindot.gov/Documents/formdocs/dt1506.pdf

DOCUMENTATION OF GOOD FAITH EFFORT

Wisconsin Department of Transportation
DT1202 3/2020

Project ID	Proposal No.	Letting
Prime Contractor		County
Person Submitting Document		Telephone Number
Address		Email Address

All bidders must undertake necessary and reasonable steps to achieve the assigned DBE contract goal per federal regulatory guidance at 49 CFR Part 26. Bidders use this form to document all efforts employed to meet the assigned goal as a record of contractor good faith efforts (GFE). Refer to ASP3 or 49 CFR Part 26 for guidance on actions that demonstrate good faith effort.

It is critical to list all efforts, attach documentation, and follow the instructions to complete this submission. Documentation of good faith effort includes copies of each DBE and non-DBE subcontractor quote submitted to the bidder for the same line items. Utilize the sample documentation logs to document and organize efforts.

Submit good faith effort documentation per ASP-3 guidelines.

Instructions: Provide a narrative description of all activities pursued to demonstrate good faith efforts, any corresponding documentation, and applicable explanation on separate pages. Include the following items, organized in the order listed below.

1. **Solicitation Documentation:**
   - a. **Purpose:** To identify all reasonable and available activities the bidder performed to solicit the interest of all certified DBEs who have the capacity and ability to perform work on the project. All solicitation efforts should begin as early as possible to ensure DBEs have ample time to respond and ask questions.
   - b. **Action:** Identify and list all activities engaged in to solicit DBEs using all reasonable and available means such as written notice and follow-up communications; substantive conversations; pre-bid meetings; networking events; market research; advertising.
2. **Selected Work Items Documentation:**
   - a. **Purpose:** To ensure that all work items are broken out into economically feasible units to facilitate DBE participation. This must occur even when you prefer to perform the work yourself.
   - b. **Action:** Identify economically feasible work units to be performed by DBEs to include activities such as: list of work items to be performed; breaking up of large work items into smaller tasks or quantities; flexible time frames for performance and delivery schedules.
3. **Documentation of Project Information provided to Interested DBEs:**
   - a. **Purpose:** To provide interested DBEs with adequate information about the plans, specifications, and any other contractual requirements in a timely manner to assist DBEs in response to solicitation.
   - b. **Action:** Provide DBEs access to plans, specifications, and other contract requirements. Early solicitation allows ample opportunity to provide project information, links to Let advertisements, and substantive engagement with DBEs.

4. **Documentation of Negotiation with Interested DBEs:**
   a. **Purpose:** To ensure that negotiations with interested DBEs were made in good faith providing evidence as to why agreements could not be reached for DBEs to perform work.

   b. **Action:** Provide sufficient evidence to demonstrate that good faith negotiations took place. Merely sending out solicitations requesting bids from DBEs does not constitute sufficient good faith efforts. A bidder using good business judgment considers a number of factors in negotiating with all subcontractors, and the firm's price and capabilities in addition to contract goals are taken into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for failing to meet the DBE goal as long as costs are reasonable. (see 49 CFR Part 26 Appendix A)

5. **Documentation of Sound Reason for Rejecting DBEs:**
   a. **Purpose:** To ensure that bidders avoid rejecting DBEs as unqualified without sound reasons. Reasons for rejection must be based on thorough investigation of DBE capabilities.

   b. **Action:** Provide sufficient evidence to demonstrate that DBE was rejected for sound reasons such as past performance, relevant business experience and stability, safety record, business ethic and integrity, technical capacity, other tangible factors.

6. **Documentation of Assistance to Interested DBEs - Bonding, Credit, Insurance, Equipment, Supplies/Materials:**
   a. **Purpose:** To assist interested DBEs in obtaining bonds, lines of credit, insurance, equipment, supplies, materials, and other assistance or services.

   b. **Action:** Assist interested DBEs in obtaining bonding, lines of credit or insurance, and provide technical assistance or information related to plans, specifications, and project requirements. Assist DBEs in obtaining equipment, supplies, materials or other services related to meeting project requirements (excluding supplies or equipment the DBE purchases from the prime).

7. **Documentation of outreach to Minority, Women, and Community Organizations and other DBE Business Development Support:**
   a. **Purpose:** To effectively use the services of minority, women, and community organizations as well as contractors' groups, local, state, and federal business assistance offices and organization that provide assistance in recruiting and supporting DBEs, as well as participation in activities that support DBE business development.

   b. **Action:** Contact organizations and agencies for assistance in contacting, recruiting, and providing support to DBE subcontractors, suppliers, manufacturers, and truckers at least 14 days before bid opening. Participate in or host activities such as networking events, mentor-protégé programs, small business development workshops, and others consistent with DBE support.

Return to:
Wisconsin Department of Transportation
DBE Program Office
PO Box 7965
Madison, WI 53707-7965
DBE_Alert@dot.wi.gov

I certify that I have utilized comprehensive good faith efforts to solicit and utilize DBE firms to meet the DBE participation requirements of this contract proposal, as demonstrated by my responses and as specified in Additional Special Provision 3 (ASP-3).

I certify that the information given in the Documentation of Good Faith Efforts is true and correct to the best of my knowledge and belief.

I further understand that any willful falsification, fraudulent statement, or misrepresentation will result in appropriate sanctions, which may involve debarment and/or prosecution under applicable state (Trans 504) and Federal laws.

(Bidder/Authorized Representative Signature)

(Print Name)

(Title)

Good Faith Effort -- Sample Documentation Logs

The sample logs below are provided as guides rather than exhaustive list. See ASP3, Appendix A for additional examples of demonstrable good faith efforts. Attach documentation for each activity listed.

Acceptable forms of documentation include copies of solicitations sent to DBEs, notes from substantive conversations and negotiations with DBEs, copies of advertisements placed, email communications, all quotes received from DBEs and from all subcontractors who were considered alongside DBE quotes, proof of attendance at applicable networking events; flyers for events or workshops for DBEs offered by the prime, and other physical records of good faith efforts activities.

SOLICITATION LOG

Date	Activity	Name of DBE Solicited	Follow-up
4/1/2020	Sent May Let solicitation	Winterland Electric	Spoke with Mark Winterland on 4/15/20 to ask if he would quote

SELECTED WORK ITEMS SOLICITED LOG

Work Type	DBE Firm	Contact Person	Date	Contact Mode
Pavement Marking	ABC Marking	Leslie Lynch	4/1/2020	Email; phone
	#1 Marking Co.	Mark Smart	4/1/2020	Email; left VM
Electrical	Winterland Electric	Tabitha Tinker	4/3/2020	Email, left VM
	Superstar Wiring	Jose Huascar	4/3/2020	Email; phone

INFORMATION PROVIDED LOG

Request Date	DBE Firm	Information Requested & Provided	Response Date
4/1/2020	Winterland Electric	Requested info on electrical requirements; provided plan and link to specs	4/3/2020
4/21/2020	Absolute Construction	Wanted to know how and when supplies are paid for by WisDOT; referred to spec that covers stockpiling	4/21/2020

NEGOTIATIONS LOG

Date	DBE Firm	Contact Name	Work Type	Quotes Rec'd?	Considered for project?	If not selected, why?
4/12/2020	ABC Landscape	John Dean	Erosion Control	Yes	No	Cannot perform all items
4/17/2020	Wild Ferns	Sandy Lynn	Erosion Control	Yes	Yes	
4/20/2020	#1 Marking	Mark Smart	Electrical	Yes	Yes	

ASSISTANCE LOG

Date	DBE Firm	Contact Person	Assistance Provided
4/1/2020	ABC Sawing	Jackie Swiggle	Informed DBE on how to obtain bonding
4/17/2020	Supreme Construction	Winston Walters	Provided contact for wholesale supply purchase

OUTREACH & BUSINESS DEVELOPMENT LOG

Date	Agency/Organization Contacted	Contact Person	Assistance Requested
4/1/2020	Women in Construction	LaTonya Klein	Contact information for woman-owned suppliers
4/28/2020	WBIC	Sam Smith	Asked for information to provide to DBE regarding financing programs through WBIC

Official Form DT1202 can be found here: https://wisconsindot.gov/pages/global-footer/formdocs/default.aspx

ADDITIONAL SPECIAL PROVISION 4

This special provision does not limit the right of the department, prime contractor, or subcontractors at any tier to withhold payment for work not acceptably completed or work subject to an unresolved contract dispute.

Payment to First-Tier Subcontractors

Within 10 calendar days of receiving a progress payment for work completed by a subcontractor, pay the subcontractor for that work. The prime contractor may withhold payment to a subcontractor if, within 10 calendar days of receipt of that progress payment, the prime contractor provides written notification to the subcontractor and the department documenting "just cause" for withholding payment.

The prime contractor is not allowed to withhold retainage from payments due subcontractors.

Payment to Lower-Tier Subcontractors

Ensure that subcontracting agreements at all tiers provide prompt payment rights to lower-tier subcontractors that parallel those granted first-tier subcontractors in this provision.

ADDITIONAL SPECIAL PROVISIONS 5
FUEL COST ADJUSTMENT

A Description

Fuel Cost Adjustments will be applied to partial and final payments for work items categorized in Section B as a payment to the contractor or a credit to the department. ASP-5 shall not apply to any force account work.

B Categories of Work Items

The following items and Fuel Usage Factors shall be used to determine Fuel Cost Adjustments:

(1) Earthwork.		Unit	Gal. Fuel Per Unit
205.0100	Excavation Common	CY	0.23
205.0200	Excavation Rock	CY	0.39
205.0400	Excavation Marsh	CY	0.29
208.0100	Borrow	CY	0.23
208.1100	Select Borrow	CY	0.23
209.1100	Backfill Granular Grade 1	CY	0.23
209.1500	Backfill Granular Grade 1	Ton	0.115
209.2100	Backfill Granular Grade 2	CY	0.23
209.2500	Backfill Granular Grade 2	Ton	0.115
350.0102	Subbase	CY	0.28
350.0104	Subbase	Ton	0.14
350.0115	Subbase 6-Inch	SY	0.05
350.0120	Subbase 7-Inch	SY	0.05
350.0125	Subbase 8-Inch	SY	0.06
350.0130	Subbase 9-Inch	SY	0.07
350.0135	Subbase 10-Inch	SY	0.08
350.0140	Subbase 11-Inch	SY	0.09
350.0145	Subbase 12-Inch	SY	0.09

C Fuel Index

A Current Fuel Index (CFI) in dollars per gallon will be established by the Department of Transportation for each month. The CFI will be the price of No. 2 fuel oil, as reported in U.S. Oil Week, using the first issue dated that month. The CFI will be the average of prices quoted for Green Bay, Madison, Milwaukee and Minneapolis.

The base Fuel Index (BFI) for this contract is $3.90 per gallon.

D Computing the Fuel Cost Adjustment

The engineer will compute the ratio CFI/BFI each month. If the ratio falls between 0.85 and 1.15, inclusive, no fuel adjustment will be made for that month. If the ratio is less than 0.85 a credit to the department will be computed. If the ratio is greater than 1.15 additional payment to the contractor will be computed. Credit or additional payment will be computed as follows:

(1) The engineer will estimate the quantity of work done in that month under each of the contract items categorized in Section B.

(2) The engineer will compute the gallons of fuel used in that month for each of the contract items categorized in Section B by applying the unit fuel usage factors shown in Section B.

(3) The engineer will summarize the total gallons (Q) of fuel used in that month for the items categorized in Section B.

(4) The engineer will determine the Fuel Cost Adjustment credit or payment from the following formula:

$$FA = \left(\frac{CFI}{BFI} - 1\right) x\ Q\ x\ BFI$$

(plus is payment to contractor; minus is credit to the department)

Where	FA	=	Fuel Cost Adjustment (plus or minus)
	CFI	=	Current Fuel Index
	BFI	=	Base Fuel Index
	Q	=	Monthly total gallons of fuel

E Payment

A Fuel Cost Adjustment credit to the department will be deducted as a dollar amount each month from any sums due to the contractor. A Fuel Cost Adjustment payment to the contractor will be made as a dollar amount each month.

Upon completion of the work under the contract, any difference between the estimated quantities and the final quantities will be determined. An average CFI, calculated by averaging the CFI for all months that fuel cost adjustment was applied, will be applied to the quantity differences. The average CFI shall be applied in accordance with the procedure set forth in Section D.

Additional Special Provision 6
ASP 6 - Modifications to the standard specifications

Make the following revisions to the standard specifications:

415.3.16 Tolerance in Pavement Thickness

Replace the entire text with the following effective with the November 2021 letting:

415.3.16.1 General

(1) Construct the plan thickness or thicker. The department will accept pavement thickness based on the results of department-performed acceptance testing conforming to:

Magnetic Pulse Induction	CMM 870: ASTM E3209 WTM
Probing	CMM 870: WTP C-002
Preplacement Measurement	CMM 870: WTP C-003

415.3.16.2 Pavement Units

415.3.16.2.1 Basic Units

(1) Basic unit is defined as a slip formed, single lane, with a minimum lane width of 10 feet, measured, from the pavement edge to the adjacent longitudinal joint; from one longitudinal joint to the next; or between pavement edges if there is no longitudinal joint.

415.3.16.2.2 Special Units

(2) Establish special units for areas of fillets, intersections, gaps, gores, shoulders, ramps, pavement lanes less than 10 feet wide and other areas not included in basic units.

415.3.16.3 Test Plate Locations

(1) Place department-furnished test plates. Within 5 business days after paving, enter the sequential number and associated position data into MRS available at:

http://www.atwoodsystems.com/

(2) Contractor will maintain plate location markings for 10 business days after paving.

415.3.16.4 Acceptance Testing

415.3.16.4.1 Basic Units

415.3.16.4.1.2 Magnetic Pulse Induction

(1) The department will measure thickness within 10 business days of paving. Upon completion of the project thickness testing, the department will provide the test results to the contractor within 5 business days.

(2) Department will establish a project reference plate at the start of each paving stage. Project reference plate will be measured before each day of testing. Department will notify the contractor of project reference plate locations before testing.

(3) If the random plate test result falls within 80 to 50 percent pay range specified in 415.5.2, the department will measure the second plate in that unit. The department will notify the contractor immediately if the average of the 6 readings falls within the 80 to 50 percent pay range.

(4) If an individual random plate test result is more than 1 inch thinner than contract plan thickness, the pavement is unacceptable. Department will determine limits of unacceptable pavement by performing the following:

- The engineer will test each consecutive plate stationed ahead and behind until the thickness test result is plan thickness or greater.
- The engineer will direct the contractor to core the hardened concrete to determine the extent of the unacceptable area. In each direction, the contractor shall take cores at points approximately 20 feet from the furthest out of specification plate towards the plate that is plan thickness of greater. Once a core is within 80 to 100 percent pay range, the coring is complete and the limits of unacceptable pavement extend from the stationing between the core test results of 80 to 100 percent payment, inclusive of all unacceptable core and plate test results.
- The contractor shall perform coring according to AASHTO T24. The department will evaluate the results according to AASHTO T148
- The contractor shall fill core holes with concrete or mortar.

415.3.16.4.2 Special Units

415.3.16.4.2.1 Magnetic Pulse Induction

(1) The department will measure thickness within 10 business days of paving. Upon completion of the project thickness testing, the department will provide the test results to the contractor within 5 business days.

(2) Department will establish a project reference plate at the start of each paving stage. Project reference plate will be measured before each day of testing. Department will notify the contractor of project reference plate locations before testing.

(3) If the random plate test result falls within 80 to 50 percent pay range specified in 415.5.2, the department will measure the second plate in that unit. The department will notify the contractor immediately if the average of the 6 readings falls within the 80 to 50 percent pay range.

(4) If an individual random plate test result is more than 1 inch thinner than contract plan thickness, the department will measure the second plate in that unit. If both plates are required to be measured, then all six thickness measurements will be averaged for that unit. If the average of the six measurements is more than 1 inch thinner than contract plan thickness, the pavement is unacceptable.

415.3.16.4.2.2 Probing

(1) The department will measure slip form special units during concrete placement. Upon completion of the project thickness testing, the department will provide the test results to the contractor within 5 business days.

(2) Department will probe 2 random locations within the special unit. The average of the two readings will be the reported measurement for the special unit.

415.3.16.4.2.3 Preplacement Measurement

(1) The department will measure non-slip form special units before concrete placement.

(2) Thickness corrections will be made to a conforming thickness by reshaping the base aggregate before the pavement is placed.

415.5.2 Adjusting Pay for Thickness

Replace the entire text with the following effective with the November 2021 letting:

(1) The department will adjust pay for pavement thickness under the Nonconforming Thickness Concrete Pavement administrative item as follows:

FOR PAVEMENT THINNER THAN PLAN THICKNESS BY:	PERCENT OF THE CONTRACT UNIT PRICE
> 1/4 inch but <= 1/2 inch	80
> 1/2 inch but <= 3/4 inch	60
> 3/4 inch but <= 1 inch	50

(2) When pavement of unacceptable final thickness is determined, as specified in 415.3.16.4, the department will direct the contractor to either:

1. Remove and replace unacceptable concrete pavement to the nearest joint with new concrete pavement of conforming thickness. The department will pay once for the area at the full contract price.
2. If the unacceptable pavement is less than 100 LF, the department may allow the concrete to remain in place without payment for the unacceptable area.

460.2.6 Recovered Asphaltic Binders

Replace paragraph two with the following effective with the November 2021 letting:

(2) The contractor may replace virgin binder with recovered binder up to the maximum percentage allowed under 460.2.5 without further testing. When the design percent asphalt binder replaced exceeds the allowable limits in 460.2.5, the contractor must:

- Document adjustments made to the mix design in the mix design submittal.
- Submit test results that indicate the mixture's asphaltic binder meets or exceeds the upper and lower temperature grade requirements the bid item designates.
    - If only one recycled asphaltic material source is used, furnish one of the following:
        - Test results from extracted and recovered binder from the resultant mixture.
        - Blending charts that indicate the resultant mixture's high and low temperature PG as an interpolation of the percent binder replaced between the virgin binder's and the recycled asphaltic material source binder's high and low temperature PG.
    - If two or more recycled asphaltic material sources are used, furnish test results from extracted and

recovered binder from the resultant mixture.

501.2.6 Water

Retitle with the following effective with the November 2021 letting:

501.2.6 Mixing Water

501.2.6.2 Requirements

Replace paragraph two with the following effective with the November 2021 letting:

(2) Water from other sources must comply with the following:

Acidity, maximum of 0.1N NaOH to neutralize 200 mL of water; CMM 870: WTP C-001	2 mL
Alkalinity, maximum of 0.1N HCL to neutralize 200 mL of water; CMM 870: WTP C-001	15 mL
Maximum sulphate ($S0_4$); CMM 870: WTP C-001	0.05 percent
Maximum chloride; CMM 870: WTP C-001	0.10 percent
Maximum total solids; CMM 870: WTP C-001	
Organic	0.04 percent
Inorganic	0.15 percent

501.3.2.2.2 Supplementary Cementitious Material

Replace the entire text with the following effective with the May 2022 letting:

(1) Replace 15 to 30 percent by weight of the total cementitious material content with approved SCMs for class I concrete as specified in 715.

(2) Replace a maximum of 30 percent by weight of the total cementitious material content with approved SCMs for class II and class III concrete as specified in 716.

(3) Limit Class F fly ash sources not on the APL to maximum 15 percent.

(4) Minimum SCM content may be waived by the engineer.

501.3.2.4.2 Air Entrainment

Replace paragraph two with the following effective with the November 2021 letting:

(2) Test fresh concrete air content according to AASHTO T152 or AASHTO TP118 at the contract-required frequency and as the engineer directs. Test concrete placed by pumping or belting at the point of discharge from the pump line or belt.

501.3.7.1 Slump

Replace paragraph one with the following effective with the November 2021 letting:

(1) Use a 1-inch to 4-inch slump for concrete used in structures or placed in forms, except as follows:

- Do not exceed a slump of 2 inches for grade E concrete.
- Increase slump as specified in 502.3.5.3 for concrete placed underwater.
- If BTS approves a concrete mixture using a superplasticizer, the contractor may increase slump for that mixture to a maximum of 9 inches without exceeding the maximum mix water allowed for that grade.

531.5 Payment

Replace paragraph two with the following effective with the November 2021 letting:

(2) Payment for Concrete Masonry Ancillary Structures Type NS is full compensation for providing concrete for non-standard sign structure foundations; and for anchor rod assemblies. The department will pay separately for excavating and backfilling drilled shafts under the Drilling Shafts bid items.

Replace paragraph five with the following effective with the November 2021 letting:

(5) Payment for the Foundation bid items is full compensation for providing concrete foundations; for anchor rod assemblies; for reinforcing steel; and for embedded conduit and electrical components. The department will pay separately for excavating and backfilling drilled shafts under the Drilling Shafts bid items.

642.2.2.1 General

Replace paragraph one with the following effective with the November 2021 letting:

(1) Provide each field office with two rooms, separated by an interior door with a padlock. Ensure that each room has a separate exterior door and its own air conditioner. Locate the office where a quality internet connection can be achieved. Ensure quality cell phone reception is achievable inside the field office.

701.3.1 General

Replace table 701-1 with the following effective with the November 2021 letting:

TABLE 701-1 TESTING AND CERTIFICATION STANDARDS

TEST	TEST STANDARD	MINIMUM REQUIRED CERTIFICATION (any one of the certifications listed for each test)
Random Sampling	CMM 830.9.2	Transportation Materials Sampling Technician (TMS) TMS Assistant Certified Technician (ACT-TMS) Aggregate Technician I (AGGTEC-I) AGGTEC-I Assistant Certified Technician (ACT-AGG) PCC Technician I (PCCTEC-I) PCCTEC-I Assistant Certified Technician (ACT-PCC) Grading Technician I (GRADINGTEC-I) Grading Assistant Certified Technician (ACT-GRADING)
Sampling Aggregates	AASHTO T2[1] [4]	TMS, ACT-TMS, AGGTECT-1, ACT-AGG
Percent passing the No. 200 sieve	AASHTO T11[1]	AGGTEC-I, ACT-AGG
Fine & coarse aggregate gradation	AASHTO T27[1]	
Aggregate moisture content	AASHTO T255[1]	
Fractured faces	ASTM D5821[1]	
Liquid limit	AASHTO T89	Aggregate Testing for Transportation Systems (ATTS) GRADINGTEC-I, or ACT-GRADING
Plasticity index	AASHTO T90[3]	
Sampling freshly mixed concrete	AASHTO R60	PCCTEC-1 ACT-PCC
Air content of fresh concrete	AASHTO T152[2] AASHTO TP118[5]	
Air void system of fresh concrete	AASHTO TP118[5]	
Concrete slump	AASHTO T119[2]	
Concrete temperature	ASTM C1064	
Making and curing concrete specimens	AASHTO T23	
Moist curing for concrete specimens	AASHTO M201	
Concrete compressive strength	AASHTO T22	Concrete Strength Tester (CST) CST Assistant Certified Technician (ACT-CST)
Concrete flexural strength	AASHTO T97	
Concrete surface resistivity[2]	AASHTO T358	
Voids in aggregate	AASHTO T19	PCCTEC-II
Profiling	__	PROFILER

[1] As modified in CMM 860.

[2] As modified in CMM 870.

[3] A plasticity check, if required under individual QMP specifications, may be performed by an AGGTEC-I in addition to the certifications listed for liquid limit and plasticity index tests.

[4] Plant personnel may operate equipment to obtain samples under the direct observation of a TMS or higher.

[5] Consolidate by rodding.

710.2 Small Quantities

Replace the entire text with the following effective with the November 2021 letting:

(1) The department defines small quantities as follows:

- As specified in 715.1.1.2 for class I concrete.
- Less than 50 cubic yards of class II ancillary concrete placed under a single bid item.

(2) For contracts with only small quantities of material subject to testing, modify the requirements of 710 as follows:

1. The contractor may submit an abbreviated quality control plan as allowed in 701.1.2.3.
2. Provide one of the following for aggregate process control:
    - Documented previous testing dated within 120 calendar days. Provide gradation test results to the engineer before placing material.
    - Non-random start-up gradation testing.

710.4 Concrete Mixes

Replace paragraph two with the following effective with the November 2021 letting:

(2) At least 7 business days before producing concrete, document that materials conform to 501 unless the engineer allows or individual QMP specifications provide otherwise. Include the following:

1. For mixes: quantities per cubic yard expressed as SSD weights and net water, water to cementitious material ratio, air content, and SAM number.
2. For cementitious materials and admixtures: type, brand, and source.
3. For aggregates: absorption, SSD bulk specific gravity, wear, soundness, freeze thaw test results if required, and air correction factor. Also include aggregate production records dated within 2 years if using those results in the design. Submit component aggregate gradations, aggregate proportions, and target combined blended aggregate gradations using the following:
    - DT2220 for combined aggregate gradations.
    - DT2221 for optimized aggregate gradations.
4. For optimized concrete mixtures:
    - Complete the worksheets within DT2221 according to the directions.
    - Ensure the optimized aggregate gradations and the optimized mix design conform to WisDOT specifications and pass the built-in tests within DT2221.
    - Verify slip-form mixture workability according to AASHTO TP137 and conformance to specifications through required trial batching.
    - Submit the completed DT2221 to the engineer electronically. Include the trial batch test results with the mix design submittal.

Replace paragraph four with the following effective with the November 2021 letting:

(4) Prepare and submit modifications to a concrete mix to the engineer for approval 3 business days before using that modified mix. Modifications requiring the engineer's approval include changes in:

1. Source of any material. For paving and barrier mixes, a source change for fly ash of the same class does not constitute a mix design change.
2. Quantities of cementitious materials.
3. Addition or deletion of admixtures. Minor admixture dosage adjustments required to maintain air content or slump do not require engineer review or approval.

710.5.5 Strength

Replace paragraph one with the following effective with the November 2021 letting:

(1) Cast all 6" x 12" cylinders or all 6" x 6" x 21" beams in a set from the same sample. Do not cast more than one set of specimens from a single truckload of concrete. Mark each specimen to identify the lot and sublot or location on the project it represents.

710.5.6 Aggregate Testing

Retitle and replace the entire text with the following effective with the November 2021 letting:

710.5.6 Aggregate Testing During Concrete Production

710.5.6.1 General

(1) The department will accept gradation based on the results of department-performed acceptance testing.

(2) The department and contractor will obtain samples using the same method. When belt sampling, contractor personnel shall obtain samples for the department under the direct observation of the department personnel. Contractor will define sampling method in the QMP or abbreviated QMP.

710.5.6.2 Contractor Control Charts

710.5.6.2.1 General

(1) Test aggregate gradations during concrete production except as allowed for small quantities under 710.2. Required contractor testing will be performed using non-random samples.

(2) Sample aggregates from either the conveyor belt or from the working face of the stockpiles.

(3) Sample aggregates within 2 business days before placement for each mix design. Include this gradation on the control charts.

(4) Report gradation test results and provide control charts to the engineer within 1 business day of obtaining the sample. Submit results to the engineer and electronically into MRS as specified in 701.1.2.7.

(5) Conduct aggregate testing at the minimum frequency shown based on the anticipated daily cumulative plant production for each mix design. The contractor's concrete production tests can be used for the same mix design on multiple contracts.

TABLE 710-1 CONTRACTOR GRADATION TESTING FREQUENCY - CLASS I

DAILY PLANT PRODUCTION RATE FOR WisDOT WORK	MINIMUM FREQUENCY
Gradation Report Before Placement	
1000 cubic yards or less	one test per day
more than 1000 cubic yards	two tests per day

TABLE 710-2 CONTRACTOR GRADATION TESTING FREQUENCY - CLASS II

MINIMUM FREQUENCY
Gradation Report Before Placement
One test per calendar week of production

710.5.6.2.2 Optimized Aggregate Gradation Control Charts

(1) Determine the complete gradation using a washed analysis for both fine and coarse aggregates. Report results for the following:

- 1 1/2", 1", 3/4", 1/2", 3/8", #4, #8, #16, #30, #50, #100, and #200 sieves.
- Sum of volumetric percentages retained on No. 8, No. 16, and No. 30 sieves.
- Sum of volumetric percentages retained on No. 30, No. 50, No. 100, and No. 200 sieves.

(2) Calculate blended aggregate gradations using the mix design batch percentages for the component aggregates. Ensure the blended aggregate gradation conforms to the volumetric percent retained of the optimized aggregate gradation limits specified in table 501-4.

(3) Throughout the contract, construct a 4-point running average of the volumetric percent retained for each sieve to determine if the blended aggregate gradation is within the tarantula curve limits specified in table 501-4.

710.5.6.2.3 Combined Aggregate Gradation Control Charts

(1) Determine the complete gradation using a washed analysis for both fine and coarse aggregates. Report results for the 1 1/2", 1", 3/4", 1/2", 3/8", #4, #8, #16, #30, #50, #100, and #200 sieves.

(2) Calculate blended aggregate gradations using the mix design batch percentages for the component aggregates. Ensure the blended aggregate gradation conforms to the percent passing by weight requirements of the combined aggregate gradation limits specified in table 501-4.

(3) Throughout the contract, construct a 4-point running average of the percent passing by weight for each sieve to determine if the blended aggregate gradation is within the combined aggregate gradation limits specified in table 501-4.

710.5.6.3 Department Acceptance Testing

(1) Department testing frequency is based on the quantity of each mix design placed under each individual WisDOT contract.

(2) The department will split each sample, test for acceptance, and retain the remainder for a minimum of 10 calendar days.

(3) The department will obtain the sample and deliver to regional testing lab in the same day. Department will report gradation test results to the contractor within 1 business day of being delivered to the lab. Department and contractor can agree to an alternative test result reporting timeframe; alternative timeframe is required to be documented in the QMP.

(4) Additional samples may be taken at the engineer's discretion due to change in condition.

TABLE 710-3 DEPARTMENT GRADATION TESTING FREQUENCY

CONCRETE CLASSIFICATION	MINIMUM DEPARTMENT FREQUENCY
Class I: Pavement	1 test per placement day for first 5 days of placement. If all samples are passing, reduced frequency is applied.
	Reduced frequency: 1 test per calendar week of placement
Class I: Structures	1 test per 250 CY placed - Minimum of 1 test per substructure - Minimum of 1 test per superstructure
Class I: Cast-in-Place Barrier	1 test per 500 CY placed
Class II	No minimum testing

710.5.7 Corrective Action

Replace the entire text with the following effective with the November 2021 letting:

710.5.7.1 Optimized Aggregate Gradations

(1) If the contractor's 4-point running average or a department test result of the volumetric percent retained exceeds the tarantula curve limits by less than or equal to 1.0 percent on a single sieve size, do the following:

1. Notify the other party immediately.
2. Perform corrective action documented in the QC plan or as the engineer approves.
3. Document and provide corrective action results to the engineer as soon as they are available.
4. Department will conduct two tests within the next business day after corrective action is complete.
5. If blended aggregate gradations are within the tarantula curve limits by the second department test:
   - Continue with concrete production.
   - Contractor will include a break in the 4-point running average.
   - For Class I: Pavements, department will discontinue reduced frequency testing and will test at a frequency of 1 test per placement day. Once 5 consecutive samples are passing at the 1 test per placement day frequency, the reduced frequency testing will be reapplied.
6. If blended aggregate gradations are not within the tarantula curve limits by the second department test:
   - Provide a new mix design with an increased cementitious content.
   - If the mix design already has a cementitious content of 565 or more pounds per cubic yard, provide a new mix design.
   - If the contract requires optimized aggregate gradations under 501.2.7.4.2.1(2), stop concrete production and submit a new mix design.

(2) If the contractor's 4-point running average or a department test result of the volumetric percent retained exceeds the tarantula curve limits by more than 1.0 percent on one or more sieves, stop concrete production and submit a new mix design.

(3) Department and contractor will sample and test aggregate of the new mix design at the frequency defined in 710.5.6.1.

710.5.7.2 Combined Aggregate Gradations

(1) If the contractor's 4-point running average or a department test result of the percent passing by weight exceeds the combined aggregate gradation limits by less than or equal to 1.0 percent on a single sieve size, do the following:

1. Notify the other party immediately.
2. Perform corrective action documented in the QC plan or as the engineer approves.
3. Document and provide corrective action results to the engineer as soon as they are available.
4. Department will conduct two tests within the next business day after corrective action is complete.
5. If blended aggregate gradations are within the combined aggregate gradation limits by the second department test:
   - Continue with concrete production.
   - Contractor will include a break in the 4-point running average.

- For Class I: Pavements, department will discontinue reduced frequency testing and will test at a frequency of 1 test per placement day. Once 5 consecutive samples are passing at the 1 test per placement day frequency, the reduced frequency testing will be reapplied.

6. If blended aggregate gradations are not within the combined aggregate gradation limits by the second department test, stop concrete production and submit a new mix design.

(2) If the contractor's 4-point running average or a department test result of the percent passing by weight exceeds the combined aggregate gradation limits by more than 1.0 percent on one or more sieves, stop concrete production and submit a new mix design.

(3) Department and contractor will sample and test aggregate of the new mix design at the frequency defined in 710.5.6.1.

715.3.1.1 General

Replace paragraphs three and four with the following effective with the November 2021 letting:

(3) Cast a set of 3 additional 6"x12" cylinders and test the concrete surface resistivity according to AASHTO T358. Perform this testing at least once per lot if total contract quantities are greater than or equal to the following:

- 20,000 square yards for pavements.
- 5,000 linear feet for barriers.
- 500 cubic yards for structure concrete.

Submit the resistivity to the nearest tenth into MRS for information only. Resistivity testing is not required for the following:

- Lot with less than 3 sublots.
- Concrete items classified as ancillary.
- Concrete placed under the following bid items:
  - Concrete Pavement Approach Slab
  - Concrete Masonry Culverts
  - Concrete Masonry Retaining Walls

(4) Test the air void system at least once per lot and enter the SAM number in MRS for information only. SAM testing is not required for the following:

- For lots with less than 3 sublots.
- High early strength (HES) concrete.
- Special high early strength (SHES) concrete.
- Concrete placed under the following bid items:
  - Concrete Pavement Approach Slab
  - Concrete Masonry Culverts
  - Concrete Masonry Retaining Walls
  - Steel Grid Floor Concrete Filled
  - Crash Cushions Permanent
  - Crash Cushions Permanent Low Maintenance
  - Crash Cushions Temporary

715.3.1.2.3 Lots by Cubic Yard

Replace the entire text with the following effective with the November 2021 letting:

(1) Define standard lots and sublots conforming to the following:

TABLE 715-1 CLASS I - LOT AND SUBLOT SIZES

CONCRETE CLASSIFICATION	LOT SIZE	SUBLOT SIZE	NUMBER OF SUBLOTS PER LOT
Class I: Pavement	1250 cubic yards	250 cubic yards	5
Class I: Structures	250 cubic yards	50 cubic yards	5
Class I: Cast-in-Place Barrier	500 cubic yards	100 cubic yards	5

(2) The contractor may include sublots less than or equal to 25 percent of the standard volume in the previous sublot. For partial sublots exceeding 25 percent of the standard volume, notify the engineer who will direct additional testing to represent that partial sublot.

(3) An undersized lot is eligible for incentive payment under 715.5 if the lot has 3 or more sublots for that lot.

715.3.2 Strength Evaluation

Replace the entire text with the following effective with the November 2021 letting:

715.3.2.1 General

(1) The department will make pay adjustments for strength on a lot-by-lot basis using the compressive strength of contractor QC cylinders or the flexural strength of contractor QC beams.

(2) Randomly select 2 QC specimens to test at 28 days for percent within limits (PWL). Compare the strengths of the 2 randomly selected QC specimens and determine the 28-day sublot average strength as follows:

- If the lower strength divided by the higher strength is 0.9 or more, average the 2 QC specimens.
- If the lower strength divided by the higher strength is less than 0.9, break one additional specimen and average the 2 higher strength specimens.

715.3.2.2 Removal and Replacement

715.3.2.2.1 Pavement

(1) If a sublot strength is less than 2500 psi in compressive strength or 500 psi in flexural strength, the department may direct the contractor to core that sublot to determine its structural adequacy and whether to direct removal.

(2) If the engineer directs coring, obtain three cores from the sublot in question. Have an HTCP-certified PCC technician I perform or observe core sampling according to AASHTO T24.

(3) Have an independent consultant test cores according to AASHTO T24.

(4) The department will assess concrete for removal and replacement based on a sublot-by-sublot analysis of core strength. Perform coring and testing, fill core holes with an engineer-approved non-shrink grout or concrete, and provide traffic control during coring.

(5) The sublot pavement is conforming if the compressive strengths of all cores from the sublot are 2500 psi or greater.

(6) The sublot pavement is nonconforming if the compressive strengths of any core from the sublot is less than 2500 psi. The department may direct removal and replacement or otherwise determine the final disposition of nonconforming material as specified in 106.5.

715.3.2.2.2 Structures and Cast-in-Place Barrier

(1) The department will evaluate the sublot for possible removal and replacement if the 28-day sublot average compressive strength is lower than f'c minus 500 psi. The value of f'c is the design stress the plans show. The department may assess further strength price reductions or require removal and replacement only after coring the sublot.

(2) The engineer may initially evaluate the sublot strength using a non-destructive method. Based on the results of non-destructive testing, the department may accept the sublot at the previously determined pay for the lot, or direct the contractor to core the sublot.

(3) If the engineer directs coring, obtain three cores from the sublot in question. Have an HTCP-certified PCC technician I perform or observe core sampling according to AASHTO T24. Determine core locations, subject to the engineer's approval, that do not interfere with structural steel.

(4) Have an independent consultant test cores according to AASHTO T24.

(5) The department will assess concrete for removal and replacement based on a sublot-by-sublot analysis of core strength. Perform coring and testing, fill core holes with an engineer-approved non-shrink grout or concrete, and provide traffic control during coring.

(6) If the 3-core average is greater than or equal to 85 percent of f'c, and no individual core is less than 75 percent of f'c, the engineer will accept the sublot at the previously determined pay for the lot. If the 3-core average is less than 85 percent of f'c, or an individual core is less than 75 percent of f'c, the engineer may require the contractor to remove and replace the sublot. The department may direct removal and replacement or otherwise determine the final disposition of nonconforming material as specified in 106.5.

715.3.3 Aggregate

Replace the entire text with the following effective with the November 2021 letting:

715.3.3.1 General

(1) Except as allowed for small quantities in 710.2, test aggregate conforming to 710.5.6.

715.3.3.2 Structures

(1) In addition to the aggregate testing required under 710.5.6, determine the fine and coarse aggregate moisture content for each sample.

(2) Calculate target batch weights for each mix when production of that mix begins. Whenever the moisture content of the fine or coarse aggregate changes by more than 0.5 percent, adjust the batch weights to maintain the design w/cm ratio.

716.2.1 Class II Concrete

Replace paragraph two with the following effective with the May 2022 letting:

(2) Perform random QC testing at the following frequencies:

1. Test air content, temperature, and slump a minimum of once per 100 cubic yards for each mix design and placement method.
2. Cast one set of 2 cylinders per 200 cubic yards for each mix design and placement method. Cast a minimum of one set of 2 cylinders per contract for each mix design and placement method. Random 28-day compressive strength cylinders are not required for HES or SHES concrete.
3. For deck overlays, perform tests and cast cylinders once per 50 cubic yards of grade E concrete placed.
4. For concrete base, one set of tests and one set of cylinders per 250 cubic yards.

The department will allow concrete startup test results for quantities under 50 cubic yards. Cast one set of 2 cylinders if using startup testing for acceptance.

ERRATA

460.2.2.3 Aggregate Gradation Master Range

Correct errata by adding US Standard equivalent sieve sizes.

(1) Ensure that the aggregate blend, including recycled material and mineral filler, conforms to the gradation requirements in table 460-1. The values listed are design limits; production values may exceed those limits.

TABLE 460-1 AGGREGATE GRADATION MASTER RANGE AND VMA REQUIREMENTS

SIEVE	PERCENT PASSING DESIGNATED SIEVES							
	NOMINAL SIZE							
	No. 1 (37.5 mm) (1 1/2 inch)	No. 2 (25.0 mm) (1 inch)	No.3 (19.0 mm) (3/4 inch)	No. 4 (12.5 mm) (1/2 inch)	No. 5 (9.5 mm) (3/8 inch)	No. 6 (4.75 mm) (3/16 inch)	SMA No. 4 (12.5 mm) (1/2 inch)	SMA No. 5 (9.5 mm) (3/8 inch)
50.0-mm (2-inch)	100							
37.5-mm (1 1/2-inch)	90 - 100	100						
25.0-mm (1-inch)	90 max	90 - 100	100					
19.0-mm (3/4-inch)	___	90 max	90 - 100	100			100	
12.5-mm (1/2-inch)	___	___	90 max	90 - 100	100		90 - 97	100
9.5-mm (3/8-inch)	___	___	___	90 max	90 - 100	100	58 - 80	90 - 100
4.75-mm (No. 4)	___	___	___	___	90 max	90 - 100	25 - 35	35 - 45
2.36-mm (No. 8)	15 - 41	19 - 45	23 - 49	28 - 58	32 - 67	90 max	15 - 25	18 - 28
1.18-mm (No. 16)	___	___	___	___	___	30 - 55	___	___
0.60-mm (No. 30)	___	___	___	___	___	___	18 max	18 max
0.075-mm (No. 200)	0 - 6.0	1.0 - 7.0	2.0 - 8.0	2.0 - 10.0	2.0 - 10.0	6.0 - 13.0	8.0 - 11.0	8.0 - 12.0
% VMA	11.0 min	12.0 min	13.0 min	14.0 min[1]	15.0 min[2]	16.0 - 17.5	16.0 min	17.0 min

[1] 14.5 for LT and MT mixes.

[2] 15.5 for LT and MT mixes.

715.5.1 General

Correct the bid item number for Incentive Compressive Strength Concrete Pavement.

(1) The department will pay incentive for compressive strength under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
715.0502	Incentive Strength Concrete Structures	DOL
715.0603	Incentive Strength Concrete Barrier	DOL
715.0715	Incentive Flexural Strength Concrete Pavement	DOL
715.0720	Incentive Compressive Strength Concrete Pavement	DOL

ADDITIONAL SPECIAL PROVISION 7

A. Reporting 1st Tier and DBE Payments During Construction

1. Comply with reporting requirements specified in the department's Civil Rights Compliance, Contractor's User Manual, Sublets and Payments.
2. Report payments to all DBE firms within 10 calendar days of receipt of a progress payment by the department or a contractor for work performed, materials furnished, or materials stockpiled by a DBE firm. Report the payment as specified in A(1) for all work satisfactorily performed and for all materials furnished or stockpiled.
3. Report payments to all first tier subcontractor relationships within 10 calendar days of receipt of a progress payment by the department for work performed. Report the payment as specified in A(1) for all work satisfactorily performed.
4. All tiers shall report payments as necessary to comply with the DBE payment requirement as specified in A(2).
5. DBE firms must enter all payments to DBE and non-DBE firms regardless of tier.
6. Require all first tier relationships, DBE firms and all other tier relationships necessary to comply with the DBE payment requirement in receipt of a progress payment by contractor to acknowledge receipt of payment as specified in A(1), (2), (3) and (4).
7. All agreements made by a contractor shall include the provisions in A(1), (2), (3), (4), (5), and (6), and shall be binding on all first tier subcontractor relationships, all contractors and subcontractors utilizing DBE firms on the project, and all payments from DBE firms.

B. Costs for conforming to this special provision are incidental to the contract.

NOTE: CRCS Prime Contractor payment is currently not automated and will need to be manually loaded into the Civil Rights Compliance System. Copies of prime contractor payments received (check or ACH) will have to be forwarded to paul.ndon@dot.wi.gov within 5 days of payment receipt to be logged manually.

***Additionally, for information on Subcontractor Sublet assignments, Subcontractor Payments and Payment Tracking, please refer to the CRCS Payment and Sublets manual at:

https://wisconsindot.gov/Documents/doing-bus/civil-rights/labornwage/crcs-payments-sublets-manual.pdf

Effective January 2019 Letting ASP 9

ADDITIONAL SPECIAL PROVISION 9

Electronic Certified Payroll or Labor Data Submittal

(1) Use the department's Civil Rights Compliance System (CRCS) to electronically submit certified payroll reports for contracts with federal funds and labor data for contracts with state funds only. Details are available online through the department's highway construction contractor information (HCCI) site on the Labor, Wages, and EEO Information page at:

https://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/default.aspx

(2) Ensure that all tiers of subcontractors, including all trucking firms, either submit their weekly certified payroll reports (contracts with federal funds) or labor data (contracts with state funds only) electronically through CRCS. These payrolls or labor data are due within seven calendar days following the close of the payroll period. Every firm providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected firms aware of the requirements under this special provision and arrange for them to receive CRCS training as they are about to begin their submittals. The department will provide training either in a classroom setting at one of our regional offices or by telephone. Contact Paul Ndon at (414) 438-4584 to schedule the training.

(4) The department will reject all paper submittals for information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

(5) Firms wishing to export payroll/labor data from their computer system into CRCS should have their payroll coordinator contact Paul Ndon at paul.ndon@dot.wi.gov. Not every contractor's payroll system is capable of producing export files. For details, see Section 4.8 CPR Auto Submit (Data Mapping) on pages 49-50; 66-71 of the CRCS Payroll Manual at:

https://wisconsindot.gov/Documents/doing-bus/civil-rights/labornwage/crcs-payroll-manual.pdf

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Non-segregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
XI. Certification Regarding Use of Contract Funds for Lobbying
XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

> "It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding (29 CFR 5.5)

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records (29 CFR 5.5)

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

(2) Each payroll submitted shall be accompanied by a “Statement of Compliance,” signed by the contractor or

subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees (29 CFR 5.5)

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the

corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility (29 CFR 5.5)

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1 of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph 1 of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1 of this section. 29 CFR 5.5.

* $27 as of January 23, 2019 (See 84 FR 213-01, 218) as may be adjusted annually by the Department of Labor; pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990).

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 of this section. 29 CFR 5.5.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section. 29 CFR 5.5.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance

with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.326.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.326.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant

who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is

submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(a) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(b) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(c) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier

subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)
This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Non-discrimination Provisions

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. Compliance with Regulations: The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. Non-discrimination: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. Information and Reports: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

a. Withholding payments to the contractor under the contract until the contractor complies; and/or
b. Cancelling, terminating, or suspending a contract, in whole or in part.

6. Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

SEPTEMBER 2002

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Employment Practices" and "Equal Opportunity Clause" set forth in the Required Contract Provisions, FHWA 1273.

2. The goals and timetables for minority and female participation expressed in percentage terms for the contractor's aggregate work force in each trade, on all construction work in the covered area, are as follows:

Goals for Minority Participation for Each Trade:

County	%	County	%	County	%
Adams	1.7	Iowa	1.7	Polk	2.2
Ashland	1.2	Iron	1.2	Portage	0.6
Barron	0.6	Jackson	0.6	Price	0.6
Bayfield	1.2	Jefferson	7.0	Racine	8.4
Brown	1.3	Juneau	0.6	Richland	1.7
Buffalo	0.6	Kenosha	3.0	Rock	3.1
Burnett	2.2	Kewaunee	1.0	Rusk	0.6
Calumet	0.9	La Crosse	0.9	St. Croix	2.9
Chippewa	0.5	Lafayette	0.5	Sauk	1.7
Clark	0.6	Langlade	0.6	Sawyer	0.6
Columbia	1.7	Lincoln	0.6	Shawano	1.0
Crawford	0.5	Manitowoc	1.0	Sheboygan	7.0
Dane	2.2	Marathon	0.6	Taylor	0.6
Dodge	7.0	Marinette	1.0	Trempealeau	0.6
Door	1.0	Marquette	1.7	Vernon	0.6
Douglas	1.0	Menominee	1.0	Vilas	0.6
Dunn	0.6	Milwaukee	8.0	Walworth	7.0
Eau Claire	0.5	Monroe	0.6	Washburn	0.6
Florence	1.0	Oconto	1.0	Washington	8.0
Fond du Lac	1.0	Oneida	0.6	Waukesha	8.0
Forest	1.0	Outagamie	0.9	Waupaca	1.0
Grant	0.5	Ozaukee	8.0	Waushara	1.0
Green	1.7	Pepin	0.6	Winnebago	0.9
Green Lake	1.0	Pierce	2.2	Wood	0.6

Goals for female participation for each trade: 6.9%

These goals are applicable to all the contractor's construction work, (whether or not it is federal or federally assisted), performed in the covered area. If the contractor performs construction work in the geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The contractor's compliance with the Executive Order and the Regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the Regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

   As referred to in this section, the Director means:

   Director
   Office of Federal Contract Compliance Programs
   Ruess Federal Plaza
   310 W. Wisconsin Ave., Suite 1115
   Milwaukee, WI 53202

   The "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

4. As used in this notice, and in the contract resulting from solicitation, the "covered area" is the county(ies) in Wisconsin to which this proposal applies.

APRIL 2013

ADDITIONAL FEDERAL-AID PROVISIONS

NOTICE TO ALL BIDDERS

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bidding collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

Effective November 2020 letting

BUY AMERICA PROVISION

All steel and iron materials permanently incorporated in this project shall be domestic products and all manufacturing and coating processes for these materials from smelting forward in the manufacturing process must have occurred within the United States. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to the requirements of Buy America. The exemption of this requirement is the minimal use of foreign materials if the total cost of such material permanently incorporated in the product does not exceed one-tenth of one percent (1/10 of 1%) of the total contract cost or $2,500.00, whichever is greater. For purposes of this paragraph, the cost is that shown to be the value of the subject products as they are delivered to the project. The contractor shall take actions and provide documentation conforming to CMM 2-28.5 to ensure compliance with this “Buy America” provision.

https://wisconsindot.gov/rdwy/cmm/cm-02-28.pdf

Upon completion of the project certify to the engineer, in writing using department form DT4567, that all steel, iron, and coating processes for steel or iron incorporated into the contract work conform to these "Buy America" provisions. Attach a list of exemptions and their associated costs to the certification form. Department form DT4567 is available at:

https://wisconsindot.gov/Documents/formdocs/dt4567.docx

Effective February 2016 letting

Cargo Preference Act Requirement

All Federal-aid projects shall comply with 46 CFR 381.7 (a) – (b) as follows:

(a) *Agreement Clauses.* “Use of United States-flag vessels:"

(1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.”

(b) *Contractor and Subcontractor Clauses.* “Use of United States-flag vessels: The contractor agrees—“

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

Effective with December 2017 Letting

WISCONSIN DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION AND SYSTEM DEVELOPMENT

SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS FOR PROJECTS WITH FEDERAL AID

I. PREVAILING WAGE RATES

The attached U.S. Department of Labor (Davis-Bacon Minimum Wage Rates) furnishes the minimum prevailing wage rates pursuant to the Davis-Bacon and Related Acts. The wage rates shown are the minimum rates required by the contract to be paid during its life, however this is not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price will be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

II. COVERAGE OF TRUCK DRIVERS

Truck drivers are covered by Davis-Bacon Minimum Wage Rates in the following circumstances:

- Drivers of a contractor or subcontractor for time spent working on the site of the work.
- Drivers of a contractor or subcontractor for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimis. https://www.dol.gov/whd/FOH/FOH_Ch15.pdf
- Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the work and the actual construction site.
- Truck drivers transporting portions of the building or work between a site established specifically for the performance of the contract where a significant portion of such building or work is constructed and the physical place where the building or work called for in the contract will remain.

Truck drivers are not covered by Davis-Bacon Minimum Wage Rates in the following circumstances:

- Material delivery truck drivers while off the site of the work.
- Drivers of a contractor or subcontractor traveling between a Davis-Bacon job and a commercial supply facility while they are off the site of the work."
- Truck drivers whose time spent on the site of the work is de minimis, such as only a few minutes at a time merely to pick up or drop off materials or supplies.

Details are available online at:
https://www.dol.gov/whd/recovery/pwrb/Tab9.pdf
https://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/trckng.aspx

III. POSTINGS AT THE SITE OF THE WORK

In addition to the required postings furnished by the department, the contractor shall post the following in at least one conspicuous and accessible place at the site of work:

a. A copy of the contractor's Equal Employment Opportunity Policy.

All required documents shall be posted by the first day of work and be accurate and complete. Postings must be readable, in an area where they will be noticed, and maintained until the last day of work.

IV. RESOURCES

Required information regarding compliance with federal provisions is found in the following resources:

- FHWA-1273 included in this contract
- U.S. Department of Labor Prevailing Wage Resource Book
- U.S. Department of Labor Field Operations Handbook
- U.S. Code of Federal Regulations
- Any applicable law, Act, or Executive Order enacted by the federal government at the time of the letting of this contract

"General Decision Number: WI20220010 08/12/2022

Superseded General Decision Number: WI20210010

State: Wisconsin

Construction Type: Highway

Counties: Wisconsin Statewide.

HIGHWAY, AIRPORT RUNWAY & TAXIWAY CONSTRUCTION PROJECTS (does not include bridges over navigable waters; tunnels; buildings in highway rest areas; and railroad construction)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at https://www.dol.gov/agencies/whd/government-contracts.

Modification Number	Publication Date
0	01/07/2022

1	01/21/2022
2	02/04/2022
3	02/25/2022
4	03/11/2022
5	03/18/2022
6	04/29/2022
7	05/13/2022
8	06/17/2022
9	07/08/2022
10	07/22/2022
11	07/29/2022
12	08/12/2022

BRWI0001-002 06/01/2021

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 36.81	25.17

BRWI0002-002 06/01/2021

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 44.35	23.89

BRWI0002-005 06/01/2021

ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 37.73	24.15

BRWI0003-002 06/01/2021

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 37.03	24.95

BRWI0004-002 06/01/2021

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
BRICKLAYER	$ 41.30	26.03

BRWI0006-002 06/01/2021

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE,

ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER	$ 37.78	24.20

BRWI0007-002 06/01/2021

GREEN, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.38	25.31

BRWI0008-002 06/01/2021

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
BRICKLAYER	$ 42.38	24.64

BRWI0011-002 06/01/2021

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 37.03	24.95

BRWI0019-002 06/01/2021

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 36.31	25.67

BRWI0034-002 06/01/2021

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.53	25.16

CARP0087-001 05/01/2016

BURNETT (W. of Hwy 48), PIERCE (W. of Hwy 29), POLK (W. of Hwys 35, 48 & 65), AND ST. CROIX (W. of Hwy 65) COUNTIES

	Rates	Fringes
Carpenter & Piledrivermen	$ 36.85	18.39

CARP0252-002 06/01/2016

ADAMS, BARRON, BAYFIELD (Eastern 2/3), BROWN, BUFFALO, BURNETT (E. of Hwy 48), CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE (except area bordering Michigan State Line), FOND DU LAC, FOREST,

GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE (except N.E. corner), MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwys 29 & 65), POLK (E. of Hwys 35, 48 & 65), PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST CROIX (E. of Hwy 65), TAYLOR, TREMPEALEAU, VERNON, VILAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER		
CARPENTER	$ 33.56	18.00
MILLWRIGHT	$ 35.08	18.35
PILEDRIVER	$ 34.12	18.00

CARP0252-010 06/01/2016

ASHLAND COUNTY

	Rates	Fringes
Carpenters		
Carpenter	$ 33.56	18.00
Millwright	$ 35.08	18.35
Pile Driver	$ 34.12	18.00

CARP0264-003 06/01/2016

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WAUKESHA, AND WASHINGTON COUNTIES

	Rates	Fringes
CARPENTER	$ 35.78	22.11

CARP0361-004 05/01/2018

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

	Rates	Fringes
CARPENTER	$ 36.15	20.43

CARP2337-001 06/01/2016

ZONE A: MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON

ZONE B: KENOSHA & RACINE

	Rates	Fringes
PILEDRIVERMAN		
Zone A	$ 31.03	22.69
Zone B	$ 31.03	22.69

ELEC0014-002 12/26/2021

ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (except Maryville, Colby, Unity, Sherman, Fremont, Lynn & Sherwood), CRAWFORD, DUNN, EAU CLAIRE, GRANT, IRON, JACKSON, LA

CROSSE, MONROE, PEPIN, PIERCE, POLK, PRICE, RICHLAND, RUSK, ST CROIX, SAWYER, TAYLOR, TREMPEALEAU, VERNON, AND WASHBURN COUNTIES

	Rates	Fringes
Electricians:	$ 37.83	21.89

ELEC0014-007 05/30/2021

REMAINING COUNTIES

	Rates	Fringes
Teledata System Installer		
Installer/Technician	$ 28.50	15.92

Low voltage construction, installation, maintenance and removal of teledata facilities (voice, data, and video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area networks), LAN (local area networks), and ISDN (integrated systems digital network).

ELEC0127-002 06/01/2021

KENOSHA COUNTY

	Rates	Fringes
Electricians:	$ 43.16	30%+12.70

ELEC0158-002 05/30/2021

BROWN, DOOR, KEWAUNEE, MANITOWOC (except Schleswig), MARINETTE(Wausuakee and area South thereof), OCONTO, MENOMINEE (East of a ine 6 miles West of the West boundary of Oconto County), SHAWANO (Except Area North of Townships of Aniwa and Hutchins) COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 36.14	29.75%+10.26

ELEC0159-003 05/30/2021

COLUMBIA, DANE, DODGE (Area West of Hwy 26, except Chester and Emmet Townships), GREEN, LAKE (except Townships of Berlin, Seneca, and St. Marie), IOWA, MARQUETTE (except Townships of Neshkoka, Crystal Lake, Newton, and Springfield), and SAUK COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 43.38	23.13

ELEC0219-004 06/01/2019

FLORENCE COUNTY (Townships of Aurora, Commonwealth, Fern, Florence and Homestead) AND MARINETTE COUNTY (Township of

Niagara)

	Rates	Fringes
Electricians:		
Electrical contracts over $180,000	$ 33.94	21.80
Electrical contracts under $180,000	$ 31.75	21.73

ELEC0242-005 05/30/2021

DOUGLAS COUNTY

	Rates	Fringes
Electricians:	$ 41.37	69.25%

ELEC0388-002 05/30/2021

ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, MARATHON, MARINETTE (Beecher, Dunbar, Goodman & Pembine), MENOMINEE (Area West of a line 6 miles West of the West boundary of Oconto County), ONEIDA, PORTAGE, SHAWANO (Aniwa and Hutchins), VILAS AND WOOD COUNTIES

	Rates	Fringes
Electricians:	$ 36.22	26%+11.24

ELEC0430-002 06/01/2022

RACINE COUNTY (Except Burlington Township)

	Rates	Fringes
Electricians:	$ 45.02	24.35

ELEC0494-005 06/01/2021

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:	$ 44.39	25.67

ELEC0494-006 06/01/2021

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:	$ 37.91	22.74

ELEC0494-013 06/01/2021

DODGE (East of Hwy 26 including Chester Twp, excluding Emmet Twp), FOND DU LAC (Except Waupuin), MILWAUKEE, OZAUKEE, MANITOWOC (Schleswig), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Sound & Communications		
Installer	$ 22.39	18.80
Technician	$ 32.49	20.26

Installation, testing, maintenance, operation and servicing of all sound, intercom, telephone interconnect, closed circuit TV systems, radio systems, background music systems, language laboratories, electronic carillion, antenna distribution systems, clock and program systems and low-voltage systems such as visual nurse call, audio/visual nurse call systems, doctors entrance register systems. Includes all wire and cable carrying audio, visual, data, light and radio frequency signals. Includes the installation of conduit, wiremold, or raceways in existing structures that have been occupied for six months or more where required for the protection of the wire or cable, but does not mean a complete conduit or raceway system. work covered does not include the installation of conduit, wiremold or any raceways in any new construction, or the installation of power supply outlets by means of which external electric power is supplied to any of the foregoing equipment or products

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ELEC0577-003 06/01/2021

CALUMET (except Township of New Holstein), GREEN LAKE (N. part including Townships of Berlin, St Marie, and Seneca), MARQUETTE (N. part including Townships of Crystal Lake, Neshkoro, Newton, and Springfield), OUTAGAMIE, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
Electricians:	$ 35.66	29.50%+10.00

ELEC0890-003 06/01/2021

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

	Rates	Fringes
Electricians:	$ 39.00	25.95%+11.17

ELEC0953-001 06/02/2019

	Rates	Fringes
Line Construction:		
(1) Lineman	$ 47.53	21.43
(2) Heavy Equipment Operator	$ 42.78	19.80
(3) Equipment Operator	$ 38.02	18.40
(4) Heavy Groundman Driver	$ 33.27	16.88
(5) Light Groundman Driver	$ 30.89	16.11
(6) Groundsman	$ 26.14	14.60

ENGI0139-005 06/01/2022

	Rates	Fringes
Power Equipment Operator		
Group 1	$ 43.27	25.95
Group 2	$ 42.77	25.95
Group 3	$ 42.27	25.95
Group 4	$ 42.01	25.95
Group 5	$ 41.72	25.95
Group 6	$ 35.82	25.95

HAZARDOUS WASTE PREMIUMS:
EPA Level ""A"" protection - $3.00 per hour
EPA Level ""B"" protection - $2.00 per hour
EPA Level ""C"" protection - $1.00 per hour

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, tower cranes, and derricks with or without attachments with a lifting capacity of over 100 tons; or cranes, tower cranes, and derricks with boom, leads and/or jib lengths measuring 176 feet or longer.

GROUP 2: Cranes, tower cranes and derricks with or without attachments with a lifting capacity of 100 tons or less; or cranes, tower cranes, and derricks with boom, leads, and/or jibs lengths measuring 175 feet or under and Backhoes (excavators) weighing 130,000 lbs and over; caisson rigs; pile driver; dredge operator; dredge engineer; Boat Pilot.

GROUP 3: Mechanic or welder - Heavy duty equipment; cranes with a lifting capacity of 25 tons or under; concrete breaker (manual or remote); vibratory/sonic concrete breaker; concrete laser screed; concrete slipform paver; concrete batch plant operator; concrete pvt. spreader - heavy duty (rubber tired); concrete spreader & distributor; automatic subgrader (concrete); concrete grinder & planing machine; concrete slipform curb & gutter machine; slipform concrete placer; tube finisher; hydro blaster (10,000 psi & over); bridge paver; concrete conveyor system; concrete pump; Rotec type Conveyor; stabilizing mixer (self-propelled); shoulder widener; asphalt plant engineer; bituminious paver; bump cutter & grooving machine; milling machine; screed (bituminous paver); asphalt heater, planer & scarifier; Backhoes (excavators) weighing under 130,000 lbs; grader or motor patrol; tractor (scraper, dozer, pusher, loader); scraper - rubber tired (single or twin engine); endloader; hydraulic backhoe (tractor type); trenching machine; skid rigs; tractor, side boom (heavy); drilling or boring machine (mechanical heavy); roller over 5 tons; percussion or rotary drilling machine; air track; blaster; loading machine (conveyor); tugger; boatmen; winches & A-frames; post driver; material hoist.

GROUP 4: Greaser, roller steel (5 tons or less); roller (pneumatic tired) - self propelled; tractor (mounted or towed compactors & light equipment); shouldering machine; self- propelled chip spreader; concrete spreader; finishing machine; mechanical float; curing machine; power subgrader; joint sawer (multiple blade) belting machine; burlap machine; texturing machine; tractor endloader (rubber tired) - light; jeep digger; forklift; mulcher; launch operator; fireman, environmental burner

GROUP 5: Air compressor; power pack; vibrator hammer and

extractor; heavy equipment, leadman; tank car heaters; stump chipper; curb machine operator; Concrete proportioning plants; generators; mudjack operator; rock breaker; crusher or screening plant; screed (milling machine); automatic belt conveyor and surge bin; pug mill operator; Oiler, pump (over 3 inches); Drilling Machine Tender, day light machine

GROUP 6: Off-road material hauler with or without ejector.

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* IRON0008-002 06/13/2022

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:

	Rates	Fringes
IRONWORKER	$ 41.00	28.95

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/01/2021

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER	$ 40.57	28.40

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/05/2022

ADAMS, COLUMBIA, CRAWFORD, DANE, DODGE, FLORENCE, FOREST, GRANT, GREENE, (Excluding S.E. tip), GREEN LAKE, IOWA, JEFFERSON, JUNEAU, LA CROSSE, LAFAYETTE, LANGLADE, MARATHON, MARQUETTE, MENOMINEE, MONROE, PORTAGE, RICHLAND, ROCK (Northern area, vicinity of Edgerton and Milton), SAUK, VERNON, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
IRONWORKER	$ 39.00	28.58

IRON0498-005 06/01/2021

GREEN (S.E. 1/3), ROCK (South of Edgerton and Milton), and WALWORTH (S.W. 1/3) COUNTIES:

	Rates	Fringes
IRONWORKER	$ 41.37	44.41

IRON0512-008 05/01/2022

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 41.00	33.11

IRON0512-021 05/01/2022

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA, PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 36.94	33.11

LABO0113-002 06/01/2022

MILWAUKEE AND WAUKESHA COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 32.65	23.09
Group 2	$ 32.80	23.09
Group 3	$ 33.00	23.09
Group 4	$ 33.15	23.09
Group 5	$ 33.30	23.09
Group 6	$ 29.14	23.09

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagperson; traffic control person

LABO0113-003 06/01/2022

OZAUKEE AND WASHINGTON COUNTIES

	Rates	Fringes

LABORER

Group 1	$ 31.90	23.09
Group 2	$ 32.00	23.09
Group 3	$ 32.05	23.09
Group 4	$ 32.25	23.09
Group 5	$ 32.10	23.09
Group 6	$ 28.99	23.09

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated);

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson and Traffic Control Person

LABO0113-011 06/01/2022

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 31.71	23.09
Group 2	$ 31.86	23.09
Group 3	$ 32.06	23.09
Group 4	$ 32.03	23.09
Group 5	$ 32.36	23.09
Group 6	$ 28.85	23.09

LABORERS CLASSIFICATIONS:

GROUP 1: General laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagman; traffic control person

LABO0140-002 06/01/2022

ADAMS, ASHLAND, BARRON, BAYFIELD, BROWN, BUFFALO, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DOUGLAS, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IRON, JACKSON, JUNEAU, IOWA, JEFFERSON, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST. CROIX, TAYLOR, TREMPEALEAU, VERNON, VILLAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 36.42	18.68
Group 2	$ 36.52	18.68
Group 3	$ 36.57	18.68
Group 4	$ 36.77	18.68
Group 5	$ 36.62	18.68
Group 6	$ 33.05	18.68

LABORER CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bitminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator, Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk and Pavement); Strike Off Man

GROUP 4: Line and Grade Secialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson; Traffic Control

LABO0464-003 06/01/2022

DANE COUNTY

	Rates	Fringes
LABORER		
Group 1	$ 36.70	18.68
Group 2	$ 36.80	18.68
Group 3	$ 36.85	18.68

Group 4	$ 37.05	18.68
Group 5	$ 36.90	18.68
Group 6	$ 33.05	18.68

LABORERS CLASSIFICATIONS:

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminious Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; Powderman

GROUP 6: Flagperson and Traffic Control Person

PAIN0106-008 05/01/2022

ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES

	Rates	Fringes
Painters:		
New:		
Brush, Roller	$ 33.99	22.70
Spray, Sandblast, Steel	$ 34.59	22.70
Repaint:		
Brush, Roller	$ 33.09	22.70
Spray, Sandblast, Steel	$ 32.49	22.70

PAIN0108-002 06/01/2021

RACINE COUNTY

	Rates	Fringes
Painters:		
Brush, Roller	$ 36.08	20.36
Spray & Sandblast	$ 37.52	23.27

PAIN0259-002 05/01/2008

BARRON, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, SAWYER, ST. CROIX, AND WASHBURN COUNTIES

	Rates	Fringes
PAINTER	$ 24.11	12.15

PAIN0259-004 05/01/2015

BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
PAINTER	$ 22.03	12.45

PAIN0781-002 06/01/2021

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Painters:		
Bridge	$ 36.70	24.50
Brush	$ 35.95	24.50
Spray & Sandblast	$ 36.70	24.50

PAIN0802-002 06/01/2021

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND, ROCK, AND SAUK COUNTIES

	Rates	Fringes
PAINTER		
Brush	$ 29.98	18.78

PREMIUM PAY:
Structural Steel, Spray, Bridges = $1.00 additional per hour.

PAIN0802-003 06/01/2021

ADAMS, BROWN, CALUMET, CLARK, DOOR, FOND DU LAC, FOREST, GREEN LAKE, IRON, JUNEAU, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, PORTAGE, PRICE, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WAUSHARA, WAUPACA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
PAINTER	$ 29.98	18.78

PAIN0934-001 06/01/2021

KENOSHA AND WALWORTH COUNTIES

	Rates	Fringes
Painters:		
Brush	$ 36.52	23.27
Spray	$ 37.52	23.27
Structural Steel	$ 36.67	23.27

PAIN1011-002 06/06/2021

FLORENCE COUNTY

	Rates	Fringes

Painters:.....$ 26.71 14.38

PLAS0599-010 06/01/2021

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
Area 1	$ 42.06	20.87
Area 2 (BAC)	$ 37.73	23.80
Area 3	$ 38.74	22.46
Area 4	$ 38.59	22.66
Area 5	$ 38.16	22.98
Area 6	$ 34.94	26.36

AREA DESCRIPTIONS

AREA 1: BAYFIELD, DOUGLAS, PRICE, SAWYER, AND WASHBURN COUNTIES

AREA 2: ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

AREA 3: BUFFALO, CRAWFORD, EAU CLAIRE, JACKSON, JUNEAU, LA CROSSE MONROE, PEPIN, PIERCE, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

AREA 4: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA 5: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA 6: KENOSHA AND RACINE COUNTIES

TEAM0039-001 06/01/2021

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles	$ 32.57	23.81
3 or more Axles; Euclids, Dumptor & Articulated, Truck Mechanic	$ 32.72	23.81
WELL DRILLER	$ 16.52	3.70

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours

they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the

wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

August 2018

NOTICE TO BIDDERS
WAGE RATE DECISION

The wage rate decision of the Department of Labor which has been incorporated in these advertised specifications is incomplete in that the classifications may be omitted from the Department of Labor's decision.

Since the bidder is responsible, independently, for ascertaining area practice with respect to the necessity, or lack of necessity, for the use of these classifications in the prosecution of the work contemplated by this project, no inference may be drawn from the omission of these classifications concerning prevailing area practices relative to their use. Further, this omission will not, per se, be construed as establishing any governmental liability for increased labor cost if it is subsequently determined that such classifications are required.

There may be omissions and/or errors in the federal wage rates. The bidder is responsible for evaluating and determining the correct applicable rate.

If a project includes multiple types of construction (highway, bridge over navigable water, sanitary sewer and water main, building) and there is not a separate wage determination for this type of work included in the proposal, use the wage determination that is in the proposal.

If a project includes multiple types of construction, different wage rate determinations may be inserted into the contract (WI10/Highway = in all WisDOT highway contracts, WI15/Heavy = bridge over navigable water per USDOL and US Coast Guard designation, WI8/Heavy (Sewer & Water Line & Tunnel) = sanitary sewer and water main if the cost is more than 20% of the contract and/or at least $1,000,000, and Building). If multiple wage rate determinations are inserted into the contract, use the classification in the wage determination for the work being done. Use WI15 wage rates when working on the bridge and/or structure from bank to bank. Use WI8 wage rates when working on any sanitary sewer or water main work. Use Building wage rates for all work done within the footprint of the building. Use WI10 wage rates for all other highway work in the contract and approaches to structures. For example, if a laborer is working within the footprint of a building, use the Laborer rate in the Building wage determination inserted in the contract. If a laborer is working on a bridge/structure within the banks, use the Laborer rate in the WI15/Heavy wage determination if inserted in the contract. If the laborer is working on the highway, use the Laborer rate in the WI10/Highway wage determination.

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0002	201.0105 Clearing	343.000 STA	_____.____	_____.____
0004	201.0120 Clearing	144.000 ID	_____.____	_____.____
0006	201.0205 Grubbing	343.000 STA	_____.____	_____.____
0008	201.0220 Grubbing	144.000 ID	_____.____	_____.____
0010	203.0100 Removing Small Pipe Culverts	3.000 EACH	_____.____	_____.____
0012	203.0220 Removing Structure (structure) 0003. B-40-732	1.000 EACH	_____.____	_____.____
0014	203.0220 Removing Structure (structure) 0004. B-40-733	1.000 EACH	_____.____	_____.____
0016	203.0220 Removing Structure (structure) 0005. B-40-734	1.000 EACH	_____.____	_____.____
0018	203.0220 Removing Structure (structure) 0008. B-40-24	1.000 EACH	_____.____	_____.____
0020	203.0220 Removing Structure (structure) 0009. B-40-23	1.000 EACH	_____.____	_____.____
0022	203.0220 Removing Structure (structure) 0101. R-40-412	1.000 EACH	_____.____	_____.____
0024	203.0220 Removing Structure (structure) 0102. R-40-413	1.000 EACH	_____.____	_____.____
0026	203.0220 Removing Structure (structure) 0103. R-40-414	1.000 EACH	_____.____	_____.____
0028	203.0220 Removing Structure (structure) 0104. R-40-415	1.000 EACH	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0030	203.0220 Removing Structure (structure) 0106. R-40-158	1.000 EACH	_____._____	_____._____
0032	203.0220 Removing Structure (structure) 0109. R-40-641	1.000 EACH	_____._____	_____._____
0034	203.0220 Removing Structure (structure) 0110. R-40-642	1.000 EACH	_____._____	_____._____
0036	203.0220 Removing Structure (structure) 0114. STA 1153GHA+00	1.000 EACH	_____._____	_____._____
0038	204.0100 Removing Concrete Pavement	224,901.000 SY	_____._____	_____._____
0040	204.0120 Removing Asphaltic Surface Milling	43,270.000 SY	_____._____	_____._____
0042	204.0150 Removing Curb & Gutter	29,904.000 LF	_____._____	_____._____
0044	204.0155 Removing Concrete Sidewalk	4,843.000 SY	_____._____	_____._____
0046	204.0157 Removing Concrete Barrier	19,379.000 LF	_____._____	_____._____
0048	204.0165 Removing Guardrail	418.000 LF	_____._____	_____._____
0050	204.0170 Removing Fence	36,822.000 LF	_____._____	_____._____
0052	204.0180 Removing Delineators and Markers	7.000 EACH	_____._____	_____._____
0054	204.0195 Removing Concrete Bases	244.000 EACH	_____._____	_____._____
0056	204.0210 Removing Manholes	50.000 EACH	_____._____	_____._____
0058	204.0220 Removing Inlets	454.000 EACH	_____._____	_____._____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0060	204.0245 Removing Storm Sewer (size) 0001. 8-Inch	883.000 LF	_____.____	_____.____
0062	204.0245 Removing Storm Sewer (size) 0002. 10-Inch	79.000 LF	_____.____	_____.____
0064	204.0245 Removing Storm Sewer (size) 0003. 12-Inch	8,159.000 LF	_____.____	_____.____
0066	204.0245 Removing Storm Sewer (size) 0004. 15-Inch	1,696.000 LF	_____.____	_____.____
0068	204.0245 Removing Storm Sewer (size) 0005. 18-Inch	7,973.000 LF	_____.____	_____.____
0070	204.0245 Removing Storm Sewer (size) 0006. 21-Inch	380.000 LF	_____.____	_____.____
0072	204.0245 Removing Storm Sewer (size) 0007. 24-Inch	2,584.000 LF	_____.____	_____.____
0074	204.0245 Removing Storm Sewer (size) 0008. 27-Inch	139.000 LF	_____.____	_____.____
0076	204.0245 Removing Storm Sewer (size) 0009. 30-Inch	1,146.000 LF	_____.____	_____.____
0078	204.0245 Removing Storm Sewer (size) 0010. 36-Inch	619.000 LF	_____.____	_____.____
0080	204.0245 Removing Storm Sewer (size) 0011. 42-Inch	455.000 LF	_____.____	_____.____
0082	204.0245 Removing Storm Sewer (size) 0012. 48-Inch	1,102.000 LF	_____.____	_____.____
0084	204.0245 Removing Storm Sewer (size) 0013. 72-Inch	191.000 LF	_____.____	_____.____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0086	204.0245 Removing Storm Sewer (size) 0014. 38x48-Inch	349.000 LF	_____.____	_____.____
0088	204.0247 Removing Ancillary Structure with Restoration (structure) 0001. S-40-12	1.000 EACH	_____.____	_____.____
0090	204.0247 Removing Ancillary Structure with Restoration (structure) 0002. S-40-64	1.000 EACH	_____.____	_____.____
0092	204.0247 Removing Ancillary Structure with Restoration (structure) 0003. S-40-386	1.000 EACH	_____.____	_____.____
0094	204.0247 Removing Ancillary Structure with Restoration (structure) 0004. S-40-387	1.000 EACH	_____.____	_____.____
0096	204.0247 Removing Ancillary Structure with Restoration (structure) 0005. S-40-900	1.000 EACH	_____.____	_____.____
0098	204.0247 Removing Ancillary Structure with Restoration (structure) 0006. S-40-919	1.000 EACH	_____.____	_____.____
0100	204.0247 Removing Ancillary Structure with Restoration (structure) 0007. S-40-924	1.000 EACH	_____.____	_____.____
0102	204.0247 Removing Ancillary Structure with Restoration (structure) 0008. S-40-925	1.000 EACH	_____.____	_____.____
0104	204.0247 Removing Ancillary Structure with Restoration (structure) 0009. S-40-926	1.000 EACH	_____.____	_____.____
0106	204.0250 Abandoning Manholes	15.000 EACH	_____.____	_____.____
0108	204.0265 Abandoning Wells	11.000 EACH	_____.____	_____.____
0110	204.0280 Sealing Pipes	2.000 EACH	_____.____	_____.____
0112	204.0291.S Abandoning Sewer	2,032.000 CY	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0114	204.9001.S Removing Advance Flasher Assemblies Type 1	2.000 EACH	_____._____	_____._____
0116	204.9035.S Removing (item description) 0001. Riprap	4.000 CY	_____._____	_____._____
0118	204.9060.S Removing (item description) 0001. Cable Barrier Terminal	12.000 EACH	_____._____	_____._____
0120	204.9060.S Removing (item description) 1001. Removing Distribution Center (1229-04-73)	8.000 EACH	_____._____	_____._____
0122	204.9060.S Removing (item description) 1002. Removing Lighting Units (1229-04-73)	146.000 EACH	_____._____	_____._____
0124	204.9060.S Removing (item description) 1003. Removing Underdeck Lighting (1229-04-73)	4.000 EACH	_____._____	_____._____
0126	204.9060.S Removing (item description) 3201. Traffic Signals Port Wash Rd & Bender Rd	1.000 EACH	_____._____	_____._____
0128	204.9060.S Removing (item description) 3202. Loop Detector Wire and Lead-In Cable Port Wash Rd & Bender Rd	1.000 EACH	_____._____	_____._____
0130	204.9060.S Removing (item description) 3301. Traffic Signals IH 43 Ramps & Good Hope Rd	1.000 EACH	_____._____	_____._____
0132	204.9060.S Removing (item description) 3302. Loop Detector Wire and Lead-In Cable IH 43 Ramps & Good Hope Rd	1.000 EACH	_____._____	_____._____
0134	204.9060.S Removing (item description) 3303. Traffic Signals Good Hope Rd & Port Washington Rd	1.000 EACH	_____._____	_____._____
0136	204.9060.S Removing (item description) 3305. Traffic Signals Equipment Brown Deer Rd & CTH W	1.000 EACH	_____._____	_____._____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0138	204.9060.S Removing (item description) 3306. Loop Detector Wire and Lead-In Cable Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
0140	204.9060.S Removing (item description) 3307. Pull Box Rings and Covers Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
0142	204.9060.S Removing (item description) 3320. Communication Vault	21.000 EACH	_____.____	_____.____
0144	204.9090.S Removing (item description) 0001. Cable Barrier	8,439.000 LF	_____.____	_____.____
0146	204.9090.S Removing (item description) 0002. Modular Block Landscaping Retaining Wall	656.000 LF	_____.____	_____.____
0148	205.0100 Excavation Common	746,794.000 CY	_____.____	_____.____
0150	205.3000.S Temporary Emergency Pullouts	2.000 EACH	_____.____	_____.____
0152	206.1000 Excavation for Structures Bridges (structure) 0003. B-40-732	LS	LUMP SUM	_____.____
0154	206.1000 Excavation for Structures Bridges (structure) 0005. B-40-734	LS	LUMP SUM	_____.____
0156	206.1000 Excavation for Structures Bridges (structure) 0008. B-40-921	LS	LUMP SUM	_____.____
0158	206.1000 Excavation for Structures Bridges (structure) 0009. B-40-1026	LS	LUMP SUM	_____.____
0160	206.1000 Excavation for Structures Bridges (structure) 0010. B-40-1027	LS	LUMP SUM	_____.____
0162	206.1000 Excavation for Structures Bridges (structure) 0011. B-40-1028	LS	LUMP SUM	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0164	206.3000 Excavation for Structures Retaining Walls (structure) 0109. R-40-641	LS	LUMP SUM	_____.____
0166	206.3000 Excavation for Structures Retaining Walls (structure) 0110. R-40-642	LS	LUMP SUM	_____.____
0168	206.3000 Excavation for Structures Retaining Walls (structure) 0116. R-40-649	LS	LUMP SUM	_____.____
0170	209.1100 Backfill Granular Grade 1	65,964.000 CY	_____.____	_____.____
0172	210.1500 Backfill Structure Type A	4,335.000 TON	_____.____	_____.____
0174	210.2500 Backfill Structure Type B	1,154.000 TON	_____.____	_____.____
0176	211.0400 Prepare Foundation for Asphaltic Shoulders	70.000 STA	_____.____	_____.____
0178	213.0100 Finishing Roadway (project) 0001. 1229-04-71	1.000 EACH	_____.____	_____.____
0180	213.0100 Finishing Roadway (project) 0002. 1229-04-72	1.000 EACH	_____.____	_____.____
0182	213.0100 Finishing Roadway (project) 0003. 1229-04-73	1.000 EACH	_____.____	_____.____
0184	213.0100 Finishing Roadway (project) 0004. 1229-04-77	1.000 EACH	_____.____	_____.____
0186	305.0110 Base Aggregate Dense 3/4-Inch	338.000 TON	_____.____	_____.____
0188	305.0120 Base Aggregate Dense 1 1/4-Inch	250,124.000 TON	_____.____	_____.____
0190	310.0110 Base Aggregate Open-Graded	2,692.000 TON	_____.____	_____.____
0192	311.0110 Breaker Run	423,518.000 TON	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0194	390.0203 Base Patching Asphaltic	7,500.000 SY	_____.____	_____.____
0196	390.0303 Base Patching Concrete	178.000 SY	_____.____	_____.____
0198	405.0100 Coloring Concrete WisDOT Red	8.000 CY	_____.____	_____.____
0200	405.1000 Stamping Colored Concrete	8.000 CY	_____.____	_____.____
0202	415.0060 Concrete Pavement 6-Inch	2,213.000 SY	_____.____	_____.____
0204	415.0080 Concrete Pavement 8-Inch	14,267.000 SY	_____.____	_____.____
0206	415.0100 Concrete Pavement 10-Inch	22,462.000 SY	_____.____	_____.____
0208	415.0410 Concrete Pavement Approach Slab	1,187.000 SY	_____.____	_____.____
0210	415.1080 Concrete Pavement HES 8-Inch	770.000 SY	_____.____	_____.____
0212	416.0260 Concrete Driveway HES 6-Inch	409.000 SY	_____.____	_____.____
0214	416.0270 Concrete Driveway HES 7-Inch	712.000 SY	_____.____	_____.____
0216	416.0610 Drilled Tie Bars	427.000 EACH	_____.____	_____.____
0218	416.0620 Drilled Dowel Bars	4,453.000 EACH	_____.____	_____.____
0220	416.1010 Concrete Surface Drains	11.000 CY	_____.____	_____.____
0222	450.1100.S Asphaltic Mixture For Extreme Conditions	175.000 TON	_____.____	_____.____
0224	450.4000 HMA Cold Weather Paving	400.000 TON	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0226	455.0605 Tack Coat	26,849.000 GAL	_____.____	_____.____
0228	460.2000 Incentive Density HMA Pavement	39,370.000 DOL	1.00000	39,370.00
0230	460.6223 HMA Pavement 3 MT 58-28 S	46,140.000 TON	_____.____	_____.____
0232	460.6224 HMA Pavement 4 MT 58-28 S	21,885.000 TON	_____.____	_____.____
0234	460.6645 HMA Pavement 5 MT 58-34 V	162.000 TON	_____.____	_____.____
0236	465.0110 Asphaltic Surface Patching	5.000 TON	_____.____	_____.____
0238	465.0120 Asphaltic Surface Driveways and Field Entrances	472.000 TON	_____.____	_____.____
0240	465.0125 Asphaltic Surface Temporary	7,278.000 TON	_____.____	_____.____
0242	465.0310 Asphaltic Curb	1,855.000 LF	_____.____	_____.____
0244	495.1000.S Cold patch	60.000 TON	_____.____	_____.____
0246	501.1000.S Ice Hot Weather Concreting	61,718.000 LB	_____.____	_____.____
0248	502.0100 Concrete Masonry Bridges	920.000 CY	_____.____	_____.____
0250	502.3101 Expansion Device	224.000 LF	_____.____	_____.____
0252	502.3200 Protective Surface Treatment	2,905.000 SY	_____.____	_____.____
0254	502.3205 Pigmented Surface Sealer Reseal	42.000 SY	_____.____	_____.____
0256	502.3210 Pigmented Surface Sealer	4,651.000 SY	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0258	502.3215 Protective Surface Treatment Reseal	1,684.000 SY	_____.____	_____.____
0260	502.4205 Adhesive Anchors No. 5 Bar	3,051.000 EACH	_____.____	_____.____
0262	502.4206 Adhesive Anchors No. 6 Bar	296.000 EACH	_____.____	_____.____
0264	502.4208 Adhesive Anchors No. 8 Bar	16.000 EACH	_____.____	_____.____
0266	503.0137 Prestressed Girder Type I 36W-Inch	966.000 LF	_____.____	_____.____
0268	504.0100 Concrete Masonry Culverts	602.000 CY	_____.____	_____.____
0270	504.0500 Concrete Masonry Retaining Walls	5,120.000 CY	_____.____	_____.____
0272	505.0400 Bar Steel Reinforcement HS Structures	2,087,150.000 LB	_____.____	_____.____
0274	505.0600 Bar Steel Reinforcement HS Coated Structures	975,900.000 LB	_____.____	_____.____
0276	505.0800.S Bar Steel Reinforcement HS Stainless Structures	4,140.000 LB	_____.____	_____.____
0278	505.0905 Bar Couplers No. 5	524.000 EACH	_____.____	_____.____
0280	505.0906 Bar Couplers No. 6	40.000 EACH	_____.____	_____.____
0282	505.0911 Bar Couplers No. 11	168.000 EACH	_____.____	_____.____
0284	506.0105 Structural Steel Carbon	20,274.000 LB	_____.____	_____.____
0286	506.0605 Structural Steel HS	1,820,655.000 LB	_____.____	_____.____
0288	506.2605 Bearing Pads Elastomeric Non-Laminated	40.000 EACH	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0290	506.3004 Welded Stud Shear Connectors 3/4x4-Inch	54.000 EACH	_____._____	_____._____
0292	506.3010 Welded Stud Shear Connectors 7/8x5-Inch	3,164.000 EACH	_____._____	_____._____
0294	506.3015 Welded Stud Shear Connectors 7/8x6-Inch	2,652.000 EACH	_____._____	_____._____
0296	506.4000 Steel Diaphragms (structure) 0009. B-40-1026	6.000 EACH	_____._____	_____._____
0298	506.4000 Steel Diaphragms (structure) 0010. B-40-1027	6.000 EACH	_____._____	_____._____
0300	506.5000 Bearing Assemblies Fixed (structure) 0003. B-40-732	4.000 EACH	_____._____	_____._____
0302	506.5000 Bearing Assemblies Fixed (structure) 0005. B-40-734	2.000 EACH	_____._____	_____._____
0304	509.0301 Preparation Decks Type 1	98.000 SY	_____._____	_____._____
0306	509.0302 Preparation Decks Type 2	2.000 SY	_____._____	_____._____
0308	509.0310.S Sawing Pavement Deck Preparation Areas	743.000 LF	_____._____	_____._____
0310	509.1000 Joint Repair	105.000 SY	_____._____	_____._____
0312	509.1500 Concrete Surface Repair	160.000 SF	_____._____	_____._____
0314	509.2000 Full-Depth Deck Repair	2.000 SY	_____._____	_____._____
0316	509.2100.S Concrete Masonry Deck Repair	9.000 CY	_____._____	_____._____
0318	509.5100.S Polymer Overlay	4,824.000 SY	_____._____	_____._____

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0320	509.9010.S Removing Asphaltic Concrete Deck Overlay (structure) 0001. B-40-577	587.000 SY	_____.____	_____.____
0322	509.9010.S Removing Asphaltic Concrete Deck Overlay (structure) 0002. B-40-578	587.000 SY	_____.____	_____.____
0324	511.1200 Temporary Shoring (structure) 0008. B-40-921	7,104.000 SF	_____.____	_____.____
0326	511.1200 Temporary Shoring (structure) 0009. B-40-1026	1,182.000 SF	_____.____	_____.____
0328	511.1200 Temporary Shoring (structure) 0110. R-40-642	800.000 SF	_____.____	_____.____
0330	511.1200 Temporary Shoring (structure) 0114. R-40-647	200.000 SF	_____.____	_____.____
0332	511.1200 Temporary Shoring (structure) 0202. S-40-3033	195.000 SF	_____.____	_____.____
0334	511.1300 Temporary Shoring (location) 0010.	39,115.000 SF	_____.____	_____.____
0336	511.1300 Temporary Shoring (location) 0010. Location	2,960.000 SF	_____.____	_____.____
0338	511.2200 Temporary Shoring Left in Place (structure) 0101. R-40-412	770.000 SF	_____.____	_____.____
0340	511.2200 Temporary Shoring Left in Place (structure) 0102. R-40-413	620.000 SF	_____.____	_____.____
0342	513.2001 Railing Pipe	788.000 LF	_____.____	_____.____
0344	513.4091 Railing Tubular Screening	2,571.000 LF	_____.____	_____.____
0346	514.1000 Railroad Deck Drains System (railroad structure) 0008. B-40-921	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0348	514.2625 Downspout 6-Inch	157.000 LF	_____.____	_____.____
0350	516.0100 Dampproofing	336.000 SY	_____.____	_____.____
0352	516.0500 Rubberized Membrane Waterproofing	598.000 SY	_____.____	_____.____
0354	516.0600.S Sheet Membrane Waterproofing	1,174.000 SY	_____.____	_____.____
0356	517.0600 Painting Epoxy System (structure) 0003. B-40-732	LS	LUMP SUM	_____.____
0358	517.0600 Painting Epoxy System (structure) 0005. B-40-734	LS	LUMP SUM	_____.____
0360	517.0600 Painting Epoxy System (structure) 0008. B-40-921	LS	LUMP SUM	_____.____
0362	517.0600 Painting Epoxy System (structure) 0109. B-40-641	LS	LUMP SUM	_____.____
0364	517.0600 Painting Epoxy System (structure) 0110. R-40-642	LS	LUMP SUM	_____.____
0366	517.0901.S Preparation and Coating of Top Flanges (structure) 0003. B-40-732	1.000 EACH	_____.____	_____.____
0368	517.0901.S Preparation and Coating of Top Flanges (structure) 0004. B-40-733	1.000 EACH	_____.____	_____.____
0370	517.0901.S Preparation and Coating of Top Flanges (structure) 0005. B-40-734	1.000 EACH	_____.____	_____.____
0372	517.0901.S Preparation and Coating of Top Flanges (structure) 0006. B-40-735	1.000 EACH	_____.____	_____.____
0374	517.1801.S Structure Repainting Recycled Abrasive (structure) 0001. B-40-577	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0376	517.1801.S Structure Repainting Recycled Abrasive (structure) 0002. B-40-578	1.000 EACH	_____.____	_____.____
0378	517.4501.S Negative Pressure Containment and Collection of Waste Materials (structure) 0001. B-40-577	1.000 EACH	_____.____	_____.____
0380	517.4501.S Negative Pressure Containment and Collection of Waste Materials (structure) 0002. B-40-578	1.000 EACH	_____.____	_____.____
0382	517.6001.S Portable Decontamination Facility	2.000 EACH	_____.____	_____.____
0384	521.1012 Apron Endwalls for Culvert Pipe Steel 12-Inch	2.000 EACH	_____.____	_____.____
0386	521.3112 Culvert Pipe Corrugated Steel 12-Inch	22.000 LF	_____.____	_____.____
0388	522.0412 Culvert Pipe Reinforced Concrete Class IV 12-Inch	30.000 LF	_____.____	_____.____
0390	522.0518 Culvert Pipe Reinforced Concrete Class V 18-Inch	35.000 LF	_____.____	_____.____
0392	522.1012 Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	12.000 EACH	_____.____	_____.____
0394	522.1015 Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	5.000 EACH	_____.____	_____.____
0396	522.1018 Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	17.000 EACH	_____.____	_____.____
0398	522.1024 Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	8.000 EACH	_____.____	_____.____
0400	522.1030 Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0402	522.1036 Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	8.000 EACH	_____.____	_____.____
0404	522.1042 Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	4.000 EACH	_____.____	_____.____
0406	522.1054 Apron Endwalls for Culvert Pipe Reinforced Concrete 54-Inch	1.000 EACH	_____.____	_____.____
0408	522.1072 Apron Endwalls for Culvert Pipe Reinforced Concrete 72-Inch	1.000 EACH	_____.____	_____.____
0410	531.1100 Concrete Masonry Ancillary Structures Type NS	191.000 CY	_____.____	_____.____
0412	531.1140 Steel Reinforcement HS Ancillary Structures Type NS	20,137.000 LB	_____.____	_____.____
0414	531.1160 Steel Reinforcement HS Coated Ancillary Structures Type NS	23,540.000 LB	_____.____	_____.____
0416	531.2024 Drilling Shaft 24-Inch	158.000 LF	_____.____	_____.____
0418	531.2030 Drilling Shaft 30-Inch	65.000 LF	_____.____	_____.____
0420	531.2036 Drilling Shaft 36-Inch	642.000 LF	_____.____	_____.____
0422	531.2042 Drilling Shaft 42-Inch	197.000 LF	_____.____	_____.____
0424	531.2048 Drilling Shaft 48-Inch	46.000 LF	_____.____	_____.____
0426	531.4050 Foundation Camera Pole 50-FT	3.000 EACH	_____.____	_____.____
0428	531.5220 Foundation Single-Shaft Type MF-II (structure) 0213. S-40-3045	2.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0430	531.5220 Foundation Single-Shaft Type MF-II (structure) 0214. S-40-3046	1.000 EACH	_____._____	_____._____
0432	531.5220 Foundation Single-Shaft Type MF-II (structure) 0218. S-40-3050	2.000 EACH	_____._____	_____._____
0434	531.5310 Foundation Single-Shaft Type TC-I (structure) 0211. S-40-3043	1.000 EACH	_____._____	_____._____
0436	531.5330 Foundation Single-Shaft Type TC-III (structure) 0220. S-40-3052	1.000 EACH	_____._____	_____._____
0438	531.5330 Foundation Single-Shaft Type TC-III (structure) 0221. S-40-3053	1.000 EACH	_____._____	_____._____
0440	531.5420 Foundation Single-Shaft Type TF-II (structure) 0209. S-40-3040	2.000 EACH	_____._____	_____._____
0442	531.5420 Foundation Single-Shaft Type TF-II (structure) 0217. S-40-3049	2.000 EACH	_____._____	_____._____
0444	531.5420 Foundation Single-Shaft Type TF-II (structure) 0223. S-40-3055	2.000 EACH	_____._____	_____._____
0446	531.5420 Foundation Single-Shaft Type TF-II (structure) 0224. S-40-3056	2.000 EACH	_____._____	_____._____
0448	531.5430 Foundation Single-Shaft Type TF-III (structure) 0210. S-40-3041	2.000 EACH	_____._____	_____._____
0450	531.5440 Foundation Single-Shaft Type TF-IV (structure) 0207. S-40-3038	1.000 EACH	_____._____	_____._____
0452	531.5440 Foundation Single-Shaft Type TF-IV (structure) 0212. S-40-3044	2.000 EACH	_____._____	_____._____
0454	531.5440 Foundation Single-Shaft Type TF-IV (structure) 0219. S-40-3051	2.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0456	531.5440 Foundation Single-Shaft Type TF-IV (structure) 0222. S-40-3054	2.000 EACH	_____._____	_____._____
0458	531.6010 Foundation Two-Shaft Type FC-I (structure) 0215. S-40-3047	1.000 EACH	_____._____	_____._____
0460	531.6010 Foundation Two-Shaft Type FC-I (structure) 0216. S-40-3048	1.000 EACH	_____._____	_____._____
0462	531.6010 Foundation Two-Shaft Type FC-I (structure) 0225. S-40-3057	1.000 EACH	_____._____	_____._____
0464	531.6120 Foundation Two-Shaft Type FF-II (structure) 0201. S-40-461	2.000 EACH	_____._____	_____._____
0466	531.8990 Anchor Assemblies Poles on Structures	3.000 EACH	_____._____	_____._____
0468	532.5020 Butterfly 2-Chord NS (structure) 0203. S-40-3034	1.000 EACH	_____._____	_____._____
0470	532.5020 Butterfly 2-Chord NS (structure) 0208. S-40-3039	1.000 EACH	_____._____	_____._____
0472	532.5220 Monotube Full Span Type II (structure) 0213. S-40-3045	1.000 EACH	_____._____	_____._____
0474	532.5220 Monotube Full Span Type II (structure) 0214. S-40-3046	1.000 EACH	_____._____	_____._____
0476	532.5220 Monotube Full Span Type II (structure) 0218. S-40-3050	1.000 EACH	_____._____	_____._____
0478	532.5310 Truss Cantilever 2-Chord Type I (structure) 0211. S-40-3043	1.000 EACH	_____._____	_____._____
0480	532.5330 Truss Cantilever 2-Chord Type III (structure) 0220. S-40-3052	1.000 EACH	_____._____	_____._____

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0482	532.5330 Truss Cantilever 2-Chord Type III (structure) 0221. S-40-3053	1.000 EACH	_____._____	_____._____
0484	532.5420 Truss Full Span 2-Chord Type II (structure) 0209. S-40-3040	1.000 EACH	_____._____	_____._____
0486	532.5420 Truss Full Span 2-Chord Type II (structure) 0217. S-40-3049	1.000 EACH	_____._____	_____._____
0488	532.5420 Truss Full Span 2-Chord Type II (structure) 0223. S-40-3055	1.000 EACH	_____._____	_____._____
0490	532.5420 Truss Full Span 2-Chord Type II (structure) 0224. S-40-3056	1.000 EACH	_____._____	_____._____
0492	532.5430 Truss Full Span 2-Chord Type III (structure) 0210. S-40-3041	1.000 EACH	_____._____	_____._____
0494	532.5440 Truss Full Span 2-Chord Type IV (structure) 0207. S-40-3038	1.000 EACH	_____._____	_____._____
0496	532.5440 Truss Full Span 2-Chord Type IV (structure) 0212. S-40-3044	1.000 EACH	_____._____	_____._____
0498	532.5440 Truss Full Span 2-Chord Type IV (structure) 0219. S-40-3051	1.000 EACH	_____._____	_____._____
0500	532.5440 Truss Full Span 2-Chord Type IV (structure) 0222. S-40-3054	1.000 EACH	_____._____	_____._____
0502	532.6010 Truss Cantilever 4-Chord Type I (structure) 0204. S-40-3035	1.000 EACH	_____._____	_____._____
0504	532.6010 Truss Cantilever 4-Chord Type I (structure) 0205. S-40-3036	1.000 EACH	_____._____	_____._____
0506	532.6010 Truss Cantilever 4-Chord Type I (structure) 0206. S-40-3037	1.000 EACH	_____._____	_____._____

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0508	532.6010 Truss Cantilever 4-Chord Type I (structure) 0215. S-40-3047	1.000 EACH	_____.____	_____.____
0510	532.6010 Truss Cantilever 4-Chord Type I (structure) 0216. S-40-3048	1.000 EACH	_____.____	_____.____
0512	532.6010 Truss Cantilever 4-Chord Type I (structure) 0225. S-40-3057	1.000 EACH	_____.____	_____.____
0514	532.6020 Truss Cantilever 4-Chord Type II (structure) 0202. S-40-3033	1.000 EACH	_____.____	_____.____
0516	532.6120 Truss Full Span 4-Chord Type II (structure) 0201. S-40-461	1.000 EACH	_____.____	_____.____
0518	541.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 0301. N-40-99	54,400.000 SF	_____.____	_____.____
0520	541.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 0302. N-40-100	145,600.000 SF	_____.____	_____.____
0522	541.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 0303. N-40-102	47,310.000 SF	_____.____	_____.____
0524	541.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 0304. N-40-103	49,600.000 SF	_____.____	_____.____
0526	550.0010 Pre-Boring Unconsolidated Materials	225.000 LF	_____.____	_____.____
0528	550.0500 Pile Points	109.000 EACH	_____.____	_____.____
0530	550.1100 Piling Steel HP 10-Inch X 42 Lb	2,350.000 LF	_____.____	_____.____
0532	550.1120 Piling Steel HP 12-Inch X 53 Lb	1,320.000 LF	_____.____	_____.____
0534	601.0319 Concrete Curb & Gutter 19-Inch	847.000 LF	_____.____	_____.____

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0536	601.0331 Concrete Curb & Gutter 31-Inch	8,656.000 LF	_____._____	_____._____
0538	601.0407 Concrete Curb & Gutter 18-Inch Type D	284.000 LF	_____._____	_____._____
0540	601.0409 Concrete Curb & Gutter 30-Inch Type A	10,441.000 LF	_____._____	_____._____
0542	601.0411 Concrete Curb & Gutter 30-Inch Type D	18,044.000 LF	_____._____	_____._____
0544	601.0413 Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type G	592.000 LF	_____._____	_____._____
0546	601.0555 Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type A	1,142.000 LF	_____._____	_____._____
0548	601.0557 Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	322.000 LF	_____._____	_____._____
0550	601.0580 Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type R	220.000 LF	_____._____	_____._____
0552	601.0600 Concrete Curb Pedestrian	50.000 LF	_____._____	_____._____
0554	602.0410 Concrete Sidewalk 5-Inch	104,688.000 SF	_____._____	_____._____
0556	602.0505 Curb Ramp Detectable Warning Field Yellow	980.000 SF	_____._____	_____._____
0558	602.0605 Curb Ramp Detectable Warning Field Radial Yellow	646.000 SF	_____._____	_____._____
0560	603.1442 Concrete Barrier Type S42C	1,297.000 LF	_____._____	_____._____
0562	603.1456 Concrete Barrier Type S56C	780.000 LF	_____._____	_____._____
0564	603.3513 Concrete Barrier Transition Type S32 to S36	3.000 EACH	_____._____	_____._____

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0566	603.3535 Concrete Barrier Transition Type S36 to S42	6.000 EACH	_____.____	_____.____
0568	603.3559 Concrete Barrier Transition Type S42 to S56	54.000 EACH	_____.____	_____.____
0570	603.3613 Concrete Barrier Transition Type V32 to S36	3.000 EACH	_____.____	_____.____
0572	603.8000 Concrete Barrier Temporary Precast Delivered	107,459.000 LF	_____.____	_____.____
0574	603.8125 Concrete Barrier Temporary Precast Installed	184,001.000 LF	_____.____	_____.____
0576	603.8500 Anchoring Concrete Barrier Temporary Precast	146,096.000 LF	_____.____	_____.____
0578	604.0400 Slope Paving Concrete	90.000 SY	_____.____	_____.____
0580	606.0100 Riprap Light	31.000 CY	_____.____	_____.____
0582	606.0200 Riprap Medium	166.000 CY	_____.____	_____.____
0584	606.0300 Riprap Heavy	1,091.000 CY	_____.____	_____.____
0586	608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	174.000 LF	_____.____	_____.____
0588	608.0315 Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	1,950.000 LF	_____.____	_____.____
0590	608.0318 Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	14,034.000 LF	_____.____	_____.____
0592	608.0324 Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	18,759.000 LF	_____.____	_____.____

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0594	608.0330 Storm Sewer Pipe Reinforced Concrete Class III 30-Inch	6,303.000 LF	_____.____	_____.____
0596	608.0336 Storm Sewer Pipe Reinforced Concrete Class III 36-Inch	2,430.000 LF	_____.____	_____.____
0598	608.0342 Storm Sewer Pipe Reinforced Concrete Class III 42-Inch	977.000 LF	_____.____	_____.____
0600	608.0348 Storm Sewer Pipe Reinforced Concrete Class III 48-Inch	1,144.000 LF	_____.____	_____.____
0602	608.0354 Storm Sewer Pipe Reinforced Concrete Class III 54-Inch	228.000 LF	_____.____	_____.____
0604	608.0384 Storm Sewer Pipe Reinforced Concrete Class III 84-Inch	2,418.000 LF	_____.____	_____.____
0606	608.0412 Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	297.000 LF	_____.____	_____.____
0608	608.0415 Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	933.000 LF	_____.____	_____.____
0610	608.0418 Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	4,043.000 LF	_____.____	_____.____
0612	608.0424 Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	1,690.000 LF	_____.____	_____.____
0614	608.0430 Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch	655.000 LF	_____.____	_____.____
0616	608.0436 Storm Sewer Pipe Reinforced Concrete Class IV 36-Inch	1,591.000 LF	_____.____	_____.____
0618	608.0442 Storm Sewer Pipe Reinforced Concrete Class IV 42-Inch	293.000 LF	_____.____	_____.____

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0620	608.0448 Storm Sewer Pipe Reinforced Concrete Class IV 48-Inch	1,192.000 LF	_____.____	_____.____
0622	608.0454 Storm Sewer Pipe Reinforced Concrete Class IV 54-Inch	900.000 LF	_____.____	_____.____
0624	608.0472 Storm Sewer Pipe Reinforced Concrete Class IV 72-Inch	189.000 LF	_____.____	_____.____
0626	608.0512 Storm Sewer Pipe Reinforced Concrete Class V 12-Inch	28.000 LF	_____.____	_____.____
0628	608.0518 Storm Sewer Pipe Reinforced Concrete Class V 18-Inch	152.000 LF	_____.____	_____.____
0630	608.0524 Storm Sewer Pipe Reinforced Concrete Class V 24-Inch	636.000 LF	_____.____	_____.____
0632	608.0536 Storm Sewer Pipe Reinforced Concrete Class V 36-Inch	751.000 LF	_____.____	_____.____
0634	608.0542 Storm Sewer Pipe Reinforced Concrete Class V 42-Inch	32.000 LF	_____.____	_____.____
0636	608.3012 Storm Sewer Pipe Class III-A 12-Inch	40.000 LF	_____.____	_____.____
0638	608.3015 Storm Sewer Pipe Class III-A 15-Inch	747.000 LF	_____.____	_____.____
0640	608.3018 Storm Sewer Pipe Class III-A 18-Inch	937.000 LF	_____.____	_____.____
0642	608.3036 Storm Sewer Pipe Class III-A 36-Inch	782.000 LF	_____.____	_____.____
0644	608.6008 Storm Sewer Pipe Composite 8-Inch	7.000 LF	_____.____	_____.____
0646	611.0420 Reconstructing Manholes	19.000 EACH	_____.____	_____.____
0648	611.0430 Reconstructing Inlets	67.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0650	611.0530 Manhole Covers Type J	30.000 EACH	_____.____	_____.____
0652	611.0535 Manhole Covers Type J-Special	47.000 EACH	_____.____	_____.____
0654	611.0550 Manhole Covers Type M	1.000 EACH	_____.____	_____.____
0656	611.0610 Inlet Covers Type BW	489.000 EACH	_____.____	_____.____
0658	611.0612 Inlet Covers Type C	1.000 EACH	_____.____	_____.____
0660	611.0615 Inlet Covers Type F	7.000 EACH	_____.____	_____.____
0662	611.0624 Inlet Covers Type H	200.000 EACH	_____.____	_____.____
0664	611.0627 Inlet Covers Type HM	1.000 EACH	_____.____	_____.____
0666	611.0642 Inlet Covers Type MS	105.000 EACH	_____.____	_____.____
0668	611.0654 Inlet Covers Type V	1.000 EACH	_____.____	_____.____
0670	611.0657 Inlet Covers Type W	27.000 EACH	_____.____	_____.____
0672	611.0666 Inlet Covers Type Z	7.000 EACH	_____.____	_____.____
0674	611.1004 Catch Basins 4-FT Diameter	70.000 EACH	_____.____	_____.____
0676	611.1005 Catch Basins 5-FT Diameter	7.000 EACH	_____.____	_____.____
0678	611.1006 Catch Basins 6-FT Diameter	13.000 EACH	_____.____	_____.____
0680	611.2004 Manholes 4-FT Diameter	10.000 EACH	_____.____	_____.____
0682	611.2005 Manholes 5-FT Diameter	100.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0684	611.2006 Manholes 6-FT Diameter	58.000 EACH	_____.____	_____.____
0686	611.2007 Manholes 7-FT Diameter	32.000 EACH	_____.____	_____.____
0688	611.2008 Manholes 8-FT Diameter	41.000 EACH	_____.____	_____.____
0690	611.3004 Inlets 4-FT Diameter	448.000 EACH	_____.____	_____.____
0692	611.3901 Inlets Median 1 Grate	13.000 EACH	_____.____	_____.____
0694	611.3902 Inlets Median 2 Grate	46.000 EACH	_____.____	_____.____
0696	611.8110 Adjusting Manhole Covers	24.000 EACH	_____.____	_____.____
0698	611.8115 Adjusting Inlet Covers	82.000 EACH	_____.____	_____.____
0700	611.8120.S Cover Plates Temporary	220.000 EACH	_____.____	_____.____
0702	611.9800.S Pipe Grates	1.000 EACH	_____.____	_____.____
0704	612.0106 Pipe Underdrain 6-Inch	83,365.000 LF	_____.____	_____.____
0706	612.0206 Pipe Underdrain Unperforated 6-Inch	1,716.000 LF	_____.____	_____.____
0708	612.0406 Pipe Underdrain Wrapped 6-Inch	21,214.000 LF	_____.____	_____.____
0710	612.0806 Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	44.000 EACH	_____.____	_____.____
0712	614.0150 Anchor Assemblies for Steel Plate Beam Guard	2.000 EACH	_____.____	_____.____
0714	614.0397 Guardrail Mow Strip Emulsified Asphalt	26.000 SY	_____.____	_____.____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0716	614.0800 Crash Cushions Permanent	2.000 EACH	_____.____	_____.____
0718	614.0805 Crash Cushions Permanent Low Maintenance	6.000 EACH	_____.____	_____.____
0720	614.0905 Crash Cushions Temporary	31.000 EACH	_____.____	_____.____
0722	614.0920 Salvaged Rail	9,353.000 LF	_____.____	_____.____
0724	614.0930 Salvaged Crash Cushions	2.000 EACH	_____.____	_____.____
0726	614.2300 MGS Guardrail 3	487.000 LF	_____.____	_____.____
0728	614.2310 MGS Guardrail 3 HS	150.000 LF	_____.____	_____.____
0730	614.2500 MGS Thrie Beam Transition	236.000 LF	_____.____	_____.____
0732	614.2610 MGS Guardrail Terminal EAT	6.000 EACH	_____.____	_____.____
0734	614.2620 MGS Guardrail Terminal Type 2	4.000 EACH	_____.____	_____.____
0736	614.8010 Anchor Post Assembly Top Mount	22.000 EACH	_____.____	_____.____
0738	616.0206 Fence Chain Link 6-FT	8,758.000 LF	_____.____	_____.____
0740	616.0329 Gates Chain Link (width) 0001. 4-FT	2.000 EACH	_____.____	_____.____
0742	616.0329 Gates Chain Link (width) 0002. 8-FT	1.000 EACH	_____.____	_____.____
0744	616.0329 Gates Chain Link (width) 0003. 12-FT	5.000 EACH	_____.____	_____.____
0746	616.0700.S Fence Safety	14,000.000 LF	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0748	618.0100 Maintenance And Repair of Haul Roads (project) 0001. 1229-04-71	1.000 EACH	_____._____	_____._____
0750	618.0100 Maintenance And Repair of Haul Roads (project) 0002. 1229-04-72	1.000 EACH	_____._____	_____._____
0752	618.0100 Maintenance And Repair of Haul Roads (project) 0002. 1229-04-73	1.000 EACH	_____._____	_____._____
0754	618.0100 Maintenance And Repair of Haul Roads (project) 0004. 1229-04-77	1.000 EACH	_____._____	_____._____
0756	619.1000 Mobilization	1.000 EACH	_____._____	_____._____
0758	620.0100 Concrete Corrugated Median	520.000 SF	_____._____	_____._____
0760	620.0200 Concrete Median Blunt Nose	148.000 SF	_____._____	_____._____
0762	620.0300 Concrete Median Sloped Nose	3,710.000 SF	_____._____	_____._____
0764	624.0100 Water	1,967.000 MGAL	_____._____	_____._____
0766	627.0200 Mulching	30,000.000 SY	_____._____	_____._____
0768	628.1104 Erosion Bales	950.000 EACH	_____._____	_____._____
0770	628.1504 Silt Fence	43,602.000 LF	_____._____	_____._____
0772	628.1520 Silt Fence Maintenance	43,602.000 LF	_____._____	_____._____
0774	628.1530.S Silt Fence Heavy Duty	13,177.000 LF	_____._____	_____._____
0776	628.1535.S Silt Fence Heavy Duty Maintenance	13,177.000 LF	_____._____	_____._____
0778	628.1905 Mobilizations Erosion Control	61.000 EACH	_____._____	_____._____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0780	628.1910 Mobilizations Emergency Erosion Control	68.000 EACH	_____.____	_____.____
0782	628.2002 Erosion Mat Class I Type A	253,433.000 SY	_____.____	_____.____
0784	628.2006 Erosion Mat Urban Class I Type A	123,620.000 SY	_____.____	_____.____
0786	628.2008 Erosion Mat Urban Class I Type B	16,189.000 SY	_____.____	_____.____
0788	628.6505 Soil Stabilizer Type A	5.000 ACRE	_____.____	_____.____
0790	628.6510 Soil Stabilizer Type B	30.800 ACRE	_____.____	_____.____
0792	628.7005 Inlet Protection Type A	659.000 EACH	_____.____	_____.____
0794	628.7010 Inlet Protection Type B	268.000 EACH	_____.____	_____.____
0796	628.7015 Inlet Protection Type C	292.000 EACH	_____.____	_____.____
0798	628.7020 Inlet Protection Type D	261.000 EACH	_____.____	_____.____
0800	628.7504 Temporary Ditch Checks	4,076.000 LF	_____.____	_____.____
0802	628.7515.S Stone Ditch Checks	100.000 CY	_____.____	_____.____
0804	628.7555 Culvert Pipe Checks	86.000 EACH	_____.____	_____.____
0806	628.7560 Tracking Pads	30.000 EACH	_____.____	_____.____
0808	628.7570 Rock Bags	70.000 EACH	_____.____	_____.____
0810	629.0210 Fertilizer Type B	242.600 CWT	_____.____	_____.____
0812	630.0140 Seeding Mixture No. 40	29.000 LB	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0814	630.0200 Seeding Temporary	4,970.000 LB	_____.____	_____.____
0816	630.0500 Seed Water	3,400.000 MGAL	_____.____	_____.____
0818	633.0200 Delineators Flexible	6.000 EACH	_____.____	_____.____
0820	633.1000 Delineators Barrier Wall	896.000 EACH	_____.____	_____.____
0822	633.5200 Markers Culvert End	53.000 EACH	_____.____	_____.____
0824	634.0618 Posts Wood 4x6-Inch X 18-FT	282.000 EACH	_____.____	_____.____
0826	634.0622 Posts Wood 4x6-Inch X 22-FT	96.000 EACH	_____.____	_____.____
0828	634.0814 Posts Tubular Steel 2x2-Inch X 14-FT	168.000 EACH	_____.____	_____.____
0830	634.0885 Posts Tubular Steel 2x2-Inch X 8.5-FT	119.000 EACH	_____.____	_____.____
0832	635.0200 Sign Supports Structural Steel HS	11,300.000 LB	_____.____	_____.____
0834	636.0050.S Foundation Drilling (diameter) 0010. 36-Inch	5,104.000 LF	_____.____	_____.____
0836	637.1220 Signs Type I Reflective SH	5,054.000 SF	_____.____	_____.____
0838	637.2210 Signs Type II Reflective H	4,631.400 SF	_____.____	_____.____
0840	637.2215 Signs Type II Reflective H Folding	414.140 SF	_____.____	_____.____
0842	637.2230 Signs Type II Reflective F	1,084.630 SF	_____.____	_____.____
0844	638.2101 Moving Signs Type I	2.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0846	638.2102 Moving Signs Type II	17.000 EACH	_____.____	_____.____
0848	638.2601 Removing Signs Type I	29.000 EACH	_____.____	_____.____
0850	638.2602 Removing Signs Type II	471.000 EACH	_____.____	_____.____
0852	638.3000 Removing Small Sign Supports	438.000 EACH	_____.____	_____.____
0854	638.3100 Removing Structural Steel Sign Supports	33.000 EACH	_____.____	_____.____
0856	640.1303.S Pond Liner Clay	5,175.000 CY	_____.____	_____.____
0858	643.0300 Traffic Control Drums	508,187.000 DAY	_____.____	_____.____
0860	643.0420 Traffic Control Barricades Type III	50,707.000 DAY	_____.____	_____.____
0862	643.0500 Traffic Control Flexible Tubular Marker Posts	392.000 EACH	_____.____	_____.____
0864	643.0600 Traffic Control Flexible Tubular Marker Bases	392.000 EACH	_____.____	_____.____
0866	643.0705 Traffic Control Warning Lights Type A	105,624.000 DAY	_____.____	_____.____
0868	643.0715 Traffic Control Warning Lights Type C	67,516.000 DAY	_____.____	_____.____
0870	643.0800 Traffic Control Arrow Boards	3,990.000 DAY	_____.____	_____.____
0872	643.0900 Traffic Control Signs	362,211.000 DAY	_____.____	_____.____
0874	643.0910 Traffic Control Covering Signs Type I	20.000 EACH	_____.____	_____.____
0876	643.0920 Traffic Control Covering Signs Type II	71.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0878	643.1000 Traffic Control Signs Fixed Message	2,490.500 SF	_____.____	_____.____
0880	643.1050 Traffic Control Signs PCMS	1,328.000 DAY	_____.____	_____.____
0882	643.1051 Traffic Control Signs PCMS with Cellular Communications	250.000 DAY	_____.____	_____.____
0884	643.1055.S Truck or Trailer Mounted Attenuator	20.000 DAY	_____.____	_____.____
0886	643.1070 Traffic Control Cones 42-Inch	4,151.000 DAY	_____.____	_____.____
0888	643.1205.S Basic Traffic Queue Warning System	1,160.000 DAY	_____.____	_____.____
0890	643.4100.S Traffic Control Interim Lane Closure	480.000 EACH	_____.____	_____.____
0892	643.5000 Traffic Control	1.000 EACH	_____.____	_____.____
0894	645.0111 Geotextile Type DF Schedule A	46,386.000 SY	_____.____	_____.____
0896	645.0120 Geotextile Type HR	10,093.000 SY	_____.____	_____.____
0898	645.0130 Geotextile Type R	85.000 SY	_____.____	_____.____
0900	645.0220 Geogrid Type SR	73,978.000 SY	_____.____	_____.____
0902	646.1020 Marking Line Epoxy 4-Inch	55,061.000 LF	_____.____	_____.____
0904	646.1040 Marking Line Grooved Wet Ref Epoxy 4-Inch	127,901.000 LF	_____.____	_____.____
0906	646.1545 Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	280.000 LF	_____.____	_____.____
0908	646.1555 Marking Line Grooved Contrast Permanent Tape 4-Inch	39,985.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0910	646.3020 Marking Line Epoxy 8-Inch	7,863.000 LF	_____.____	_____.____
0912	646.3050 Marking Line Grooved Permanent Tape 8-Inch	14,351.000 LF	_____.____	_____.____
0914	646.5020 Marking Arrow Epoxy	185.000 EACH	_____.____	_____.____
0916	646.5120 Marking Word Epoxy	41.000 EACH	_____.____	_____.____
0918	646.5220 Marking Symbol Epoxy	55.000 EACH	_____.____	_____.____
0920	646.6120 Marking Stop Line Epoxy 18-Inch	1,351.000 LF	_____.____	_____.____
0922	646.6464 Cold Weather Marking Epoxy 4-Inch	30,000.000 LF	_____.____	_____.____
0924	646.6468 Cold Weather Marking Epoxy 8-Inch	8,000.000 LF	_____.____	_____.____
0926	646.7120 Marking Diagonal Epoxy 12-Inch	12,783.000 LF	_____.____	_____.____
0928	646.7220 Marking Chevron Epoxy 24-Inch	519.000 LF	_____.____	_____.____
0930	646.7420 Marking Crosswalk Epoxy Transverse Line 6-Inch	4,746.000 LF	_____.____	_____.____
0932	646.8120 Marking Curb Epoxy	990.000 LF	_____.____	_____.____
0934	646.8220 Marking Island Nose Epoxy	44.000 EACH	_____.____	_____.____
0936	646.9000 Marking Removal Line 4-Inch	65,823.000 LF	_____.____	_____.____
0938	646.9010 Marking Removal Line Water Blasting 4-Inch	170,844.000 LF	_____.____	_____.____
0940	646.9110 Marking Removal Line Water Blasting 8-Inch	5,000.000 LF	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0942	646.9200 Marking Removal Line Wide	3,340.000 LF	_____.____	_____.____
0944	649.0105 Temporary Marking Line Paint 4-Inch	377,709.000 LF	_____.____	_____.____
0946	649.0120 Temporary Marking Line Epoxy 4-Inch	304,480.000 LF	_____.____	_____.____
0948	649.0150 Temporary Marking Line Removable Tape 4-Inch	11,660.000 LF	_____.____	_____.____
0950	649.0205 Temporary Marking Line Paint 8-Inch	5,498.000 LF	_____.____	_____.____
0952	649.0220 Temporary Marking Line Epoxy 8-Inch	11,550.000 LF	_____.____	_____.____
0954	649.0760 Temporary Marking Raised Pavement Marker Type I	20,667.000 EACH	_____.____	_____.____
0956	649.0805 Temporary Marking Stop Line Paint 18-Inch	1,358.000 LF	_____.____	_____.____
0958	652.0125 Conduit Rigid Metallic 2-Inch	207.000 LF	_____.____	_____.____
0960	652.0130 Conduit Rigid Metallic 2 1/2-Inch	28.000 LF	_____.____	_____.____
0962	652.0135 Conduit Rigid Metallic 3-Inch	296.000 LF	_____.____	_____.____
0964	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch	52,402.000 LF	_____.____	_____.____
0966	652.0230 Conduit Rigid Nonmetallic Schedule 40 2 1/2-Inch	693.000 LF	_____.____	_____.____
0968	652.0235 Conduit Rigid Nonmetallic Schedule 40 3-Inch	21,575.000 LF	_____.____	_____.____
0970	652.0605 Conduit Special 2-Inch	506.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0972	652.0615 Conduit Special 3-Inch	1,957.000 LF	_____.____	_____.____
0974	652.0700.S Install Conduit into Existing Item	5.000 EACH	_____.____	_____.____
0976	652.0800 Conduit Loop Detector	15,565.000 LF	_____.____	_____.____
0978	653.0135 Pull Boxes Steel 24x36-Inch	60.000 EACH	_____.____	_____.____
0980	653.0140 Pull Boxes Steel 24x42-Inch	211.000 EACH	_____.____	_____.____
0982	653.0220 Junction Boxes 18x6x6-Inch	4.000 EACH	_____.____	_____.____
0984	653.0222 Junction Boxes 18x12x6-Inch	3.000 EACH	_____.____	_____.____
0986	653.0905 Removing Pull Boxes	180.000 EACH	_____.____	_____.____
0988	654.0101 Concrete Bases Type 1	61.000 EACH	_____.____	_____.____
0990	654.0102 Concrete Bases Type 2	13.000 EACH	_____.____	_____.____
0992	654.0105 Concrete Bases Type 5	113.000 EACH	_____.____	_____.____
0994	654.0106 Concrete Bases Type 6	6.000 EACH	_____.____	_____.____
0996	654.0110 Concrete Bases Type 10	11.000 EACH	_____.____	_____.____
0998	654.0113 Concrete Bases Type 13	6.000 EACH	_____.____	_____.____
1000	654.0115 Concrete Bases Type F	4.000 EACH	_____.____	_____.____
1002	654.0120 Concrete Bases Type 10-Special	15.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1004	654.0217 Concrete Control Cabinet Bases Type 9 Special	6.000 EACH	_____.____	_____.____
1006	654.0230 Concrete Control Cabinet Bases Type L30	10.000 EACH	_____.____	_____.____
1008	654.1239 Concrete Control Cabinet Bases ITS	3.000 EACH	_____.____	_____.____
1010	655.0144 Cable In Duct 4-4 AWG	4,520.000 LF	_____.____	_____.____
1012	655.0146 Cable In Duct 4-6 AWG	10,727.000 LF	_____.____	_____.____
1014	655.0148 Cable In Duct 4-8 AWG	1,097.000 LF	_____.____	_____.____
1016	655.0210 Cable Traffic Signal 3-14 AWG	4,692.000 LF	_____.____	_____.____
1018	655.0220 Cable Traffic Signal 4-14 AWG	373.000 LF	_____.____	_____.____
1020	655.0230 Cable Traffic Signal 5-14 AWG	6,093.000 LF	_____.____	_____.____
1022	655.0240 Cable Traffic Signal 7-14 AWG	13,172.000 LF	_____.____	_____.____
1024	655.0250 Cable Traffic Signal 9-14 AWG	2,090.000 LF	_____.____	_____.____
1026	655.0260 Cable Traffic Signal 12-14 AWG	9,776.000 LF	_____.____	_____.____
1028	655.0265 Cable Traffic Signal 15-12 AWG	842.000 LF	_____.____	_____.____
1030	655.0270 Cable Traffic Signal 15-14 AWG	2,049.000 LF	_____.____	_____.____
1032	655.0280 Cable Traffic Signal 19-14 AWG	829.000 LF	_____.____	_____.____
1034	655.0320 Cable Type UF 2-10 AWG Grounded	8,829.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1036	655.0325 Cable Type UF 2-8 AWG Grounded	834.000 LF	_____.____	_____.____
1038	655.0510 Electrical Wire Traffic Signals 12 AWG	3,511.000 LF	_____.____	_____.____
1040	655.0515 Electrical Wire Traffic Signals 10 AWG	51,201.000 LF	_____.____	_____.____
1042	655.0610 Electrical Wire Lighting 12 AWG	55,969.000 LF	_____.____	_____.____
1044	655.0615 Electrical Wire Lighting 10 AWG	3,246.000 LF	_____.____	_____.____
1046	655.0620 Electrical Wire Lighting 8 AWG	65,779.000 LF	_____.____	_____.____
1048	655.0625 Electrical Wire Lighting 6 AWG	64,572.000 LF	_____.____	_____.____
1050	655.0630 Electrical Wire Lighting 4 AWG	55,413.000 LF	_____.____	_____.____
1052	655.0635 Electrical Wire Lighting 2 AWG	100.000 LF	_____.____	_____.____
1054	655.0640 Electrical Wire Lighting 1 AWG	180.000 LF	_____.____	_____.____
1056	655.0700 Loop Detector Lead In Cable	59,224.000 LF	_____.____	_____.____
1058	655.0800 Loop Detector Wire	59,365.000 LF	_____.____	_____.____
1060	655.0900 Traffic Signal EVP Detector Cable	7,464.000 LF	_____.____	_____.____
1062	656.0200 Electrical Service Meter Breaker Pedestal (location) 2001. MBCCTV4000238	LS	LUMP SUM	_____.____
1064	656.0200 Electrical Service Meter Breaker Pedestal (location) 2002. MBCCTV400079	LS	LUMP SUM	_____.____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1066	656.0200 Electrical Service Meter Breaker Pedestal (location) 2003. MBFM400023	LS	LUMP SUM	_____.____
1068	656.0200 Electrical Service Meter Breaker Pedestal (location) 2004. MBRM400141	LS	LUMP SUM	_____.____
1070	656.0200 Electrical Service Meter Breaker Pedestal (location) 2005. DMS400039	LS	LUMP SUM	_____.____
1072	656.0200 Electrical Service Meter Breaker Pedestal (location) 2006. MBSDS400141	LS	LUMP SUM	_____.____
1074	656.0200 Electrical Service Meter Breaker Pedestal (location) 3201. Port Washington Rd & W Bender Rd/W Devon St	LS	LUMP SUM	_____.____
1076	656.0200 Electrical Service Meter Breaker Pedestal (location) 3202. Port Washington Rd & Clovernook Ln	LS	LUMP SUM	_____.____
1078	656.0200 Electrical Service Meter Breaker Pedestal (location) 3301. IH 43 Ramps & Good Hope Rd	LS	LUMP SUM	_____.____
1080	656.0200 Electrical Service Meter Breaker Pedestal (location) 3302. Good Hope Rd & Port Washington Rd	LS	LUMP SUM	_____.____
1082	656.0200 Electrical Service Meter Breaker Pedestal (location) 3303. IH 43 SB Ramps & STH100/Brown Deer Rd	LS	LUMP SUM	_____.____
1084	656.0200 Electrical Service Meter Breaker Pedestal (location) 3304. IH 43 NB Ramps & STH100/Brown Deer Rd	LS	LUMP SUM	_____.____
1086	656.0200 Electrical Service Meter Breaker Pedestal (location) 3305. STH 32/Brown Deer Rd & CTH W/Port Washington Rd	LS	LUMP SUM	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1088	656.0200 Electrical Service Meter Breaker Pedestal (location) 3501. STH 57/Green Bay Rd & Range Line Rd	LS	LUMP SUM	_____.____
1090	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1001. HL-40-FS	LS	LUMP SUM	_____.____
1092	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1002. HL-40-GH	LS	LUMP SUM	_____.____
1094	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1003. HL-40-BR	LS	LUMP SUM	_____.____
1096	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1004. HL-40-NM	LS	LUMP SUM	_____.____
1098	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1005. LCC-TFS1	LS	LUMP SUM	_____.____
1100	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1006. LCC-TNC1	LS	LUMP SUM	_____.____
1102	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1007. LCC-TNM1	LS	LUMP SUM	_____.____
1104	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1008. LLC-GL3	LS	LUMP SUM	_____.____
1106	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1011. LCC-GL1	LS	LUMP SUM	_____.____
1108	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1012. LCC-GL2	LS	LUMP SUM	_____.____
1110	656.0500 Electrical Service Breaker Disconnect Box (location) 2001. CCTV400238	LS	LUMP SUM	_____.____
1112	656.0500 Electrical Service Breaker Disconnect Box (location) 2002. CCTV400079	LS	LUMP SUM	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1114	656.0500 Electrical Service Breaker Disconnect Box (location) 2003. CBRM400023	LS	LUMP SUM	_____.____
1116	656.0500 Electrical Service Breaker Disconnect Box (location) 2004. SDS400055	LS	LUMP SUM	_____.____
1118	656.0500 Electrical Service Breaker Disconnect Box (location) 2005. DMS400039	LS	LUMP SUM	_____.____
1120	656.0500 Electrical Service Breaker Disconnect Box (location) 2006. CCTV400089	LS	LUMP SUM	_____.____
1122	656.0500 Electrical Service Breaker Disconnect Box (location) 2007. SDS400141	LS	LUMP SUM	_____.____
1124	657.0100 Pedestal Bases	59.000 EACH	_____.____	_____.____
1126	657.0210 Transformer Bases Breakaway 15-17 Inch Bolt Circle	72.000 EACH	_____.____	_____.____
1128	657.0255 Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	137.000 EACH	_____.____	_____.____
1130	657.0310 Poles Type 3	12.000 EACH	_____.____	_____.____
1132	657.0315 Poles Type 4	1.000 EACH	_____.____	_____.____
1134	657.0321 Poles Type 5-Steel	2.000 EACH	_____.____	_____.____
1136	657.0322 Poles Type 5-Aluminum	115.000 EACH	_____.____	_____.____
1138	657.0327 Poles Type 6-Aluminum	4.000 EACH	_____.____	_____.____
1140	657.0375 Poles Type A	72.000 EACH	_____.____	_____.____
1142	657.0381 Poles Type F	4.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1144	657.0405 Traffic Signal Standards Aluminum 3.5-FT	10.000 EACH	_____.____	_____.____
1146	657.0420 Traffic Signal Standards Aluminum 13-FT	28.000 EACH	_____.____	_____.____
1148	657.0425 Traffic Signal Standards Aluminum 15-FT	12.000 EACH	_____.____	_____.____
1150	657.0430 Traffic Signal Standards Aluminum 10-FT	9.000 EACH	_____.____	_____.____
1152	657.0605 Luminaire Arms Single Member 4 1/2-Inch Clamp 4-FT	42.000 EACH	_____.____	_____.____
1154	657.0609 Luminaire Arms Single Member 4-Inch Clamp 6-FT	18.000 EACH	_____.____	_____.____
1156	657.0610 Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	94.000 EACH	_____.____	_____.____
1158	657.0620 Luminaire Arms Single Member 6-Inch Clamp 4-FT	118.000 EACH	_____.____	_____.____
1160	658.0173 Traffic Signal Face 3S 12-Inch	129.000 EACH	_____.____	_____.____
1162	658.0174 Traffic Signal Face 4S 12-Inch	15.000 EACH	_____.____	_____.____
1164	658.0175 Traffic Signal Face 5S 12-Inch	10.000 EACH	_____.____	_____.____
1166	658.0416 Pedestrian Signal Face 16-Inch	62.000 EACH	_____.____	_____.____
1168	658.0500 Pedestrian Push Buttons	54.000 EACH	_____.____	_____.____
1170	658.5069 Signal Mounting Hardware (location) 3201. Port Washington Rd & W Bender Rd/W Devon St	LS	LUMP SUM	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1172	658.5069 Signal Mounting Hardware (location) 3202. Port Washington Rd & Clovernook Ln	LS	LUMP SUM	_____._____
1174	658.5069 Signal Mounting Hardware (location) 3301. IH 43 Ramps & Good Hope Rd	LS	LUMP SUM	_____._____
1176	658.5069 Signal Mounting Hardware (location) 3302. Good Hope Rd & Port Washington Rd	LS	LUMP SUM	_____._____
1178	658.5069 Signal Mounting Hardware (location) 3303. IH 43 SB Ramps & STH100/Brown Deer Rd	LS	LUMP SUM	_____._____
1180	658.5069 Signal Mounting Hardware (location) 3304. IH 43 NB Ramps & STH100/Brown Deer Rd	LS	LUMP SUM	_____._____
1182	658.5069 Signal Mounting Hardware (location) 3305. STH 32/Brown Deer Rd & CTH W/Port Washington Rd	LS	LUMP SUM	_____._____
1184	658.5069 Signal Mounting Hardware (location) 3501. STH 57/Green Bay Rd & Range Line Rd	LS	LUMP SUM	_____._____
1186	659.0600 Underdeck Lighting (location) 1001. (B-40-734)	LS	LUMP SUM	_____._____
1188	659.0600 Underdeck Lighting (location) 1002. (B-40-735)	LS	LUMP SUM	_____._____
1190	659.0600 Underdeck Lighting (location) 1003. (B-40-732)	LS	LUMP SUM	_____._____
1192	659.0600 Underdeck Lighting (location) 1004. (B-40-733)	LS	LUMP SUM	_____._____
1194	659.1120 Luminaires Utility LED B	4.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1196	659.1125 Luminaires Utility LED C	175.000 EACH	_____._____	_____._____
1198	659.1130 Luminaires Utility LED D	152.000 EACH	_____._____	_____._____
1200	659.1210 Luminaires Underdeck LED B	16.000 EACH	_____._____	_____._____
1202	659.2230 Lighting Control Cabinets 240/480 30-Inch	10.000 EACH	_____._____	_____._____
1204	659.5000.S Lamp, Ballast, LED, Switch Disposal by Contractor	331.000 EACH	_____._____	_____._____
1206	661.0200 Temporary Traffic Signals for Intersections (location) 3201. Port Washington Rd & W Bender Rd/W Devon St	LS	LUMP SUM	_____._____
1208	661.0200 Temporary Traffic Signals for Intersections (location) 3301. IH 43 SB Ramps & Good Hope Rd	LS	LUMP SUM	_____._____
1210	661.0200 Temporary Traffic Signals for Intersections (location) 3302. IH 43 NB Ramps & Good Hope Rd	LS	LUMP SUM	_____._____
1212	661.0200 Temporary Traffic Signals for Intersections (location) 3303. Good Hope Rd & Port Washington Rd	LS	LUMP SUM	_____._____
1214	661.0200 Temporary Traffic Signals for Intersections (location) 3304. IH 43 SB Ramps & STH100/Brown Deer Rd Stage 1A-1B	LS	LUMP SUM	_____._____
1216	661.0200 Temporary Traffic Signals for Intersections (location) 3305. IH 43 SB Ramps & STH100/Brown Deer Rd Stage 4A-4B	LS	LUMP SUM	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1218	661.0200 Temporary Traffic Signals for Intersections (location) 3306. IH 43 NB Ramps & STH100/Brown Deer Rd Stage 2	LS	LUMP SUM	_____.____
1220	661.0200 Temporary Traffic Signals for Intersections (location) 3307. IH 43 NB Ramps & STH100/Brown Deer Rd Stage 4B	LS	LUMP SUM	_____.____
1222	661.0200 Temporary Traffic Signals for Intersections (location) 3308. STH 32/Brown Deer Rd & CTH W/Port Washington Rd	LS	LUMP SUM	_____.____
1224	661.0300 Generators	14.000 DAY	_____.____	_____.____
1226	670.0100 Field System Integrator	LS	LUMP SUM	_____.____
1228	670.0100 Field System Integrator 3201. Port Washington Rd	LS	LUMP SUM	_____.____
1230	670.0100 Field System Integrator 3301. 1229-04-73 Traffic Signals	LS	LUMP SUM	_____.____
1232	670.0200 ITS Documentation	LS	LUMP SUM	_____.____
1234	670.0200 ITS Documentation 3201. Port Washington Rd	LS	LUMP SUM	_____.____
1236	670.0200 ITS Documentation 3301. 1229-04-73 Traffic Signals	LS	LUMP SUM	_____.____
1238	671.0132 Conduit HDPE 3-Duct 2-Inch	23,955.000 LF	_____.____	_____.____
1240	671.0232 Conduit HDPE Directional Bore 3-Duct 2-Inch	60.000 LF	_____.____	_____.____
1242	673.0105 Communication Vault Type 1	28.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1244	673.0200 Tracer Wire Marker Posts	6.000 EACH	_____.____	_____.____
1246	673.1200.S Install ITS Field Cabinet	3.000 EACH	_____.____	_____.____
1248	673.1225.S Install Pole Mounted Cabinet	6.000 EACH	_____.____	_____.____
1250	674.0200 Cable Microwave Detector	17,660.000 LF	_____.____	_____.____
1252	674.0300 Remove Cable	25,457.000 LF	_____.____	_____.____
1254	674.0400 Reinstall Cable	1,494.000 LF	_____.____	_____.____
1256	675.0100 Install Controller Ramp Meter Processor Assembly	3.000 EACH	_____.____	_____.____
1258	675.0300 Install Mounted Controller Microwave Detector Assembly	20.000 EACH	_____.____	_____.____
1260	677.0150 Install Camera Pole 50-FT	3.000 EACH	_____.____	_____.____
1262	677.0200 Install Camera Assembly	12.000 EACH	_____.____	_____.____
1264	677.9051.S Removing 50-FT Camera Pole	3.000 EACH	_____.____	_____.____
1266	677.9200.S Removing CCTV Camera	3.000 EACH	_____.____	_____.____
1268	678.0006 Install Fiber Optic Cable Outdoor Plant 6-CT	6,705.000 LF	_____.____	_____.____
1270	678.0036 Install Fiber Optic Cable Outdoor Plant 36-CT	1,120.000 LF	_____.____	_____.____
1272	678.0072 Install Fiber Optic Cable Outdoor Plant 72-CT	26,850.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1274	678.0100.S Install Overhead Freeway DMS Full Matrix	1.000 EACH	_____._____	_____._____
1276	678.0200 Fiber Optic Splice Enclosure	10.000 EACH	_____._____	_____._____
1278	678.0300 Fiber Optic Splice	440.000 EACH	_____._____	_____._____
1280	678.0400 Fiber Optic Termination	54.000 EACH	_____._____	_____._____
1282	678.0500 Communication System Testing	LS	LUMP SUM	_____._____
1284	678.0500 Communication System Testing 3201. Port Washington Rd	LS	LUMP SUM	_____._____
1286	678.0500 Communication System Testing 3301. 1229-04-73 Traffic Signals	LS	LUMP SUM	_____._____
1288	678.0600 Install Ethernet Switches	17.000 EACH	_____._____	_____._____
1290	690.0150 Sawing Asphalt	7,598.000 LF	_____._____	_____._____
1292	690.0250 Sawing Concrete	66,796.000 LF	_____._____	_____._____
1294	715.0502 Incentive Strength Concrete Structures	25,078.000 DOL	1.00000	25,078.00
1296	715.0603 Incentive Strength Concrete Barrier	34,630.000 DOL	1.00000	34,630.00
1298	715.0715 Incentive Flexural Strength Concrete Pavement	119,813.000 DOL	1.00000	119,813.00
1300	740.0440 Incentive IRI Ride	61,634.000 DOL	1.00000	61,634.00
1302	801.0117 Railroad Flagging Reimbursement	297,000.000 DOL	1.00000	297,000.00

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1304	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0001. B-40-577	1.000 EACH	_____._____	_____._____
1306	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0002. B-40-578	1.000 EACH	_____._____	_____._____
1308	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0003. B-40-732	1.000 EACH	_____._____	_____._____
1310	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0004. B-40-733	1.000 EACH	_____._____	_____._____
1312	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0005. B-40-734	1.000 EACH	_____._____	_____._____
1314	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0006. B-40-735	1.000 EACH	_____._____	_____._____
1316	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0007. B-40-24	1.000 EACH	_____._____	_____._____
1318	ASP.1T0A On-the-Job Training Apprentice at $5.00/HR	8,400.000 HRS	5.00000	42,000.00
1320	ASP.1T0G On-the-Job Training Graduate at $5.00/HR	17,280.000 HRS	5.00000	86,400.00
1322	SPV.0035 Special 0001. Roadway Embankment	233,825.000 CY	_____._____	_____._____
1324	SPV.0035 Special 4000. HPC Masonry Structures	658.000 CY	_____._____	_____._____
1326	SPV.0035 Special 4005. Concrete Masonry Soldier Pile Footings	894.000 CY	_____._____	_____._____
1328	SPV.0035 Special 4010. Backfill Controlled Low Strength UPRR	40.840 CY	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1330	SPV.0035 Special 4020. Concrete Masonry Bridges UPRR	966.000 CY	_____.____	_____.____
1332	SPV.0045 Special 1001. Truck Entering Warning System	2,320.000 DAY	_____.____	_____.____
1334	SPV.0045 Special 1002. Combination Work Zone Digital Speed Limit - Speed Feedback Sign Trailer	4,710.000 DAY	_____.____	_____.____
1336	SPV.0060 Special 0001. Survey Project 1229-04-71	1.000 EACH	_____.____	_____.____
1338	SPV.0060 Special 0002. Survey Project 1229-04-72	1.000 EACH	_____.____	_____.____
1340	SPV.0060 Special 0003. Survey Project 1229-04-73	1.000 EACH	_____.____	_____.____
1342	SPV.0060 Special 0004. Survey Project 1229-04-77	1.000 EACH	_____.____	_____.____
1344	SPV.0060 Special 0020. Maintain and Remove Crash Cushion Temporary Left in Place	1.000 EACH	_____.____	_____.____
1346	SPV.0060 Special 0030. Concrete Barrier Transition Type G1	1.000 EACH	_____.____	_____.____
1348	SPV.0060 Special 0031. Concrete Barrier Transition Type G2	1.000 EACH	_____.____	_____.____
1350	SPV.0060 Special 0032. Concrete Barrier Transition Type G3	1.000 EACH	_____.____	_____.____
1352	SPV.0060 Special 0033. Concrete Barrier Transition Type G4	1.000 EACH	_____.____	_____.____
1354	SPV.0060 Special 0034. Concrete Barrier Transition Type M1	1.000 EACH	_____.____	_____.____
1356	SPV.0060 Special 0035. Concrete Barrier Transition Type M2	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1358	SPV.0060 Special 0036. Concrete Barrier Transition Type S1	4.000 EACH	_____._____	_____._____
1360	SPV.0060 Special 0037. Concrete Barrier Transition Type Special S42 to S56	2.000 EACH	_____._____	_____._____
1362	SPV.0060 Special 0100. Coring Concrete Wingwalls	2.000 EACH	_____._____	_____._____
1364	SPV.0060 Special 0105. Temporary Concrete Barrier Gate, 24-FT	9.000 EACH	_____._____	_____._____
1366	SPV.0060 Special 0106. Inlets Type Tee Special	5.000 EACH	_____._____	_____._____
1368	SPV.0060 Special 0107. Temporary Storm Sewer Plug	99.000 EACH	_____._____	_____._____
1370	SPV.0060 Special 0108. Structural Concrete Collars	251.000 EACH	_____._____	_____._____
1372	SPV.0060 Special 0110. Reconnect Storm Sewer	243.000 EACH	_____._____	_____._____
1374	SPV.0060 Special 0120. Mobilizations Emergency Pavement Repair	30.000 EACH	_____._____	_____._____
1376	SPV.0060 Special 0125. Section Corner Monuments Special	5.000 EACH	_____._____	_____._____
1378	SPV.0060 Special 0130. Salvage and Reinstall Ramp Gate 24-Foot	1.000 EACH	_____._____	_____._____
1380	SPV.0060 Special 0131. Salvage and Reinstall Ramp Gate 28-Foot	2.000 EACH	_____._____	_____._____
1382	SPV.0060 Special 0132. Salvage and Reinstall Ramp Gate 32-Foot	7.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1384	SPV.0060 Special 0133. Salvage and Reinstall Ramp Gate 37-Foot	2.000 EACH	_____.____	_____.____
1386	SPV.0060 Special 0140. Crack and Damage Survey Single or Double Unit Residential	60.000 EACH	_____.____	_____.____
1388	SPV.0060 Special 0141. Crack and Damage Survey Multi-Unit Residential	13.000 EACH	_____.____	_____.____
1390	SPV.0060 Special 0142. Crack and Damage Survey Commercial, Public, or Industrial	37.000 EACH	_____.____	_____.____
1392	SPV.0060 Special 0200. Fastening Sewer Access Covers	30.000 EACH	_____.____	_____.____
1394	SPV.0060 Special 0206. Detention Pond Anti-Seep Collar	1.000 EACH	_____.____	_____.____
1396	SPV.0060 Special 0208. Manhole, 10X10-FT	9.000 EACH	_____.____	_____.____
1398	SPV.0060 Special 0210. Riser Pipe Grate	9.000 EACH	_____.____	_____.____
1400	SPV.0060 Special 0601. Baseline CPM Progress Schedule	1.000 EACH	_____.____	_____.____
1402	SPV.0060 Special 0602. Monthly CPM Progress Schedule Updates	30.000 EACH	_____.____	_____.____
1404	SPV.0060 Special 0700. Brown Deer Pond Outlet Storm Sewer Structure	1.000 EACH	_____.____	_____.____
1406	SPV.0060 Special 0701. Outlet Control Manhole, 10x10 FT	6.000 EACH	_____.____	_____.____
1408	SPV.0060 Special 0710. Temporary Water Diversion Indian Creek	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1410	SPV.0060 Special 0800. Geotechnical Instrumentation Track Embankment UPRR	1.000 EACH	_____._____	_____._____
1412	SPV.0060 Special 0910. Traffic Control Open-Close Freeway Entrance Ramp	284.000 EACH	_____._____	_____._____
1414	SPV.0060 Special 0918. Traffic Control Full Freeway Closure	92.000 EACH	_____._____	_____._____
1416	SPV.0060 Special 0920. Install, Maintain, and Remove State Furnished Signs	6.000 EACH	_____._____	_____._____
1418	SPV.0060 Special 0940. Emergency Response to Traffic Involving Concrete Barrier Temporary	11.000 EACH	_____._____	_____._____
1420	SPV.0060 Special 0945. Emergency Response to Traffic Involving Temporary Crash Cushion	6.000 EACH	_____._____	_____._____
1422	SPV.0060 Special 0950. Exposing Existing Infrastructure Paved Area	12.000 EACH	_____._____	_____._____
1424	SPV.0060 Special 0955. Exposing Existing Infrastructure Unpaved Area	12.000 EACH	_____._____	_____._____
1426	SPV.0060 Special 0960. Contractor Staging Area	1.000 EACH	_____._____	_____._____
1428	SPV.0060 Special 1001. Maintenance of Lighting Systems (1229-04-73)	1.000 EACH	_____._____	_____._____
1430	SPV.0060 Special 1002. Lighting System Intergrator (1229-04-73)	1.000 EACH	_____._____	_____._____
1432	SPV.0060 Special 1003. Lighting System Survey (1229-04-73)	1.000 EACH	_____._____	_____._____
1434	SPV.0060 Special 1004. Installing Conduit and Junction Boxes on the Bridge (B-40-735)	1.000 EACH	_____._____	_____._____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1436	SPV.0060 Special 1005. Wood Pole 60-Foot	8.000 EACH	_____.____	_____.____
1438	SPV.0060 Special 1006. Removing 60-Foot Wood Pole and Floodlights	79.000 EACH	_____.____	_____.____
1440	SPV.0060 Special 1007. Removing 60-Foot Wood Pole	8.000 EACH	_____.____	_____.____
1442	SPV.0060 Special 1008. Luminaires Floodlight 400W HPS	82.000 EACH	_____.____	_____.____
1444	SPV.0060 Special 1009. Remove Electrical Service Meter Breaker Pedestal Lighting	7.000 EACH	_____.____	_____.____
1446	SPV.0060 Special 1010. Concrete Bases Type B	72.000 EACH	_____.____	_____.____
1448	SPV.0060 Special 1011. Concrete Bases Type 5 Special	5.000 EACH	_____.____	_____.____
1450	SPV.0060 Special 1012. Remove and Salvage Municipal Lighting Units	19.000 EACH	_____.____	_____.____
1452	SPV.0060 Special 1013. Install Salvaged Municipal Lighting Units	4.000 EACH	_____.____	_____.____
1454	SPV.0060 Special 1014. Wood Pole Lighting 60-Foot	79.000 EACH	_____.____	_____.____
1456	SPV.0060 Special 1021. Decorative Lighting Pole And Luminaire Single	11.000 EACH	_____.____	_____.____
1458	SPV.0060 Special 1022. Decorative Lighting Pole and Luminaires Twin	3.000 EACH	_____.____	_____.____
1460	SPV.0060 Special 1023. Concrete Bases Type 5 Modified	14.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1462	SPV.0060 Special 2000. Removing Electrical Service Meter Breaker Pedestal	6.000 EACH	_____.____	_____.____
1464	SPV.0060 Special 2001. Removing Controller Cabinet	8.000 EACH	_____.____	_____.____
1466	SPV.0060 Special 2002. Removing Controller Cabinet Base	8.000 EACH	_____.____	_____.____
1468	SPV.0060 Special 2004. Removing Ramp Control Signal Assembly Sidemount	6.000 EACH	_____.____	_____.____
1470	SPV.0060 Special 2008. Remove Pole	10.000 EACH	_____.____	_____.____
1472	SPV.0060 Special 2010. Temporary Poles Wood 40-Foot	7.000 EACH	_____.____	_____.____
1474	SPV.0060 Special 2011. Temporary Poles Wood 60-Foot	2.000 EACH	_____.____	_____.____
1476	SPV.0060 Special 2013. Ground Rod	10.000 EACH	_____.____	_____.____
1478	SPV.0060 Special 2015. Refocus Vehicle Detector Assembly	20.000 EACH	_____.____	_____.____
1480	SPV.0060 Special 2016. Install Ethernet Radio	13.000 EACH	_____.____	_____.____
1482	SPV.0060 Special 2018. Signal Assembly Advance Flasher Type 1	6.000 EACH	_____.____	_____.____
1484	SPV.0060 Special 2021. Install State-Furnished Pole	2.000 EACH	_____.____	_____.____
1486	SPV.0060 Special 2024. Loop Detector Protection	8.000 EACH	_____.____	_____.____
1488	SPV.0060 Special 2025. Signal Assembly Ramp Control Overhead	9.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1490	SPV.0060 Special 2026. Install Temporary Traffic Camera Assembly	2.000 EACH	_____.____	_____.____
1492	SPV.0060 Special 2027. Install Temporary Traffic Camera Power Assembly	2.000 EACH	_____.____	_____.____
1494	SPV.0060 Special 2028. Remove Temporary Traffic Camera Assembly	2.000 EACH	_____.____	_____.____
1496	SPV.0060 Special 2029. Remove Temporary Traffic Camera Power Assembly	2.000 EACH	_____.____	_____.____
1498	SPV.0060 Special 3001. Install Poles Type 9	7.000 EACH	_____.____	_____.____
1500	SPV.0060 Special 3002. Install Poles Type 10	4.000 EACH	_____.____	_____.____
1502	SPV.0060 Special 3003. Install Poles Type 9-Special	5.000 EACH	_____.____	_____.____
1504	SPV.0060 Special 3004. Install Poles Type 10-Special	10.000 EACH	_____.____	_____.____
1506	SPV.0060 Special 3006. Install Poles Type 13	6.000 EACH	_____.____	_____.____
1508	SPV.0060 Special 3007. Install Monotube Arms 15-FT	1.000 EACH	_____.____	_____.____
1510	SPV.0060 Special 3008. Install Monotube Arms 20-FT	4.000 EACH	_____.____	_____.____
1512	SPV.0060 Special 3009. Install Monotube Arms 25-FT	2.000 EACH	_____.____	_____.____
1514	SPV.0060 Special 3010. Install Monotube Arms 30-FT	4.000 EACH	_____.____	_____.____
1516	SPV.0060 Special 3012. Install Monotube Arms 35-FT-Special	6.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1518	SPV.0060 Special 3014. Install Monotube Arms 40-FT-Special	3.000 EACH	_____.____	_____.____
1520	SPV.0060 Special 3016. Install Monotube Arms 45-FT-Special	6.000 EACH	_____.____	_____.____
1522	SPV.0060 Special 3017. Install Monotube Arms 50-FT	5.000 EACH	_____.____	_____.____
1524	SPV.0060 Special 3018. Install Monotube Arms 55-FT	1.000 EACH	_____.____	_____.____
1526	SPV.0060 Special 3019. Install Luminaire Arms Steel 15-FT	25.000 EACH	_____.____	_____.____
1528	SPV.0060 Special 3201. Backplates with Reflective Border 3 Section 12-Inch	27.000 EACH	_____.____	_____.____
1530	SPV.0060 Special 3202. Backplates with Reflective Border 4 Section 12-Inch	13.000 EACH	_____.____	_____.____
1532	SPV.0060 Special 3203. Backplates with Reflective Border 5 Section 12-Inch	2.000 EACH	_____.____	_____.____
1534	SPV.0060 Special 3204. Contractor Furn Traffic Signal Control Cabinet Port Wash Rd & Bender Rd	1.000 EACH	_____.____	_____.____
1536	SPV.0060 Special 3205. Contractor Furn Traffic Signal Control Cabinet Port Wash Rd & Clovernook	1.000 EACH	_____.____	_____.____
1538	SPV.0060 Special 3206. Trnspt Traffic Sig & Inter Lighting Materials Port Wash Rd & Bender Rd	1.000 EACH	_____.____	_____.____
1540	SPV.0060 Special 3207. Trnspt Traffic Sig & Inter Lighting Materials Port wash Rd & Clovernook	1.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1542	SPV.0060 Special 3208. Emergency Vehicle Detection System Port Wash Rd & Bender Rd	1.000 EACH	_____._____	_____._____
1544	SPV.0060 Special 3209. Emergency Vehicle Detection System Port Washington Rd & Clovernook Ln	1.000 EACH	_____._____	_____._____
1546	SPV.0060 Special 3210. Trnsprt & Install S-F FO Cable Pigtail Port Wash Rd & Bender Rd	1.000 EACH	_____._____	_____._____
1548	SPV.0060 Special 3301. Traffic Signal Vault	2.000 EACH	_____._____	_____._____
1550	SPV.0060 Special 3302. Trnspt & Install S-F Traffic Signal Cabinet IH 43 Ramps & Good Hope Rd	2.000 EACH	_____._____	_____._____
1552	SPV.0060 Special 3303. Trnspt & Install S-F Traffic Signal Cabinet IH 43 SB Ramps & STH100	1.000 EACH	_____._____	_____._____
1554	SPV.0060 Special 3304. Trnspt & Install S-F Traffic Signal Cabinet IH 43 NB Ramps & STH100	1.000 EACH	_____._____	_____._____
1556	SPV.0060 Special 3305. Trnspt & Install S-F Traffic Signal Cabinet Brown Deer Rd & CTH W	1.000 EACH	_____._____	_____._____
1558	SPV.0060 Special 3306. Traffic Signal Cabinet 16-Phase, Good Hope Rd & Port Washington Rd	1.000 EACH	_____._____	_____._____
1560	SPV.0060 Special 3307. Trnspt Traffic Sig & Inter Lighting materials IH 43 Ramps & Good Hope	1.000 EACH	_____._____	_____._____
1562	SPV.0060 Special 3308. Trnspt Traffic Sig & Inter Lighting Materials Good Hope & Port Wash Rd	1.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1564	SPV.0060 Special 3309. Trnspt Traffic Signals & Inter Lighting Materials IH 43 SB Ramps & STH100	1.000 EACH	_____.____	_____.____
1566	SPV.0060 Special 3310. Trnspt Traffic Signals & Inter Lighting Materials IH 43 NB Ramps & STH100	1.000 EACH	_____.____	_____.____
1568	SPV.0060 Special 3311. Trnspt Traffic Signals & Inter Lighting Materials Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
1570	SPV.0060 Special 3312. Trnsprt & Install S-F Radar Detection System IH 43 Ramps & Good Hope	1.000 EACH	_____.____	_____.____
1572	SPV.0060 Special 3313. Trnsprt & Install S-F Radar Detection System IH 43 SB Ramps & STH100	1.000 EACH	_____.____	_____.____
1574	SPV.0060 Special 3314. Trnsprt & Install S-F Radar Detection System IH 43 NB Ramps & STH100	1.000 EACH	_____.____	_____.____
1576	SPV.0060 Special 3315. Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 Ramps & Good Hope	1.000 EACH	_____.____	_____.____
1578	SPV.0060 Special 3316. Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 SB Ramps & STH100	1.000 EACH	_____.____	_____.____
1580	SPV.0060 Special 3317. Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 NB Ramps & STH100	1.000 EACH	_____.____	_____.____
1582	SPV.0060 Special 3318. Trnspt & Install S-F EVP Heads With Confirm Lights Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1584	SPV.0060 Special 3319. Remove & Reinstall EVP Equipment Good Hope Rd & Port Washington Rd	1.000 EACH	_____.____	_____.____
1586	SPV.0060 Special 3320. Install Pull Box Rings and Covers Brown Deer Rd & CTH W	5.000 EACH	_____.____	_____.____
1588	SPV.0060 Special 3321. Temporary EVP System IH 43 Ramps & Good Hope Rd	1.000 EACH	_____.____	_____.____
1590	SPV.0060 Special 3322. Temporary EVP System Good Hope Rd & Port Washington Rd	1.000 EACH	_____.____	_____.____
1592	SPV.0060 Special 3323. Temporary EVP System IH 43 SB Ramps & STH 100/Brown Deer Rd	1.000 EACH	_____.____	_____.____
1594	SPV.0060 Special 3324. Temporary EVP System IH 43 NB Ramps & STH 100/Brown Deer Rd	1.000 EACH	_____.____	_____.____
1596	SPV.0060 Special 3325. Temporary EVP System STH 32/Brown Deer Rd & CTH W/Port Washington Rd	1.000 EACH	_____.____	_____.____
1598	SPV.0060 Special 3331. Trnsprt & Install S-F FO Cable Pigtail IH 43 Ramps & Good Hope	1.000 EACH	_____.____	_____.____
1600	SPV.0060 Special 3332. Trnsprt & Install S-F FO Cable Pigtail Good Hope Rd & Port Wash Rd	1.000 EACH	_____.____	_____.____
1602	SPV.0060 Special 3333. Trnsprt & Install S-F FO Cable Pigtail IH 43 SB Ramps & STH 100	1.000 EACH	_____.____	_____.____
1604	SPV.0060 Special 3334. Trnsprt & Install S-F FO Cable Pigtail IH 43 NB Ramps & STH 100	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1606	SPV.0060 Special 3335. Trnsprt & Install S-F FO Cable Pigtail Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
1608	SPV.0060 Special 3336. Accessible Pedestrian Push Button System	1.000 EACH	_____.____	_____.____
1610	SPV.0060 Special 3337. Concrete Control Cabinet Bases Type 9 Special Super P	3.000 EACH	_____.____	_____.____
1612	SPV.0060 Special 3501. Trnspt & Install S-F Traffic Signal Cabinet STH 57/Green Bay & Range Line	1.000 EACH	_____.____	_____.____
1614	SPV.0060 Special 3502. Trnspt Traffic Sig & Inter Lighting Materials STH 57/Green Bay&Range Line	1.000 EACH	_____.____	_____.____
1616	SPV.0060 Special 3503. Trnspt & Install State Furn EVP Heads STH 57/Green Bay Rd & Range Line Rd	1.000 EACH	_____.____	_____.____
1618	SPV.0060 Special 4000. Pile Dynamic Analyzer (PDA) Testing	9.000 EACH	_____.____	_____.____
1620	SPV.0060 Special 4001. Pile Dynamic Analyzer (PDA) Restrikes	9.000 EACH	_____.____	_____.____
1622	SPV.0060 Special 4002. CAse Pile Wave Analysis Program (CAPWAP) Evaluation	5.000 EACH	_____.____	_____.____
1624	SPV.0060 Special 4005. Removing and Resetting Noise Wall Panels B-40-578	1.000 EACH	_____.____	_____.____
1626	SPV.0060 Special 4006. Anchor Assemblies Noise Barrier Structures B-40-578	2.000 EACH	_____.____	_____.____
1628	SPV.0060 Special 4010. Eye Bolt Drilled In	116.000 EACH	_____.____	_____.____
1630	SPV.0060 Special 4015. Bearing Assemblies Fixed UPRR B-40-921	20.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1632	SPV.0060 Special 4016. Bearing Assemblies Expansion UPRR B-40-921	20.000 EACH	_____.____	_____.____
1634	SPV.0060 Special 4020. Crosshole Sonic Log (CSL) Testing, Wall Secant Pile 59.06-Inch	162.000 EACH	_____.____	_____.____
1636	SPV.0060 Special 4025. Thermal Integrity Profiler (TIP) Testing, Wall Secant Pile 59.06-Inch	162.000 EACH	_____.____	_____.____
1638	SPV.0060 Special 4030. Trial Wall Panel Secant Pile 59.06-Inch	1.000 EACH	_____.____	_____.____
1640	SPV.0060 Special 4031. Trial Wall Panel Secant Pile 59.06-Inch UPRR	1.000 EACH	_____.____	_____.____
1642	SPV.0060 Special 4040. Track, Shoring and Existing Structure Monitoring UPRR	1.000 EACH	_____.____	_____.____
1644	SPV.0060 Special 4050. Tieback Anchors	21.000 EACH	_____.____	_____.____
1646	SPV.0060 Special 4051. Tieback Anchor Performance Tests	4.000 EACH	_____.____	_____.____
1648	SPV.0060 Special 4052. Tieback Anchors Extended Creep Tests	2.000 EACH	_____.____	_____.____
1650	SPV.0060 Special 4060. MSE Wall Sleeve Type 1	1.000 EACH	_____.____	_____.____
1652	SPV.0060 Special 4061. MSE Wall Sleeve Type 13	1.000 EACH	_____.____	_____.____
1654	SPV.0060 Special 4062. MSE Wall Sleeve Temporary Signal Pole	2.000 EACH	_____.____	_____.____
1656	SPV.0060 Special 4070. Bar Couplers No. 14	546.000 EACH	_____.____	_____.____
1658	SPV.0060 Special 4071. Bar Couplers No. 18	1,231.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1660	SPV.0060 Special 5000. Adjusting Sanitary Manhole	18.000 EACH	_____.____	_____.____
1662	SPV.0060 Special 5001. Reconstruct Sanitary Manhole	7.000 EACH	_____.____	_____.____
1664	SPV.0060 Special 5002. Furnish Sanitary Manhole Cover	10.000 EACH	_____.____	_____.____
1666	SPV.0060 Special 5003. Sanitary Manhole Type A 48-Inch	2.000 EACH	_____.____	_____.____
1668	SPV.0060 Special 5004. Sanitary Manhole Type D 48-Inch	3.000 EACH	_____.____	_____.____
1670	SPV.0060 Special 5005. Abandoning Sanitary Manhole	1.000 EACH	_____.____	_____.____
1672	SPV.0060 Special 5010. Adjusting Water Valve Boxes	50.000 EACH	_____.____	_____.____
1674	SPV.0060 Special 5011. Reconstruct Water Manhole	3.000 EACH	_____.____	_____.____
1676	SPV.0075 Special 0600. Pavement Cleanup Project 1229-04-71	250.000 HRS	_____.____	_____.____
1678	SPV.0075 Special 0601. Pavement Cleanup Project 1229-04-73	1,500.000 HRS	_____.____	_____.____
1680	SPV.0075 Special 0602. Pavement Cleanup Project 1229-04-77	100.000 HRS	_____.____	_____.____
1682	SPV.0075 Special 4000. Obstructions Wall Secant Pile	85.000 HRS	_____.____	_____.____
1684	SPV.0075 Special 4001. Obstructions Foundation Drilling	72.000 HRS	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1686	SPV.0085 Special 0003. Seeding Mixture No. 30 Special	5,291.000 LB	_____.____	_____.____
1688	SPV.0085 Special 0004. Native Pollinator Seeding Mixture No. 90A	152.000 LB	_____.____	_____.____
1690	SPV.0090 Special 0001. Maintain and Remove Temporary Precast Barrier Left in Place	1,884.000 LF	_____.____	_____.____
1692	SPV.0090 Special 0002. Concrete Barrier Type S42 Special	73,875.000 LF	_____.____	_____.____
1694	SPV.0090 Special 0003. Concrete Barrier Type S56 Special	19,508.000 LF	_____.____	_____.____
1696	SPV.0090 Special 0004. Salvage and Reinstall Fence	65.000 LF	_____.____	_____.____
1698	SPV.0090 Special 0005. Concrete Curb and Gutter 66-Inch Type D	1,894.000 LF	_____.____	_____.____
1700	SPV.0090 Special 0006. Concrete Curb and Gutter 78-Inch Type D	2,407.000 LF	_____.____	_____.____
1702	SPV.0090 Special 0007. Concrete Barrier Transition Type Parapet to V32	12.000 LF	_____.____	_____.____
1704	SPV.0090 Special 0008. Temporary Fence Chain Link 4-FT	2,300.000 LF	_____.____	_____.____
1706	SPV.0090 Special 0300. Fence Chain Link Polymer-Coated 4-FT Road Barrier	10.000 LF	_____.____	_____.____
1708	SPV.0090 Special 0800. Remove and Dispose of UPRR Track	3,187.000 LF	_____.____	_____.____
1710	SPV.0090 Special 0805. Construct 136LB ISHH CWR on Wood Ties	3,162.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1712	SPV.0090 Special 0808. Furnish 136LB ISHH Rail, Wood Ties and Other Track Material (OTM)	1,188.000 LF	_____._____	_____._____
1714	SPV.0090 Special 0810. Construct Double Inside Guard Rail	412.000 LF	_____._____	_____._____
1716	SPV.0090 Special 0820. Jack and Bore Storm Sewer, 36-Inch	156.000 LF	_____._____	_____._____
1718	SPV.0090 Special 0830. Geo-Web Underlayment	80.000 LF	_____._____	_____._____
1720	SPV.0090 Special 0910. Glare Screens Temporary	26,224.000 LF	_____._____	_____._____
1722	SPV.0090 Special 1001. Cable Aerial Aluminum 6 AWG Quadruplex	8,549.000 LF	_____._____	_____._____
1724	SPV.0090 Special 1002. Cable Aerial Aluminum 4 AWG Quadruplex	4,457.000 LF	_____._____	_____._____
1726	SPV.0090 Special 1003. Cable Aerial Aluminum 6 AWG Triplex	1,155.000 LF	_____._____	_____._____
1728	SPV.0090 Special 1004. Cable Aerial Aluminum 4 AWG Triplex	190.000 LF	_____._____	_____._____
1730	SPV.0090 Special 3001. Woven Pull Tape	364.000 LF	_____._____	_____._____
1732	SPV.0090 Special 4000. Piling Steel HP 14-Inch X 89 LB	4,275.000 LF	_____._____	_____._____
1734	SPV.0090 Special 4005. Wall Secant Pile 59.06-Inch	8,910.000 LF	_____._____	_____._____
1736	SPV.0090 Special 4006. Wall Secant Pile 59.06-Inch UPRR	3,150.000 LF	_____._____	_____._____
1738	SPV.0090 Special 4010. Handrail B-40-921	824.000 LF	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1740	SPV.0090 Special 4011. Handrail R-40-649	296.000 LF	_____.____	_____.____
1742	SPV.0090 Special 4015. Fence Chain Link Polymer-Coated 6-FT R-40-641	599.000 LF	_____.____	_____.____
1744	SPV.0090 Special 4020. Railing Tubular Screening 8-FT	321.000 LF	_____.____	_____.____
1746	SPV.0090 Special 5000. Sanitary Sewer 8-Inch PVC	141.000 LF	_____.____	_____.____
1748	SPV.0090 Special 5001. Sanitary Sewer 10-Inch PVC	497.000 LF	_____.____	_____.____
1750	SPV.0090 Special 5002. Abandoning Sanitary Sewer 10-Inch	416.000 LF	_____.____	_____.____
1752	SPV.0090 Special 8031. Precast Trench Drain	3,886.000 LF	_____.____	_____.____
1754	SPV.0090 Special 8036. Temporary Precast Trench Drain	9,785.000 LF	_____.____	_____.____
1756	SPV.0110 Special 4000. Timber Lagging	42.000 MBM	_____.____	_____.____
1758	SPV.0135 Special 0001. Field Office Special	30.000 MON	_____.____	_____.____
1760	SPV.0135 Special 0150. Vibration Monitoring	1,332.000 MON	_____.____	_____.____
1762	SPV.0165 Special 0001. Wall Modular Block Mechanically Stabilized Earth	125.000 SF	_____.____	_____.____
1764	SPV.0165 Special 4000. Temporary Shoring Railroad	2,655.000 SF	_____.____	_____.____
1766	SPV.0165 Special 4005. Precast Concrete Modular Retaining Wall	4,790.000 SF	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1768	SPV.0165 Special 4006. Precast Concrete Modular Wingwall	410.000 SF	_____.____	_____.____
1770	SPV.0165 Special 4010. Geocomposite Wall Drain	4,185.000 SF	_____.____	_____.____
1772	SPV.0165 Special 4015. Prestressed Precast Concrete Wall Panel R-40-641	3,750.000 SF	_____.____	_____.____
1774	SPV.0165 Special 4016. Prestressed Precast Concrete Wall Panel R-40-642	4,550.000 SF	_____.____	_____.____
1776	SPV.0165 Special 4020. Geocomposite Drain Board	13,177.000 SF	_____.____	_____.____
1778	SPV.0165 Special 4030. Temporary Wall Wire Faced Mechanically Stabilized Earth	368.000 SF	_____.____	_____.____
1780	SPV.0165 Special 4412. Wall Concrete Panel Mechanically Stabilized Earth R-40-412	3,699.000 SF	_____.____	_____.____
1782	SPV.0165 Special 4413. Wall Concrete Panel Mechanically Stabilized Earth R-40-413	2,985.000 SF	_____.____	_____.____
1784	SPV.0165 Special 4414. Wall Concrete Panel Mechanically Stabilized Earth R-40-414	3,034.000 SF	_____.____	_____.____
1786	SPV.0165 Special 4415. Wall Concrete Panel Mechanically Stabilized Earth R-40-415	207.000 SF	_____.____	_____.____
1788	SPV.0165 Special 4636. Wall Concrete Panel Mechanically Stabilized Earth R-40-636	7,295.000 SF	_____.____	_____.____
1790	SPV.0165 Special 4637. Wall Concrete Panel Mechanically Stabilized Earth R-40-637	7,541.000 SF	_____.____	_____.____
1792	SPV.0165 Special 4639. Wall Concrete Panel Mechanically Stabilized Earth R-40-639	13,950.000 SF	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1794	SPV.0165 Special 4640. Wall Concrete Panel Mechanically Stabilized Earth R-40-640	19,450.000 SF	_____.____	_____.____
1796	SPV.0165 Special 4642. Wall Concrete Panel Mechanically Stabilized Earth R-40-642	1,800.000 SF	_____.____	_____.____
1798	SPV.0165 Special 4645. Wall Concrete Panel Mechanically Stabilized Earth R-40-645	17,262.000 SF	_____.____	_____.____
1800	SPV.0165 Special 4646. Wall Concrete Panel Mechanically Stabilized Earth R-40-646	11,751.000 SF	_____.____	_____.____
1802	SPV.0165 Special 4647. Wall Concrete Panel Mechanically Stabilized Earth R-40-647	662.000 SF	_____.____	_____.____
1804	SPV.0165 Special 4648. Wall Concrete Panel Mechanically Stabilized Earth R-40-648	3,767.000 SF	_____.____	_____.____
1806	SPV.0180 Special 0001. Topsoil Special	291,541.000 SY	_____.____	_____.____
1808	SPV.0180 Special 0002. Removing Surface Milling Special	1,791.000 SY	_____.____	_____.____
1810	SPV.0180 Special 0003. Concrete Pavement 8-Inch Special	51,692.000 SY	_____.____	_____.____
1812	SPV.0180 Special 0004. Concrete Pavement 10.5-Inch Special	146,928.000 SY	_____.____	_____.____
1814	SPV.0180 Special 0005. Concrete Pavement 11.5-Inch Special	160,150.000 SY	_____.____	_____.____
1816	SPV.0180 Special 0106. Asphaltic Material Binder	10,838.000 SY	_____.____	_____.____
1818	SPV.0180 Special 4000. Membrane Waterproofing UPRR	870.000 SY	_____.____	_____.____
1820	SPV.0180 Special 4005. Geotextile Type DF UPRR	388.000 SY	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1822	SPV.0180 Special 4006. Geotextile Type SAS UPRR	1,023.000 SY	_____._____	_____._____
1824	SPV.0195 Special 0001. HMA Longitudinal Joint Repair	150.000 TON	_____._____	_____._____
1826	SPV.0195 Special 0002. HMA Transverse Joint Repair	60.000 TON	_____._____	_____._____
1828	SPV.0195 Special 0840. Subballast UPRR	9,887.000 TON	_____._____	_____._____
1830	SPV.0195 Special 4000. Base Aggregate Open Graded Special	5,720.000 TON	_____._____	_____._____
1832	SPV.0195 Special 4005. Excavation, Hauling, and Disposal Of Solid Waste Soil	7,560.000 TON	_____._____	_____._____
1834	SPV.0195 Special 4010. Course Aggregate Mix for Stream Bed	1,297.000 TON	_____._____	_____._____
1836	SPV.0200 Special 5000. Reconstruct MMSD Sanitary Manhole	40.000 VF	_____._____	_____._____

Section: 0001 Total: _____._____

Total Bid: _____._____

PLEASE ATTACH ADDENDA HERE

Wisconsin Department of Transportation

Division of Transportation Systems Development
Bureau of Project Development
4822 Madison Yards Way, 4th Floor South
Madison, WI 53705

Telephone: (608) 266-1631
Facsimile (FAX): (608) 266-8459

October 4, 2022

NOTICE TO ALL CONTRACTORS:

Federal Wage Rate Addendum #01

Letting of October 11, 2022

Attached is a copy of the revised WI 10 Highway Davis Bacon Prevailing Wage Rates that are included in proposals 01, 03 – 06, 09, and 13. These wage rates are effective for all proposals they are included in in the October 11, 2022 letting. The updated wage rates are dated September 16, 2022 and are effective on or after September 26, 2022.

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractors.

Sincerely,

Mike Coleman

Proposal Development Specialist
Proposal Management Section

"General Decision Number: WI20220010 09/16/2022

Superseded General Decision Number: WI20210010

State: Wisconsin

Construction Type: Highway

Counties: Wisconsin Statewide.

HIGHWAY, AIRPORT RUNWAY & TAXIWAY CONSTRUCTION PROJECTS (does not include bridges over navigable waters; tunnels; buildings in highway rest areas; and railroad construction)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at https://www.dol.gov/agencies/whd/government-contracts.

Modification Number	Publication Date
0	01/07/2022

1	01/21/2022
2	02/04/2022
3	02/25/2022
4	03/11/2022
5	03/18/2022
6	04/29/2022
7	05/13/2022
8	06/17/2022
9	07/08/2022
10	07/22/2022
11	07/29/2022
12	08/12/2022
13	09/16/2022

BRWI0001-002 06/01/2021

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 36.81	25.17

BRWI0002-002 06/01/2021

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 44.35	23.89

BRWI0002-005 06/01/2021

ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 37.73	24.15

BRWI0003-002 06/01/2021

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 37.03	24.95

BRWI0004-002 06/01/2021

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
BRICKLAYER	$ 41.30	26.03

BRWI0006-002 06/01/2021

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER	$ 37.78	24.20

BRWI0007-002 06/01/2021

GREEN, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.38	25.31

BRWI0008-002 06/01/2021

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
BRICKLAYER	$ 42.38	24.64

BRWI0011-002 06/01/2021

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 37.03	24.95

BRWI0019-002 06/01/2021

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 36.31	25.67

BRWI0034-002 06/01/2021

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.53	25.16

CARP0087-001 05/01/2016

BURNETT (W. of Hwy 48), PIERCE (W. of Hwy 29), POLK (W. of Hwys 35, 48 & 65), AND ST. CROIX (W. of Hwy 65) COUNTIES

	Rates	Fringes
Carpenter & Piledrivermen	$ 36.85	18.39

CARP0252-002 06/01/2016

ADAMS, BARRON, BAYFIELD (Eastern 2/3), BROWN, BUFFALO, BURNETT (E. of Hwy 48), CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE (except

area bordering Michigan State Line), FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE (except N.E. corner), MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwys 29 & 65), POLK (E. of Hwys 35, 48 & 65), PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST CROIX (E. of Hwy 65), TAYLOR, TREMPEALEAU, VERNON, VILAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER		
CARPENTER	$ 33.56	18.00
MILLWRIGHT	$ 35.08	18.35
PILEDRIVER	$ 34.12	18.00

CARP0252-010 06/01/2016

ASHLAND COUNTY

	Rates	Fringes
Carpenters		
Carpenter	$ 33.56	18.00
Millwright	$ 35.08	18.35
Pile Driver	$ 34.12	18.00

CARP0264-003 06/01/2016

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WAUKESHA, AND WASHINGTON COUNTIES

	Rates	Fringes
CARPENTER	$ 35.78	22.11

CARP0361-004 05/01/2018

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

	Rates	Fringes
CARPENTER	$ 36.15	20.43

CARP2337-001 06/01/2016

ZONE A: MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON

ZONE B: KENOSHA & RACINE

	Rates	Fringes
PILEDRIVERMAN		
Zone A	$ 31.03	22.69
Zone B	$ 31.03	22.69

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* ELEC0014-002 05/29/2022

ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (except Maryville, Colby, Unity, Sherman, Fremont, Lynn &

Sherwood), CRAWFORD, DUNN, EAU CLAIRE, GRANT, IRON, JACKSON, LA CROSSE, MONROE, PEPIN, PIERCE, POLK, PRICE, RICHLAND, RUSK, ST CROIX, SAWYER, TAYLOR, TREMPEALEAU, VERNON, AND WASHBURN COUNTIES

	Rates	Fringes
Electricians:	$ 38.49	22.09

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* ELEC0014-007 05/29/2022

REMAINING COUNTIES

	Rates	Fringes
Teledata System Installer	$ 29.63	3%+16.18
Installer/Technician	$ 28.50	15.92

Low voltage construction, installation, maintenance and removal of teledata facilities (voice, data, and video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area networks), LAN (local area networks), and ISDN (integrated systems digital network).

ELEC0127-002 06/01/2021

KENOSHA COUNTY

	Rates	Fringes
Electricians:	$ 43.16	30%+12.70

ELEC0158-002 05/30/2021

BROWN, DOOR, KEWAUNEE, MANITOWOC (except Schleswig), MARINETTE(Wausuakee and area South thereof), OCONTO, MENOMINEE (East of a ine 6 miles West of the West boundary of Oconto County), SHAWANO (Except Area North of Townships of Aniwa and Hutchins) COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 36.14	29.75%+10.26

ELEC0159-003 05/30/2021

COLUMBIA, DANE, DODGE (Area West of Hwy 26, except Chester and Emmet Townships), GREEN, LAKE (except Townships of Berlin, Seneca, and St. Marie), IOWA, MARQUETTE (except Townships of Neshkoka, Crystal Lake, Newton, and Springfield), and SAUK COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 43.38	23.13

ELEC0219-004 06/01/2019

FLORENCE COUNTY (Townships of Aurora, Commonwealth, Fern,

Florence and Homestead) AND MARINETTE COUNTY (Township of Niagara)

	Rates	Fringes
Electricians:		
Electrical contracts over $180,000	$ 33.94	21.80
Electrical contracts under $180,000	$ 31.75	21.73

ELEC0242-005 05/30/2021

DOUGLAS COUNTY

	Rates	Fringes
Electricians:	$ 41.37	69.25%

ELEC0388-002 05/30/2021

ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, MARATHON, MARINETTE (Beecher, Dunbar, Goodman & Pembine), MENOMINEE (Area West of a line 6 miles West of the West boundary of Oconto County), ONEIDA, PORTAGE, SHAWANO (Aniwa and Hutchins), VILAS AND WOOD COUNTIES

	Rates	Fringes
Electricians:	$ 36.22	26%+11.24

ELEC0430-002 06/01/2022

RACINE COUNTY (Except Burlington Township)

	Rates	Fringes
Electricians:	$ 45.02	24.35

ELEC0494-005 06/01/2021

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:	$ 44.39	25.67

ELEC0494-006 06/01/2021

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:	$ 37.91	22.74

ELEC0494-013 06/01/2021

DODGE (East of Hwy 26 including Chester Twp, excluding Emmet Twp), FOND DU LAC (Except Waupuin), MILWAUKEE, OZAUKEE,

MANITOWOC (Schleswig), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Sound & Communications		
Installer	$ 22.39	18.80
Technician	$ 32.49	20.26

Installation, testing, maintenance, operation and servicing of all sound, intercom, telephone interconnect, closed circuit TV systems, radio systems, background music systems, language laboratories, electronic carillion, antenna distribution systems, clock and program systems and low-voltage systems such as visual nurse call, audio/visual nurse call systems, doctors entrance register systems. Includes all wire and cable carrying audio, visual, data, light and radio frequency signals. Includes the installation of conduit, wiremold, or raceways in existing structures that have been occupied for six months or more where required for the protection of the wire or cable, but does not mean a complete conduit or raceway system. work covered does not include the installation of conduit, wiremold or any raceways in any new construction, or the installation of power supply outlets by means of which external electric power is supplied to any of the foregoing equipment or products

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ELEC0577-003 06/01/2021

CALUMET (except Township of New Holstein), GREEN LAKE (N. part including Townships of Berlin, St Marie, and Seneca), MARQUETTE (N. part including Townships of Crystal Lake, Neshkoro, Newton, and Springfield), OUTAGAMIE, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
Electricians:	$ 35.66	29.50%+10.00

ELEC0890-003 06/01/2021

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

	Rates	Fringes
Electricians:	$ 39.00	25.95%+11.17

ELEC0953-001 06/02/2019

	Rates	Fringes
Line Construction:		
(1) Lineman	$ 47.53	21.43
(2) Heavy Equipment Operator	$ 42.78	19.80
(3) Equipment Operator	$ 38.02	18.40
(4) Heavy Groundman Driver	$ 33.27	16.88
(5) Light Groundman Driver	$ 30.89	16.11
(6) Groundsman	$ 26.14	14.60

ENGI0139-005 06/01/2022

	Rates	Fringes
Power Equipment Operator		
Group 1	$ 43.27	25.95
Group 2	$ 42.77	25.95
Group 3	$ 42.27	25.95
Group 4	$ 42.01	25.95
Group 5	$ 41.72	25.95
Group 6	$ 35.82	25.95

HAZARDOUS WASTE PREMIUMS:
EPA Level ""A"" protection - $3.00 per hour
EPA Level ""B"" protection - $2.00 per hour
EPA Level ""C"" protection - $1.00 per hour

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, tower cranes, and derricks with or without attachments with a lifting capacity of over 100 tons; or cranes, tower cranes, and derricks with boom, leads and/or jib lengths measuring 176 feet or longer.

GROUP 2: Cranes, tower cranes and derricks with or without attachments with a lifting capacity of 100 tons or less; or cranes, tower cranes, and derricks with boom, leads, and/or jibs lengths measuring 175 feet or under and Backhoes (excavators) weighing 130,000 lbs and over; caisson rigs; pile driver; dredge operator; dredge engineer; Boat Pilot.

GROUP 3: Mechanic or welder - Heavy duty equipment; cranes with a lifting capacity of 25 tons or under; concrete breaker (manual or remote); vibratory/sonic concrete breaker; concrete laser screed; concrete slipform paver; concrete batch plant operator; concrete pvt. spreader - heavy duty (rubber tired); concrete spreader & distributor; automatic subgrader (concrete); concrete grinder & planing machine; concrete slipform curb & gutter machine; slipform concrete placer; tube finisher; hydro blaster (10,000 psi & over); bridge paver; concrete conveyor system; concrete pump; Rotec type Conveyor; stabilizing mixer (self-propelled); shoulder widener; asphalt plant engineer; bituminious paver; bump cutter & grooving machine; milling machine; screed (bituminous paver); asphalt heater, planer & scarifier; Backhoes (excavators) weighing under 130,000 lbs; grader or motor patrol; tractor (scraper, dozer, pusher, loader); scraper - rubber tired (single or twin engine); endloader; hydraulic backhoe (tractor type); trenching machine; skid rigs; tractor, side boom (heavy); drilling or boring machine (mechanical heavy); roller over 5 tons; percussion or rotary drilling machine; air track; blaster; loading machine (conveyor); tugger; boatmen; winches & A-frames; post driver; material hoist.

GROUP 4: Greaser, roller steel (5 tons or less); roller (pneumatic tired) - self propelled; tractor (mounted or towed compactors & light equipment); shouldering machine; self- propelled chip spreader; concrete spreader; finishing machine; mechanical float; curing machine; power subgrader; joint sawer (multiple blade) belting machine; burlap machine; texturing machine; tractor endloader (rubber tired) - light; jeep digger; forklift; mulcher; launch operator; fireman, environmental burner

GROUP 5: Air compressor; power pack; vibrator hammer and extractor; heavy equipment, leadman; tank car heaters; stump chipper; curb machine operator; Concrete proportioning plants; generators; mudjack operator; rock breaker; crusher or screening plant; screed (milling machine); automatic belt conveyor and surge bin; pug mill operator; Oiler, pump (over 3 inches); Drilling Machine Tender, day light machine

GROUP 6: Off-road material hauler with or without ejector.

IRON0008-002 06/13/2022

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:

	Rates	Fringes
IRONWORKER	$ 41.00	28.95

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/01/2021

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER	$ 40.57	28.40

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/05/2022

ADAMS, COLUMBIA, CRAWFORD, DANE, DODGE, FLORENCE, FOREST, GRANT, GREENE, (Excluding S.E. tip), GREEN LAKE, IOWA, JEFFERSON, JUNEAU, LA CROSSE, LAFAYETTE, LANGLADE, MARATHON, MARQUETTE, MENOMINEE, MONROE, PORTAGE, RICHLAND, ROCK (Northern area, vicinity of Edgerton and Milton), SAUK, VERNON, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
IRONWORKER	$ 39.00	28.58

IRON0498-005 06/01/2021

GREEN (S.E. 1/3), ROCK (South of Edgerton and Milton), and WALWORTH (S.W. 1/3) COUNTIES:

	Rates	Fringes
IRONWORKER	$ 41.37	44.41

IRON0512-008 05/01/2022

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 41.00	33.11

IRON0512-021 05/01/2022

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA, PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 36.94	33.11

LABO0113-002 06/01/2022

MILWAUKEE AND WAUKESHA COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 32.65	23.09
Group 2	$ 32.80	23.09
Group 3	$ 33.00	23.09
Group 4	$ 33.15	23.09
Group 5	$ 33.30	23.09
Group 6	$ 29.14	23.09

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagperson; traffic control person

LABO0113-003 06/01/2022

OZAUKEE AND WASHINGTON COUNTIES

	Rates	Fringes

LABORER

Group 1	$ 31.90	23.09
Group 2	$ 32.00	23.09
Group 3	$ 32.05	23.09
Group 4	$ 32.25	23.09
Group 5	$ 32.10	23.09
Group 6	$ 28.99	23.09

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated);

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson and Traffic Control Person

LABO0113-011 06/01/2022

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 31.71	23.09
Group 2	$ 31.86	23.09
Group 3	$ 32.06	23.09
Group 4	$ 32.03	23.09
Group 5	$ 32.36	23.09
Group 6	$ 28.85	23.09

LABORERS CLASSIFICATIONS:

GROUP 1: General laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagman; traffic control person

LABO0140-002 06/01/2022

ADAMS, ASHLAND, BARRON, BAYFIELD, BROWN, BUFFALO, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DOUGLAS, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IRON, JACKSON, JUNEAU, IOWA, JEFFERSON, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST. CROIX, TAYLOR, TREMPEALEAU, VERNON, VILLAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 36.42	18.68
Group 2	$ 36.52	18.68
Group 3	$ 36.57	18.68
Group 4	$ 36.77	18.68
Group 5	$ 36.62	18.68
Group 6	$ 33.05	18.68

LABORER CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bitminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator, Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk and Pavement); Strike Off Man

GROUP 4: Line and Grade Secialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson; Traffic Control

LABO0464-003 06/01/2022

DANE COUNTY

	Rates	Fringes
LABORER		
Group 1	$ 36.70	18.68
Group 2	$ 36.80	18.68

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     Group 3.....................$ 36.85            18.68
     Group 4.....................$ 37.05            18.68
     Group 5.....................$ 36.90            18.68
     Group 6.....................$ 33.05            18.68

LABORERS CLASSIFICATIONS:

  GROUP 1:  General Laborer; Tree Trimmer; Conduit Layer;
  Demolition and Wrecking Laborer; Guard Rail, Fence, and
  Bridge Builder; Landscaper; Multiplate Culvert Assembler;
  Stone Handler; Bituminous Worker (Shoveler, Loader, and
  Utility Man); Batch Truck Dumper or Cement Handler;
  Bituminious Worker (Dumper, Ironer, Smoother, and Tamper);
  Concrete Handler

  GROUP 2:  Air Tool Operator; Joint Sawer and Filler
  (Pavement); Vibrator or Tamper Operator (Mechanical Hand
  Operated); Chain Saw Operator; Demolition Burning Torch
  Laborer

  GROUP 3:  Bituminous Worker (Raker and Luteman); Formsetter
  (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4:  Line and Grade Specialist

GROUP 5:  Blaster; Powderman

GROUP 6:  Flagperson and Traffic Control Person

----------------------------------------------------------------
 PAIN0106-008 05/01/2022

ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES

                                   Rates          Fringes

Painters:
     New:
      Brush, Roller..............$ 33.99            22.70
      Spray, Sandblast, Steel....$ 34.59            22.70
     Repaint:
      Brush, Roller..............$ 33.09            22.70
      Spray, Sandblast, Steel....$ 32.49            22.70
----------------------------------------------------------------
 PAIN0108-002 06/01/2021

RACINE COUNTY

                                   Rates          Fringes

Painters:
     Brush, Roller..............$ 36.08            20.36
     Spray & Sandblast..........$ 37.52            23.27
----------------------------------------------------------------
 PAIN0259-002 05/01/2008

BARRON, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK,
SAWYER, ST. CROIX, AND WASHBURN COUNTIES


                                   Rates          Fringes

PAINTER.....................$ 24.11            12.15
----------------------------------------------------------------
 PAIN0259-004 05/01/2015
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BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
PAINTER	$ 22.03	12.45

PAIN0781-002 06/01/2021

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Painters:		
Bridge	$ 36.70	24.50
Brush	$ 35.95	24.50
Spray & Sandblast	$ 36.70	24.50

PAIN0802-002 06/01/2021

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND, ROCK, AND SAUK COUNTIES

	Rates	Fringes
PAINTER		
Brush	$ 29.98	18.78

PREMIUM PAY:
Structural Steel, Spray, Bridges = $1.00 additional per hour.

PAIN0802-003 06/01/2021

ADAMS, BROWN, CALUMET, CLARK, DOOR, FOND DU LAC, FOREST, GREEN LAKE, IRON, JUNEAU, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, PORTAGE, PRICE, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WAUSHARA, WAUPACA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
PAINTER	$ 29.98	18.78

PAIN0934-001 06/01/2021

KENOSHA AND WALWORTH COUNTIES

	Rates	Fringes
Painters:		
Brush	$ 36.52	23.27
Spray	$ 37.52	23.27
Structural Steel	$ 36.67	23.27

PAIN1011-002 06/06/2021

FLORENCE COUNTY

	Rates	Fringes

Painters:.....$ 26.71 14.38

PLAS0599-010 06/01/2021

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
Area 1	$ 42.06	20.87
Area 2 (BAC)	$ 37.73	23.80
Area 3	$ 38.74	22.46
Area 4	$ 38.59	22.66
Area 5	$ 38.16	22.98
Area 6	$ 34.94	26.36

AREA DESCRIPTIONS

AREA 1: BAYFIELD, DOUGLAS, PRICE, SAWYER, AND WASHBURN COUNTIES

AREA 2: ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

AREA 3: BUFFALO, CRAWFORD, EAU CLAIRE, JACKSON, JUNEAU, LA CROSSE MONROE, PEPIN, PIERCE, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

AREA 4: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA 5: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA 6: KENOSHA AND RACINE COUNTIES

TEAM0039-001 06/01/2021

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles	$ 32.57	23.81
3 or more Axles; Euclids, Dumptor & Articulated, Truck Mechanic	$ 32.72	23.81
WELL DRILLER	$ 16.52	3.70

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide

employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007

in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

Wisconsin Department of Transportation

Division of Transportation Systems Development
Bureau of Project Development
4822 Madison Yards Way, 4th Floor South
Madison, WI 53705

Telephone: (608) 266-1631
Facsimile (FAX): (608) 266-8459

September 23, 2022

NOTICE TO ALL CONTRACTORS:

Proposal #03:

1229-04-71, WISC 2023001
City Glendale, N Port Washington Rd
Bender Rd to W Daphne Rd
Local Street
Milwaukee County

1229-04-72, WISC 2023002
I-43 North-South Freeway
Union Pacific RR Bridge B-40-921
IH-43
Milwaukee County

1229-04-73, WISC 2023003
I-43 North-South Freeway
Bender Rd to Brown Deer Rd
IH-43
Milwaukee County

1229-04-77, N/A
C Glendale, Green Bay Road
Intersection with Range Line Rd
STH 57
Milwaukee County

Letting of October 11, 2022

This is Addendum No. 01, which provides for the following:

Special Provisions:

Revised Special Provisions	
Article No.	Description
5	Prosecution and Progress
8	Holiday and Special Event Work Restrictions
56	Traffic Meetings and Traffic Control Scheduling
75	Remove Traffic Signals, Item 204.9060.S
94	QMP Drilled Shafts
105	Sheet Membrane Waterproofing, Item 516.0600.S
125	No Trespassing Signs UPRR
130	Traffic Control
139	Electrical Service Meter Breaker Pedestal, Item 656.0200.
143	Lamp, Ballast, LED, Switch Disposal by Contractor, Item 659.5000.S
144	Temporary Traffic Signal for Intersections, Item 661.0200.
186	Emergency Response to Traffic Involving Concrete Barrier Temporary, Item SPV.0060.0940
187	Emergency Response to Traffic Involving Temporary Crash Cushion, Item SPV.0060.0945

Added Special Provisions	
Article No.	Description
315	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil, Item 205.0501.S.
316	Emergency Response to Pavement Repairs, Item SPV.0060.0935.
317	Temporary Fence Chain Link 4-FT, Item SPV.0090.0008

Deleted Special Provisions	
Article No.	Description
170	Mobilizations Emergency Pavement Repair, Item SPV.0060.0120

Schedule of Items:

Revised Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
205.0100	Excavation Common	CY	746,794	158	746,952
505.0400	Bar Steel Reinforcement HS Structures	LB	2,087,150	510	2,087,660
505.0600	Bar Steel Reinforcement HS Coated Structures	LB	975,900	2,140	978,040
608.0415	Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	LF	933	128	1061
608.0418	Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	LF	4043	119	4162
608.3015	Storm Sewer Pipe Class III-A 15-Inch	LF	747	-43	704
608.3036	Storm Sewer Pipe Class III-A 36-Inch	LF	782	40	822
611.0535	Manhole Covers Type J-Special	EACH	47	3	50
611.0624	Inlet Covers Type H	EACH	200	2	202
611.0642	Inlet Covers Type MS	EACH	105	-2	103
611.1004	Catch Basin 4-FT Diameter	EACH	70	3	73
611.1006	Catch Basin 6-FT Diameter	EACH	13	2	15
611.2004	Manholes 4-FT Diameter	EACH	10	1	11
611.2007	Manholes 7-FT Diameter	EACH	32	-2	30
611.3902	Inlets Median 2 Grate	EACH	46	-1	45
616.0206	Fence Chain Link 6-FT	LF	8,758	13,778	22,536
616.0700.S	Fence Safety	LF	14,000	46,000	60,000
628.1504	Silt Fence	LF	43,602	8	43,610
628.1520	Silt Fence Maintenance	LF	43,602	8	43,610
628.2006	Erosion Mat Urban Class I Type A	SY	123,620	-138	123,482
643.0900	Traffic Control Signs	DAYS	362,211	1,922	364,133
655.0515	Electrical Wire Traffic Signals 10 AWG	LF	51,201	-1,550	49,651
657.0375	Poles Type A	EACH	72	1	73
657.0381	Poles Type F	EACH	4	-1	3
671.0132	Conduit HDPE 3-Duct 2-Inch	LF	23,955	-1,490	22,465
673.0105	Communication Vault Type 1	EACH	28	-1	27
678.0072	Install Fiber Optic Cable Outdoor Plant 72-Ct	LF	26,850	-4,345	22,505
678.0200	Fiber Optic Splice Enclosure	EACH	10	-1	9
678.0300	Fiber Optic Splice	EACH	440	-78	362
SPV.0035.0001	Roadway Embankment	CY	233,825	-887	232,938
SPV.0060.0110	Reconnect Storm Sewer	EACH	243	1	244
SPV.0060.1010	Concrete Base, Type B	EACH	72	1	73

SPV.0085.0003	Seeding Mixture No. 30 Special	LB	5,291	-6	5,285
SPV.0090.0008	Temporary Fence Chain Link 4-FT	LF	2,300	785	3,085
SPV.0180.0001	Topsoil Special	SY	291,541	-138	291,403

Added Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
205.0501.S	Excavation, Hauling, and Disposing of Petroleum Contaminated Soil	TON	0	3.4	3.4
646.3555	Marking Line Grooved Contrast Permanent Tape 8-Inch	LF	0	14,351	14,351
SPV.0060.0935	Emergency Response to Pavement Repairs	EACH	0	30	30

Deleted Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
611.0654	Inlet Covers Type V	EACH	1	-1	0
646.3050	Marking Line Grooved Permanent Tape 8-Inch	LF	14,351	-14,351	0
SPV.0060.0120	Mobilizations Emergency Pavement Repair	EACH	30	-30	0

Plan Sheets:

Revised Plan Sheets	
Plan Sheet	Plan Sheet Title (brief description of changes to sheet)
6	General Notes – updated abbreviations
144	Removal Plan – note added for Lannon Stone wall removal
215	Plan Details – note added to reference light pole base detail
292-294	Plan Details – Slope Intercepts in front of high school updated
450	Paving Grades – Driveway grades updated
451-453	Paving Grades – Slope Intercepts in front of high school updated
528	FTMS – updated notes
529	FTMS – updated notes
542-543	Contour Map – Jean Nicolet contours updated to match into surface by others
637-638	Erosion Control – EC devices updated on Jean Nicolet Rd
767-768	Storm Sewer – Removed ditch inlet along SB Jean Nicolet
797-799	Storm Sewer – Water Main Relocation Conflict with Storm Sewer on Port Washington Rd
838-840	Storm Sewer Construction Details – Updated In-Line Detention Manhole Details
953	Lighting Plan – Type S42A Base Station table added
959	Lighting Plan – UPRR alignment updated
981-982	Lighting Plan – Pole type updated
1028, 1033	Temporary Traffic Signal Plan – Engineer stamp and signature added

1078, 1129	Traffic Signal Plan – Engineer stamp and signature added
1132	Cable Routing – Engineer stamp and signature added
1141	Pavement Marking – Updated legend (8” Grooved Contrast Tape)
1222, 1224, 1230, 1232, 1258, 1260, 1266, 1268, 1291, 1299, 1301, 1333, 1364, 1387, 1390, 1419, 1422, 1431, 1435, 1439, 1442, 1459, 1462, 1481, 1485, 1488, 1514	Traffic Control – “Work Zone – No Handheld Phones While Driving” sign added
1570	Alignment Plan – UPRR alignment updated
1605	Miscellaneous Quantities – “Excavation, Hauling, and Disposing of Petroleum Contaminated Soil” table added
1615-1620, 1622	Miscellaneous Quantities - Water Main Relocation Conflict with Storm Sewer on Port Washington Rd
1626, 1633	Miscellaneous Quantities – bid item name changed
1654	Miscellaneous Quantities – Engineer stamp and signature added
1686	Miscellaneous Quantities – “Excavation Common” and “Roadway Embankment” updated for Jean Nicolet grading.
1739, 1740, 1742, 1771, 1772	Miscellaneous Quantities - Removed ditch inlet along SB Jean Nicolet
1805	Miscellaneous Quantities – “Fence Chain Link 6-FT”, “Fence Safety”, and “Temporary Fence Chain Link 4-FT” quantities increased
1806	Miscellaneous Quantities – bid item name changed
1814	Miscellaneous Quantities – Erosion Control quantities updated
1820	Miscellaneous Quantities – Restoration quantities updated
1822, 1823	Miscellaneous Quantities – changed bid item from “grooved” to “grooved contrast”

1826, 1827	Miscellaneous Quantities – “Traffic Control Signs” quantity increased
1836	Miscellaneous Quantities – bid item names changed
1841-1842	Miscellaneous Quantities – Communication Vault and FO Splice updates
1846-1848	Miscellaneous Quantities – Cable quantity updates
1862	Miscellaneous Quantities – Lighting Pole and Base updates
1865	Miscellaneous Quantities – Lighting Pole and Base updates
2040, 2048, 2074, 2075, 2086, 2101, 2102, 2106	Plan and Profile – UPRR alignment updated
2077	Plan and Profile - Slope Intercepts in front of high school updated
2628, 2645, 2646, 2647, 2648, 2655, 2659, 2661, 2663, 2665	Structures – Rebar details updated
3131	Earthwork – Earthwork table updated for Jean Nicolet grading
3709-3717	Cross Sections – Jean Nicolet updated to tie into surface by others

Added Plan Sheets	
Plan Sheet	Plan Sheet Title (brief description of why sheet was added)
109A – 109E	Construction Details – ERUV Construction Detail added
120A	Construction Details – Temporary Chain Link Fence added at hotel properties
953A	Lighting Plans – Concrete Base Type S42 Special detail added
953B	Lighting Plans – Concrete Base Type S42 detail added
2403A	Sign Details – “Work Zone – No Handheld Phones While Driving”

Deleted Plan Sheets	
Plan Sheet	Plan Sheet Title (brief description of why sheet was deleted)
539	FTMS – removal of conduit

Other

Time Chart has been updated (2023 construction season) to reflect clearing/grubbing restrictions and to match language in special provisions. It can be found at the following location:

https://wisdot.box.com/s/f4wwaf04rsjmqcx76tlx3ftoz7waghdk or can be accessed on the HCCI October bid letting page under Supplemental Information.

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

Mike Coleman

Proposal Development Specialist
Proposal Management Section

ADDENDUM NO. 01

1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

September 23, 2022

Special Provisions

5. Prosecution and Progress.

Replace the second through fourth paragraph with the following:

2023 construction that includes final or temporary pavement marking, traffic shifts or any portion of a permanent or temporary full pavement structure cannot begin until March 13 unless approved by the engineer. Construction in 2024 that includes final or temporary pavement marking, traffic shifts or any portion of a permanent or temporary full pavement structure cannot begin until March 11 unless approved by the engineer.

Provide the start date to the engineer in writing within a month after executing the contract but at least 14 calendar days before the preconstruction conference. Upon approval, the engineer will issue the notice to proceed within 10 calendar days before the approved start date.

To revise the start date, submit a written request to the engineer at least two weeks before the intended start date. The engineer will approve or deny that request based on the conditions cited in the request and its effect on the department's scheduled resources.

Replace the first sentence in the sixth paragraph with the following:

Expect early Spring and late Fall weather work for clearing and grubbing, grading/excavation of frozen ground, high ground water, dewatering during those months, and mitigation efforts for high water table elevations shall not be considered adverse weather delays to construction.

Replace entire subsection titled **Bender Road** *under section titled* **J. Local Street Closure Restrictions** *with the following:*

Bender Road

The east leg and the west leg of the Bender Road/N Port Washington Road intersection, as shown in Stages 2A, can close offsetting for a one-time period not to exceed 60 consecutive calendar days to allow for the reconstruction of the Bender Road and Port Washington Road intersection. Closures of the east leg and west leg of the intersection shall not occur at the same time and shall be offset within the 60 consecutive calendar day window.

Replace entire subsection titled **Range Line Road** *under section titled* **J. Local Street Closure Restrictions** *with the following:*

Range Line Road

Range Line Road may be closed north of Green Bay Road as shown in Stage 1A Traffic Control plans for a one time period not to exceed 21 consecutive calendar days to allow for construction of Range Line Road north of Green Bay Road. Notify Therese Gripentrog at Milwaukee County Parks, (414) 257-6242 or therese.gripentrog@milwaukeecountywi.gov and Silverado North Shore Memory Care Community 14 calendar days prior to the closure.

Range Line Road may be closed south of Green Bay Road as shown in Stage 1A Traffic Control plans for a one time period not to exceed 21 consecutive calendar days to allow for construction of Range Line Road

south of Green Bay Road. Notify Therese Gripentrog at Milwaukee County Parks, (414) 257-6242 or therese.gripentrog@milwaukeecountywi.gov and Silverado North Shore Memory Care Community 14 calendar days prior to the closure.

The closure of Range Line Road north of Green Bay Road and the closure of Range Line Road south of Green Bay Road shall be offsetting and may not occur at the same time as shown in the Stage 1A Traffic control plans.

Add the following under section titled **L. Interim Completions***:*

L12. Interim Completion of Work: Fairfield Inn & Suites Parking Lot (155 Calendar Days)

Complete all work required to reopen the Fairfield Inn & Suites Parking Lot in Stage 2A within 155 consecutive days. Work completed includes construction of retaining wall footings, soldier piles, secant piles, parapet, and all work on R-40-641 requiring access from above.

If the contractor fails to complete the work necessary to fully reopen the Fairfield Inn & Suites Parking Lot within 155 calendar days, the department will assess the contractor $1,100 in interim liquidated damages for each calendar day the contract work remains incomplete beyond the 155 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the parking lot remains closed beyond 12:01 AM.

Replace entire section titled **O. Northern Long-eared Bat (Myotis septentrionalis)** *with the following:*

O. Northern Long-eared Bat (Myotis septentrionalis)

Northern long-eared bats (NLEB) have the potential to inhabit the project limits because they roost in trees, bridges and culverts. Roosts may not have been observed on this project, but conditions to support the species exist. The species and all active roosts are protected by the Federal Endangered Species Act. If an individual bat or active roost is encountered during construction operations, stop work and notify the engineer and the WisDOT Regional Environmental Coordinator (REC).

Ensure all operators, employees, and subcontractors working in areas of known or presumed bat habitat are aware of environmental commitments and avoidance and minimization measures (AMMs) to protect both bats and their habitat.

Direct temporary lighting, if used, away from wooded areas during the bat active season: April 1 to October 31, both dates inclusive. To avoid adverse impacts upon the NLEBs, no tree clearing is allowed between April 1 and October 31, both dates inclusive.

If the required tree clearing is not completed by March 31, the department will suspend all tree clearing and associated work directly impacted by clearing. The department will issue a notice to proceed with clearing and associated work directly impacted by clearing after consulting with the United States Fish and Wildlife Service (USFWS).

Tree clearing is limited to that which is specified in the plans. If additional trees with a 3-inch or greater diameter at breast height (dbh) need to be removed, no tree clearing shall occur without prior approval from the engineer, following coordination with the WisDOT REC. Additional tree removal beyond the area originally specified will require consultation with the USFWS and may require a bat presence/absence or visual emergency survey. Notify the engineer if additional clearing cannot be avoided to begin coordination with the WisDOT REC. The WisDOT REC will initiate consultation with the USFWS and determine if a survey is necessary. Submit a schedule and description of clearing operations with the ECIP 14 days prior to any clearing operations. The department will determine, based on schedule and scope of work, what additional erosion control measures shall be implemented prior to the start of clearing operations, and list those additional measures in the ECIP.

8. Holiday and Special Event Work Restrictions.

Add the following Holiday Restrictions to the list:

- From noon Wednesday, November 23, 2022 to 6:00 AM Monday, November 28, 2022 for Thanksgiving;
- From noon Friday, December 23, 2022 to 6:00 AM Wednesday, December 28, 2022 for Christmas;
- From noon Friday, December 30, 2022 to 6:00 AM Tuesday, January 3, 2023 for New Year's Day;

Replace the second paragraph under section titled **Freeway Special Event Restrictions** *with the following:*

During Green Bay Packer home games, no NB lane closures will be allowed from four hours prior to the event to the start time of the event. No SB lane closures will be allowed from the start of the event to four hours after the conclusion of the event.

56. Traffic Meetings and Traffic Control Scheduling.

Replace the first three paragraphs with the following:

Every Thursday by 10:00 AM, submit a detailed proposed 2-week look-ahead traffic closure schedule to the engineer. Type the detailed proposed 2-week look-ahead closure schedule into an Excel spreadsheet provided by the engineer. Enter information such as closure dates, duration, work causing the closure and detours to be used. Also enter information such as ongoing long-term closures, emergency contacts and general 2-month look-ahead closure information into the excel spreadsheet.

Meet with the engineer between 11:30 AM - 12:00 PM on Thursdays at the project field office to discuss and answer questions on the proposed schedule. Edit, delete and add closures to the detailed proposed 2-week look-ahead schedule, as directed by the engineer, so that proposed closures meet specification requirements. Other edits, deletions or additions unrelated to meeting specification requirements may also be agreed upon with the engineer during the 11:30 AM meeting.

Every Thursday at 2:00 PM, or as scheduled by the engineer, attend a weekly traffic meeting. The meeting will bring local agencies, project stakeholders, owner managers, owner engineers, contractors, document control and construction engineering personnel together to discuss traffic staging, closures and general impacts. Upon obtaining feedback from the meeting attendees, edit, delete and add information to the detailed 2-week look-ahead closure schedule, as needed. Submit the revised 2-week look-ahead to the engineer.

75. Remove Traffic Signals Port Wash Rd & Bender Rd, Item 204.9060.S.3201; Remove Traffic Signals IH 43 Ramps & Good Hope Rd, Item 204.9060.S.3301; Remove Traffic Signals Good Hope Rd & Port Washington Rd, Item 204.9060.S.3303; Remove Traffic Signals Brown Deer Rd & CTH W, Item 204.9060.3305.

Replace paragraph four and five with the following:

Notify the department's Electrical Field Unit at (414) 266-1170 at least five (5) working days prior to the removal of the traffic signals at IH 43 Ramps & Good Hope Rd and STH 32/Brown Deer Rd & CTH W/Port Washington Rd. Complete the removal work as soon as possible following shut down of the equipment.

Notify Daniel Murphy, Daniel.Murphy@milwaukeecountywi.gov and the project engineer via email at least five working days prior to the removal of the traffic signals at Good Hope Rd & Port Washington Rd. A Milwaukee County representative shall be on site for the signal shut down. Contractor shall not remove existing traffic signal equipment until the engineer inspects and approves temporary traffic signals. Complete the removal work as soon as possible following the shutdown of this equipment. Removal of emergency vehicle preemption heads shall be paid for as a separate item.

94. QMP Drilled Shafts.

A General

Replace the second sentence under section titled **A General** *with the following:*

This specification applies to all drilled shaft concrete placed under the following bid items:

SPV.0090.4005	Wall Secant Pile 59.06-Inch
SPV.0090.4006	Wall Secant Pile 59.06-Inch UPRR
SPV.0060.4030	Trial Wall Panel Secant Pile 59.06-Inch
SPV.0060.4031	Trial Wall Panel Secant Pile 59.06-Inch UPRR

105. Sheet Membrane Waterproofing, Item 516.0600.S.

Replace entire article language with the following:

A Description

This special provision describes preparing the surface, furnishing and installing a primer, waterproofing membrane, and hot rubberized sealer or mastic, or both, on the bridge decks or box culverts to be overlaid with asphaltic overlay as the plans show.

B Materials

B.1 Waterproofing System

For bridge decks to be overlaid with asphaltic overlay or buried structures with a minimum earth cover of less than 6” between the waterproofing membrane and the asphaltic overlay, select a membrane from the Sheet Membrane Waterproofing for Asphalt Overlay Applications Approved Product List (APL), or furnish a waterproofing system meeting the requirements as defined in the table.

Provide a material in the waterproofing system that is specifically designed for use with an asphaltic overlay. The membrane shall consist of a cold-applied, self-adhering membrane incorporating a heat resistant woven or non-woven fabric or fiberglass reinforcing laminated in between layers of polymer modified bitumen or SBS modified rubberized asphalt. The membrane shall have a release film, polyester or polyethylene on the down side and may have a thin spun bonded open weave polyester fabric on the up side that will bond with the asphaltic overlay; yet will permit driving rubber-tired trucks, pavers and other construction vehicles on the membrane covered bridge deck or box culvert top slab. Provide a composite sheet membrane with the following properties:

Property	Test Method	Specific Value
Width		36 inch min.
Tensile Strength	ASTM D 412, ASTM D882, or ASTM 1000	50 lb/in or 700 psi min.
Thickness		60 mils to 80 mils
Puncture Resistance	ASTM E 154	40 lb. min.
Permeance	ASTM E 96, Method B	0.05 US Perms max.
Low Temperature Pliability	ASTM D 146, 1-inch Mandrel @ -25° F Or ASTM D1970	Unaffected
Water Absorption	ASTM D570, 72 hr.	0.25% max.
Peel Adhesion	ASTM D 903	5 lb/in width min.
Compound Softening Point	ASTM D 36	210° F ± 20° F

Provide rubberized asphalt compound containing not more than 15% inorganic residue or filler material.

Provide primer, mastic and/or hot rubberized asphalt sealer conforming to the specified properties required by the manufacturer of the waterproofing membrane.

B.2 Materials Certification for Product Not on APL

Waterproofing products not on the APL are required to provide material certification.

Before membrane approval for initial submittals and/or upon reformulation of membrane material compounds, submit to the engineer a notarized certification by an independent test laboratory stating that the materials conform to the requirements of these specifications. The certification shall include or have attached specific results of tests performed on the material supplied. Samples of any material for testing may be required by the engineer.

C Construction

C.1 Application Methods

Apply materials in strict accordance with the manufacturer's instructions. In order to install the waterproofing membrane, the deck or buried structure temperature shall be a minimum of 45° F and rising. Before applying the system, become acquainted with the materials specified and their handling characteristics and become thoroughly familiar with the construction procedures recommended by the manufacturer. Furnish a copy of the recommended procedures to the engineer. To establish procedures for maintaining optimum working conditions and to coordinate work related to adjacent construction, hold a pre-installation conference with a manufacturer's representative, the engineer, and other affected contractors before starting construction. To provide quality assurance that the membrane has been properly installed, a manufacturer's representative familiar with the membrane installation procedures shall be present during placement of the membrane.

Clean and make free of asphaltic patches, fast setting concrete patches, and all spalled, unsound or disintegrated areas of concrete the entire deck area of the structures being overlaid including curbs and parapets. Provide a minimum cure time of three days for repaired areas before resuming construction operations on the deck, and provide a minimum cure time of seven days before placing the primer. Repairing these areas with concrete masonry deck patching, concrete surface repair or curb repair will be paid for separately. Before placing the primer prepare the surface of the entire deck surface areas of the structures by shot blast cleaning.

The shot blast cleaning shall include the vertical face of the curbs or parapets to the height of the specified finish pavement surface and elevation. The shot blasting machine used for this procedure shall be capable of propelling steel shot against the deck surface in a uniform method to remove all foreign material and loose

concrete. The shot blasting operation shall include collection and disposal of used steel shot and dust. As per manufacturer's recommendations, all pavement-marking lines within the cleaning area shall be sufficiently removed to prevent bleeding through the primer. After shot blasting operations, remove by sweeping, compressed air blasting, pressure washing with water or by other satisfactory means any foreign material remaining on the concrete deck. The deck shall be clean, dry and free from mud, dirt, sand, oil or grease and any other contaminants before application of the primer. No vehicles or equipment will be permitted on the concrete deck after surface preparation except those necessary for the installation of the waterproofing membrane. The engineer will inspect the concrete deck before the application of the primer. Do not begin application of either the primer or membrane until after the engineer grants approval.

To coat all surfaces of the deck, curb and/or parapet that will be covered with the membrane, apply primer uniformly as recommended by the manufacturer. Use roller, brush or spray to apply primer to the surfaces. If spraying is used, an approved method of protecting the environment is required.

Allow the primer to dry until tack free (approximately forty-five minutes) before applying the membrane. Apply primer only to an area that will be covered with the membrane within the same calendar day. If the surface of the concrete deck becomes contaminated, clean and reprime the area.

Apply primer on the curb faces, raised deck drains and expansion joints to the top of the proposed asphaltic overlay. Take care to ensure that all inside corners are coated with primer.

After the primer has dried to a tack free condition, apply one layer of membrane to the deck starting on the low side edge.

To form a bond with the primed deck, remove the release film from the membrane on the tacky side while the membrane is rolled face down. Apply the membrane by hand methods or by using mechanical applicators. Overlap a minimum of 2.5 inches at the edges of each strip and overlap the membrane in such a manner to provide a shingling effect toward the low side of the deck cross section. Overlap a minimum of 5 inches at the ends of each strip of membrane and overlap the membrane in such a manner to provide a shingling effect toward the lower side of the deck profile. Roll the entire membrane surface with a rubber tire roller to ensure firm and uniform contact with the primed surface. Use special care to ensure that the membrane is uniformly adhered to the concrete and that the entire membrane is free of wrinkles, air bubbles, and other placement defects. In the event bubbles or blisters do form under the membrane, puncture the bubbles or blisters with a sharp pointed instrument such as an awl and press the membrane firmly into contact with the deck. Repair any membrane punctures, tears, holes, and misaligned or inadequate seams with a patch of waterproofing membrane sized as required to ensure that the membrane is watertight. Apply membrane flashing to raised deck drains and expansion joints and cut, fit and seal the membrane flashing with mastic or by heat sealing.

Apply the primer and membrane to an area at least 6 inches wider than will be paved with asphalt to provide a lap with subsequent application of primer and membrane when required in order to accommodate traffic control staging. Cover the inside corners of curbs or parapets and all other perimeter edges with narrow strips (flashing strips of approximately 12 inches), hot rubberized sealer, or mastic according to the manufacturer's guidelines. As an additional method of ensuring a watertight bond, all terminating edges, transverse overlaps and longitudinal overlaps may be heated with a propane torch to soften the top mat and fuse the surfaces together.

The applicator foreman or leadworker shall be certified by the manufacturer of the waterproofing membrane as approved applicators, and shall be present during all applications.

C.2 Overlaying the Membrane with Asphaltic Overlay

Construct the asphaltic overlay according to scheduling requirements elsewhere in the contract. Cover all exposed membrane with the specified asphaltic mix within five days after installation. Only rubber-tired construction vehicles shall be permitted on the membrane. Use caution not to turn the tires when a vehicle is stationary. To prevent tearing the membrane, avoid sudden starts, stops, accelerations, or decelerations. Chemical solvents, gasoline, diesel fuel, mineral spirits, etc. or other deleterious substances shall not be spilled or leaked onto the membrane. Before covering the membrane with asphaltic overlay, clean the membrane of mud, dirt, sand, oil, grease, or any other contaminants, and dry the membrane. Patch contaminated areas as required by the engineer. When required to accommodate traffic control staging, the construction of the asphaltic overlay shall stay at least 6 inches away from the terminating edge of the membrane to provide for overlap.

The placement temperature of the asphaltic overlay shall be between 300° F and 350° F. Do not place asphaltic overlay on the membrane outside of this temperature range. The temperature of the uncompacted mat of asphaltic concrete shall not fall below 280° F before rolling. The thickness of the asphaltic overlay layers shall be as the plans show; the initial layer shall have a minimum compacted thickness of 1½ inches. The membrane applicator contractor shall have a minimum of one employee present during all asphaltic overlay paving operations to ensure that all necessary membrane repairs will be accomplished.

D Measurement

The department will measure Sheet Membrane Waterproofing for Asphalt Overlays, installed according to the contract and accepted, in area by the square yard. Measurement shall be based on the horizontal distance between the face of the curbs or parapets and the horizontal length of membrane installed. Any material specified to be applied up the face of the curb or parapet shall not be included in the measured quantity.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
516.0600.S	Sheet Membrane Waterproofing for Asphalt Overlays	SY

Payment is full compensation for furnishing and placing the primer, membrane, mastic, and hot rubberized asphalt sealer, for preparing the surface, and placing all strips of membranes.

125. No Trespassing Signs UPRR.

Replace entire section titled **D Measurement** *with the following:*

D Measurement

No Trespassing Signs UPRR will not be measured separately for payment and will be considered included in the work for the item Concrete Masonry Bridges UPRR.

Replace entire section titled **D Measurement** *with the following:*

E Payment

Costs for fabricating, delivering, and installing signs under this special provision are incidental to Concrete Masonry Bridges UPRR.

130. Traffic Control.

Insert the following paragraph after "Supplement standard spec 643.3.1 with the following:":

Prior to beginning work on the contract, provide the engineer, in writing, an emergency response to traffic incident plan.

139. Electrical Service Meter Breaker Pedestal Port Washington Rd & W Bender Rd/W Devon St, Item 656.0200.3201; Electrical Service Meter Breaker Pedestal Port Washington Rd & Clovernook Ln, Item 656.0200.3202; Electrical Service Meter Breaker Pedestal IH 43 Ramps & Good Hope Rd, Item 656.0200.3301; Electrical Service Meter Breaker Pedestal Good Hope Rd & Port Washington Rd, Item 656.0200.3302; Electrical Service Meter Breaker Pedestal IH 43 SB Ramps & STH 100/Brown Deer Rd, Item 656.0200.3303; Electrical Service Meter Breaker Pedestal IH 43 NB Ramps & STH 100/Brown Deer Rd, Item 656.0200.3304; Electrical Service Meter Breaker Pedestal STH 32/Brown Deer Rd & CTH W/Port Washington Rd, Item

656.0200.3305; Electrical Service Meter Breaker Pedestal STH 57/Green Bay Rd & Range Line Rd, Item 656.0200.3501.

Replace paragraph three with the following:

(3) Electrical utility company service installation cost will be billed to and paid for by the department. Contact Parwinder Virk at (262) 548-6717 to pay the installation costs. The department will be responsible for the monthly electrical energy service cost for any department maintained facility. The municipality will be responsible for the monthly electrical energy service cost for any municipal maintained facility. Contact the City of Glendale Public Works Department at (414) 228-1710 and Daniel Murphy, Daniel.Murphy@milwaukeecountywi.gov, at Milwaukee County for billing information.

143. Lamp, Ballast, LED, Switch Disposal by Contractor Item 659.5000.S

Replace entire article language with the following:

A Description

This special provision describes the detachment and packaging of lamps, ballasts, LEDs, and mercury containing switches (e.g., overhead roadway lighting, underdeck bridge, wall packs, pedestrian signals, traffic control stop lights and warning flashers, fluorescent bulbs, and thermostats) removed under this contract for disposal as hazardous materials.

For Lamp, Ballast, LED, Switch Disposal by Contractor, coordinate removal from the work site by the department's hazardous waste disposal vendor. Disposal will be billed to the department by the hazardous waste disposal vendor.

B Materials

B.1 Disposal by Contractor

Items removed under this contract will be considered the property of the department for waste generator identification. The contractor is responsible for coordinating with the department's hazardous waste vendor for disposal:
https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/environment/hazwaste-contacts.pdf

B.2 Disposal by Department (Vacant)

C Construction

C.1 Removal

Arrange for the de-energizing of luminaires after receiving approval from the engineer that the existing luminaires can be removed. Do not remove luminaires that cannot be replaced with proposed LED units and operational within the same workday. The new LED units need to be operational prior to sunset of the same workday.

Detach and remove luminaires and lamps from the existing traffic signal poles or respective structure. Avoid breaking fixtures whenever possible.

Lamps, ballasts, LED, and switches will become property of the department, and will be disposed of in an environmentally sound manner.

C.2 Packaging of Hazardous Materials

Provide a secure, level location removed from the travelled way for storage of the material for disposal. Pack intact fixtures in the packaging of the new lamps used to replace them, or packaging affording the equivalent protection. Place in full, closed stackable cartons.

Pile cartons no more than four high if palletized and secure cartons with shrink wrap to prevent shifting or falling of the loads. Clearly mark each pallet with the words “Universal Waste Lamps” or “Universal Waste Ballasts”, the date, and the number of fixtures on each pallet.

Pack broken fixtures into (min.) 6 mil thick plastic bags and place inside sturdy cardboard boxes or the equivalent. Mark the outer packaging with the term “Broken Fixtures/Lamps”, the date and the number of broken fixtures clearly marked on the box.

The hazardous waste vendor will not accept fixtures improperly packaged. The vendor will reject any fixtures not removed as part of a contract pay item or otherwise required under this contract.

Pack ballasts and mercury containing switches in appropriate containers.

C.3 Disposal by Contractor
Complete the lamp and ballast inventory (https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/environment/dotlampballastinventory.dotx) and contact the hazardous waste vendor to coordinate pickup and disposal at a location specified by the contractor. Consolidate all pallets and boxes from one project at a single location. Contact the hazardous waste vendor to set up an appointment for pickup. The hazardous waste vendor requires a minimum of one week advance notice to schedule pickup.

C.4 Disposal by Department (Vacant)

D Measurement
The department will measure Lamp, Ballast, LED, Switch Disposal by Contractor as each individual unit removed and received by the hazardous waste vendor, properly packaged and acceptably completed, matching the total number of units provided on the inventory form. The department will not measure broken fixtures that exceed a total of 10 percent of all fixtures to be disposed.

E Payment
The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
659.5000.S	Lamp, Ballast, LED, Switch Disposal by Contractor	EACH

Payment for Lamp, Ballast, LED, Switch Disposal by Contractor is full compensation for detachment, handling, packaging, labeling and scheduling disposal with the hazardous waste vendor; and scrapping and disposal of all other materials.

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144. Temporary Traffic Signal for Intersections Port Washington Rd & W Bender Rd/W Devon St, Item 661.0200.3201; Temporary Traffic Signal for Intersections IH 43 SB Ramps & Good Hope Rd, Item 661.0200.3301; Temporary Traffic Signal for Intersections IH 43 NB Ramps & Good Hope Rd, Item 661.0200.3302; Temporary Traffic Signal for Intersections Good Hope Rd & Port Washington Rd, Item 661.0200.3303; Temporary Traffic Signal for Intersections IH 43 SB Ramps & STH 100/Brown Deer Rd Stage 1A-1B, Item 661.0200.3304; Temporary Traffic Signal for Intersections IH 43 SB Ramps & STH 100/Brown Deer Rd Stage 4A-4B, Item 661.0200.3305; Temporary Traffic Signal for Intersections IH 43 NB Ramps & STH 100/Brown Deer Rd Stage 2, Item 661.0200.3306; Temporary Traffic Signal for Intersections IH 43 NB Ramps & STH 100/Brown Deer Rd Stage 4B, Item 661.0200.3307; Temporary Traffic Signal for Intersections STH 32/Brown Deer Rd & CTH W/Port Washington Rd, Item 661.0200.3308.

Replace (3) with the following:

(3) Use existing underground electric service and meter breaker pedestal for the operation of the Temporary Traffic Signal at the intersections of IH 43 NB Ramps & Good Hope Rd, Good Hope Rd & Port Washington Rd, and STH 32/Brown Deer Rd & CTH W/Port Washington Rd. The Department has initiated the installation of the temporary electrical service with the electrical utility as it pertains to the service application and site sketch at the intersections of Port Washington Rd & W Bender Rd/W Devon St, IH 43 SB Ramps & Good Hope Rd, IH 43 SB Ramps & STH 100/Brown Deer Rd, and IH 43 NB Ramps & STH 100/Brown Deer Rd to expedite the process. Contact Parwinder Virk at (262) 548-6717 to coordinate the temporary electrical service. The Department will pay for all installation and Energy Costs associated with the operation of the Temporary Traffic Signals.

Furnish and install a generator to operate the temporary traffic signals for the times required to switch the existing permanent traffic signal over to the temporary traffic signal and for the time required to switch the temporary traffic signal back over to the permanent traffic signal.

170. DELETED

186. Emergency Response to Traffic Including Concrete Barrier Temporary, Item SPV.0060.0940.

Replace the entire article with the following (Note – article name has changed):

186. Emergency Response to Traffic Incident Involving Concrete Barrier Temporary Precast, Item SPV.0060.0940.

A Description

This special provision describes providing prompt response to an emergency repair request for damaged and/or dislodged temporary concrete barrier located on IH 43 that is damaged or displaced due to a vehicular collision during the time this contract is in effect.

B (Vacant)

C Construction

The contractor shall provide staff, equipment, and materials to the incident site within 2 hours of receiving a repair request from the responding agency. The contractor shall consult with the department's representative on potential repair or replacement options to restore the temporary concrete barrier to proper working condition. Staff and equipment deployed shall be capable of completing the needed repairs as quickly as possible once repair work is started. Repair work shall be completed off the traveled way to the maximum extent allowable. The contractor shall provide a time log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating and completing repair efforts) shall be submitted to the engineer at the pre-construction meeting. This person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff and equipment within 2 hours of receiving a repair request, the department will assess the contractor liquidated damages for each 15-minute interval that the contractor is not present following the allotted 2 hour response time, as follows:

IH 43 Weekday:

- $6,000 per lane, per direction of travel, per hour broken into 15 minute increments.

IH 43 Weekend:

- $3,000 per lane, per direction of travel, per hour broken into 15 minute increments.

IH 43 Service Ramp

- $1,000 per lane, per direction of travel, per hour broken into 15 minute increments.

Local Road:

- $1,000 per lane, per direction of travel, per hour broken into 15 minute increments.

Increments of 15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Liquidated damages will be assessed under the administrative item Failing to Open Road to Traffic.
For state-owned temporary barrier, repair work is covered under article Concrete Barrier Temporary Precast Left In Place of these special provisions.
Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Traffic Incident Involving Concrete Barrier Temporary Precast as each individual response, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0940	Emergency Response to Traffic Incident Involving Concrete Barrier Temporary Precast	EACH

Payment is full compensation for providing prompt response to an emergency repair request for damaged and/or dislodged temporary concrete barrier located within the project's limits.

The cost of providing the appropriate level of on-call staff, equipment, and materials for 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

In addition to the liquidated damages detailed above, the department will not pay for any work performed under the bid item if contractor fails to respond within the allotted 2 hour response time.

187. Emergency Response to Traffic Including Temporary Crash Cushion, Item SPV.0060.0945.

Replace the entire article with the following (Note – article name has changed):

187. Emergency Response to Traffic Incident Involving Crash Cushion, Item SPV.0060.0945.

A Description

This special provision describes providing prompt response to an emergency repair request for involving a damaged crash cushion device on IH 43 that is damaged or displaced due to a vehicular collision during the time this contract is in effect.

B (Vacant)

C Construction

The contractor shall provide appropriate staff to the incident site within 2 hours of receiving a repair request from the responding agency. Staff deployed shall be capable immediately assessing the severity of the damage to the device and consult with the department's representative on potential repair or replacement

options and the projected timeline to restore the roadside device to its proper working condition. The contractor shall provide a time log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating repair efforts) shall be submitted to the engineer at the pre-construction meeting. This person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff within 2 hours of receiving a repair request, the department will assess the contractor liquidated damages for each 15-minute interval that the contractor is not present following the allotted 2 hour response time, as follows:

IH 43 Weekday:

- $6,000 per lane, per direction of travel, per hour broken into 15 minute increments.

IH 43 Weekend:

- $3,000 per lane, per direction of travel, per hour broken into 15 minute increments.

IH 43 Service Ramp

- $1,000 per lane, per direction of travel, per hour broken into 15 minute increments.

Local Road:

- $1,000 per lane, per direction of travel, per hour broken into 15 minute increments.

Increments of 15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Liquidated damages will be assessed under the administrative item Failing to Open Road to Traffic.

For state-owned devices, repair work is covered under article Repair State Owned Crash Cushion of these special provisions. In either case, once repair work has been started, work shall continue until completion. Repair work shall be completed off the traveled way to the maximum extent allowable.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Traffic Incident Involving Crash Cushion as each individual response, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0945	Emergency Response to Traffic Incident Involving Crash Cushion	EACH

Payment is full compensation for providing a prompt staff response to an emergency repair request for a damaged crash cushion device located within the project limits.

The cost of providing the appropriate level of on-call staff 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

In addition to the liquidated damages detailed above, the department will not pay for any work performed under the bid item if contractor fails to respond within the allotted 2 hour response time.

315. Excavation, Hauling, and Disposal of Petroleum Contaminated Soil, Item 205.0501.S.

A Description

A.1 General

This special provision describes excavating, loading, hauling, and disposing of petroleum and lead contaminated soil at a WDNR-approved bioremediation facility. The closest WDNR-approved bioremediation facilities are:

Waste Management Orchard Ridge Landfill
W124 N9355 Boundary Road
Menomonee Falls, WI 53051
866-909-4458

Advanced Disposal Emerald Park Landfill
W124 S10629 S. 124th St.
Muskego, WI 53150
414-529-1360

Perform this work in accordance to standard spec 205 and with pertinent parts of Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR 718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport contaminated soil.

A.2 Notice to the Contractor – Contaminated Soil Locations

The department completed testing for soil contamination at locations within this project where excavation is required.

Testing indicated that petroleum-contaminated soil and lead contaminated soil are present at the following locations as shown on the plans:

- W. Bender Rd. Station 16BN+25 to 17BN+25, from reference line to 120 feet left of reference line, from 10 to16+ feet below grade. The estimated volume of contaminated soil to be excavated at this location is 2 CY (approximately 3.4 tons using a conversion factor of 1.7 tons per cubic yard). Soil at this location is contaminated with petroleum.

Directly load soil excavated by the project at the above location into trucks that will transport the soil to a WDNR-licensed bioremediation facility.

If contaminated soils are encountered elsewhere on the project, terminate excavation activities in the area and notify the engineer.

No active groundwater monitoring wells were observed within the construction limits. If active groundwater monitoring wells are encountered during construction, notify the engineer and protect them to maintain their integrity. The environmental consultant will determine if monitoring wells need to be maintained. For monitoring wells that do need to be maintained, adjust the wells that so no conflict with structures or curb and gutter to be flush with the final grade. For wells that conflict with the previously mentioned items or if monitoring wells are not required to be maintained, they will be abandoned by others.

A.3 Excavation Management Plan

The excavation management plan for this project has been designed to minimize the offsite disposal of contaminated material. The excavation management plan, including these special provisions, has been developed in cooperation with the WDNR. The WDNR concurrence letter is on file at the Wisconsin Department of Transportation. For further information regarding previous investigations, remediation activities and waste characterization within the project limits, contact:

Name:	Andrew Malsom
Address:	141 NW Barstow Street, PO Box 798, Waukesha, WI 53187-0798
Phone:	262-548-6705
Fax:	262-548-6891
e-mail:	andrew.malsom@dot.wi.gov

A.4 Coordination

Coordinate work under this contract with the environment consultant:

Consultant:	TRC Environmental Corporation
Address:	150 N. Patrick Blvd., Ste. 180, Brookfield, WI 53045
Contact:	Bryan Bergmann
Phone:	262-901-2126 (office), 262-227-9210 (cell)
Fax:	262-879-1220
e-mail:	bbergmann@trccompanies.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of contaminated soil to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying contaminated soils to be hauled to the bioremediation facility;
3. Documenting that activities associated with management of contaminated soil are in conformance with the contaminated soil management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of contaminated soil from the bioremediation facility.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the areas of contamination to the environmental consultant. Also notify the environmental consultant at least three calendar days prior to commencement of excavation activities in the contaminated area.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the contaminated area. Perform excavation work in e the contaminated area on a continuous basis until excavation work is completed.

Identify the DNR approved bioremediation facility that will be used for disposal of contaminated soil and provide this information to the environmental consultant no later than 30 calendar days prior to commencement of excavation activities in the contaminated areas or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals for disposal of contaminated soils from the bioremediation facility. Do not transport contaminated soil offsite without prior approval from the environmental consultant.

A.5 Health and Safety Requirements

Add the following to standard spec 107.1:

During excavation activities, expect to encounter soil contaminated with gasoline, diesel fuel, fuel oil, or other petroleum related products and metals. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each contaminated site location as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer prior to the start of work.

B (Vacant)

C Construction

Add the following to standard spec 205.3:

Control operations in the contaminated area to minimize the quantity of contaminated soil excavated.

The environmental consultant will periodically evaluate soil excavated from the contaminated area to determine if the soil will require offsite bioremediation. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 20 cubic yards excavated.

Directly load and haul soils designated by the environmental consultant for offsite bioremediation to the DNR approved bioremediation facility. Use loading and hauling practices that are appropriate to prevent any spills or releases of petroleum-contaminated soils or residues. Prior to transport, sufficiently dewater soils designated for off-site bioremediation so as not to contain free liquids.

If dewatering is required in an area of known contamination, water generated from dewatering activities may contain contaminants and require testing, special handling, temporary storage, and disposal. Contaminated groundwater may be discharged to the sanitary sewer with prior approval from the City of Mequon and the Milwaukee Metropolitan Sewerage District.

Contractor shall ensure continuous dewatering and excavation safety at all times. Provide, install, operate, maintain adequate pumping equipment, disassemble, and remove pumping equipment.

Costs associated with excavation and dewatering in the contaminated area are considered incidental to this pay item. The Wisconsin Department of Transportation will be the generator of regulated solid waste from the construction project.

Limit excavation in the location described in A.2 to minimize the handling of groundwater. Notify the engineer of any dewatering activities and obtain any permits necessary to discharge or dispose of contaminated water. Provide copies of such Permit to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

D Measurement

The department will measure Excavation, Hauling, and Disposal of Petroleum Contaminated Soil in tons of contaminated soil, accepted by the bioremediation facility as documented by weight tickets generated by the bioremediation facility.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
205.0501.S	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	Ton

Payment is full compensation for excavating, segregating, loading, hauling, and treatment via bioremediation of contaminated soil; obtaining solid waste collection and transportation service operating licenses; assisting in the collection soil samples for field evaluation; and dewatering of soils prior to transport, if necessary.

316. Emergency Response to Pavement Repairs, Item SPV.0060.0935.

A Description

This special provision describes providing prompt response to an emergency repair request of damaged or deteriorated concrete or HMA pavement located on IH 43, an IH 43 ramp, or a local road. The provisions of this article will not be applicable during the project's winter shutdown period.

B (Vacant)

C Construction

The contractor shall provide staff, equipment, and materials to the incident site within 2 hours of receiving a repair request from the responding agency. The contractor shall consult with the department's representative on potential repair or replacement options to restore the damaged or deteriorated pavement section to a safe and drivable condition. Staff and equipment deployed shall be capable of completing the needed repairs as quickly as possible once repair work is started. The contractor shall provide a time log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating and completing repair efforts) shall be submitted to the engineer at the pre-construction meeting. This person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff and equipment within 2 hours of receiving a repair request, the department will assess the contractor liquidated damages for each 15-minute interval that the contractor is not present following the allotted 2 hour response time, as follows:

IH 43 Weekday:

- $6,000 per lane, per direction of travel, per hour broken into 15 minute increments.

IH 43 Weekend:

- $3,000 per lane, per direction of travel, per hour broken into 15 minute increments.

IH 43 Service Ramp

- $1,000 per lane, per direction of travel, per hour broken into 15 minute increments.

Local Road:

- $1,000 per lane, per direction of travel, per hour broken into 15 minute increments.

Increments of 15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Lane rental fees will be assessed under the administrative item Failing to Open Road to Traffic.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Pavement Repairs as each individual response, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0935	Emergency Response to Pavement Repairs	EACH

Payment is full compensation for providing prompt response to an emergency repair request for damaged or deteriorated concrete or asphalt pavement located within the project's construction limits.

The cost of providing the appropriate level of on-call staff, equipment, and materials for 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for concrete pavement or asphalt pavement repairs under the respective concrete pavement or asphalt pavement bid items in the contract.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

In addition to the liquidated damages detailed above, the department will not pay for any work performed under the bid item if contractor fails to respond within the allotted 2 hour response time.

317. Temporary Fence Chain Link, Item SPV.0090.0008.

A Description

This special provision describes providing temporary chain link 4-FT during Stage 1 construction along the Union Pacific corridor. A continuous fence line must be maintained during construction to separate the property owners from the construction zone.

B Materials

Furnish materials necessary to erect the fence chain link according to standard spec 616.2.

C Construction

Construct fence according to standard spec 616.3.

D Measurement

The department will measure Temporary Fence Chain Link 4-FT by the linear foot acceptably completed, measured from center to center of end posts, along the top rail or tension wire.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0008	Temporary Fence Chain Link 4-FT	LF

Payment is full compensation for clearing and grubbing the fence line; for excavating; for setting posts including placing concrete; for erecting and tensioning all fencing components; providing all other materials required to erect the fence; for removing and disposing of all debris, excess excavation, and surplus material; and for removing fence.

Schedule of Items
Attached, dated September 23, 2022, are the revised Schedule of Items Pages 1 – 66.

Plan Sheets
The following 8½ x 11-inch sheets are attached and made part of the plans for this proposal:
Revised: 6, 144, 215, 292-294, 450-453, 528-529, 542-543, 637-638, 767-768, 797-799, 838-840, 953, 959, 981-982, 1028, 1033, 1078, 1129, 1132, 1141, 1222, 1224, 1230, 1232, 1258, 1260, 1266, 1268, 1291, 1299, 1301, 1333, 1364, 1387, 1390, 1419, 1422, 1431, 1435, 1439, 1442, 1459, 1462, 1481, 1485, 1488, 1514, 1570, 1605, 1615-1620, 1622, 1626, 1633, 1654, 1686, 1739-1740, 1742, 1771-1772, 1805-1806, 1814, 1820, 1822-1823, 1826-1827, 1836, 1841-1842, 1846-1848, 1862, 1865, 2040, 2048, 2074-2075, 2077, 2086, 2101-2102, 2106, 2628, 2645-2648, 2655, 2659, 2661, 2663, 2665, 3131, 3709-3717.
Added: 109A-E, 120A, 953A-B, and 2403A.
Deleted: 539.

END OF ADDENDUM

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 6
September 23, 2022

ABBREVIATIONS

MISCELLANEOUS

Ac.	Acres
Ave.	Avenue
BCLS	Backfill Controlled Low-Strength
Blvd.	Boulevard
Bldg.	Building
BNSF	BNSF Railway
C.Y.	Cubic Yards
Conc.	Concrete
°	Degree (s)
Dia.	Diameter
Dr.	Drive
Dwg.	Drawing
E	East
Elev.	Elevation
Exist.	Existing
'	Foot, Feet or Minute (s)
F.S.	Finished Surface
Horiz.	Horizontal
"	Inch, Inches or Second (s)
Inv.	Invert
Lt.	Left
L	Length
L.F.	Lineal Feet
Max.	Maximum
Min.	Minimum
N	North
NTS	Not to Scale
No.	Number
OH	Overhead
Prop.	Proposed
RR	Railroad
Rwy	Railway
R/W	Right of Way
Rt.	Right
S	South
S.F.	Square Feet
Sta.	Station
Std.	Standard
St.	Street
Twp.	Township
Typ.	Typical
UG	Underground
UPRR	Union Pacific Railroad
V	Velocity
Wt.	Weight
W	West
X-Ing	Crossing

SIGNAL

ABS	Automatic Block Signal
ATC	Automatic Train Control
CTC	Centralized Traffic Control
DED	Dragging Equipment Detector
DTC	Direct Traffic Control
ELTO	Electric Lock Turnout
HBD	Hot Box Detector
HTTO	Hand Throw Turnout
HWD	High Wide Detector
POTO	Power Operated Turnout
TWC	Track Warrant Control
WILD	Wheel Impact Load Detector

STRUCTURES

Bldg.	Building
Br.	Bridge
CB	Catch Basin
CPT	Concrete Pile Trestle - Ballast Deck
CIP	Cast Iron Pipe
CMP	Corrugated Metal Pipe
CMPA	Corrugated Metal Pipe Arch
CSP	Corrugated Steel Pipe
Culv.	Culvert
DI	Drop Inlet
DPGBD	Deck Plate Girder - Ballast Deck
DPGOD	Deck Plate Girder - Open Deck
EBW	East Backwall
F.L.	Flowline
F.F.	Finished Floor
GIP	Galvanized Iron Pipe
Hdwl	Headwall
NBW	North Backwall
PCB	Prestressed Concrete Box
PSCT	Prestressed Concrete Trestle
RCA	Reinforced Concrete Arch
RCB	Reinforced Concrete Box
RCP	Reinforced Concrete Pipe
RCCP	Reinforced Concrete Culvert Pipe
SBW	South Backwall
SSP	Smooth Steel Pipe
SPTBD	Steel Pile Trestle - Ballast Deck
SPTOD	Steel Pile Trestle - Open Deck
SPP	Structural Plate Pipe
SSPRC	Storm Sewer Pipe Reinforced Concrete
TPGBD	Through Plate Girder - Ballast Deck
TPGOD	Through Plate Girder - Open Deck
TPTBD	Timber Pile Trestle - Ballast Deck
TPTOD	Timber Pile Trestle - Open Deck
TTBD	Through Truss - Ballast Deck
TTOD	Through Truss - Open Deck
TWB	Treated Wood Box
VCP	Vitrified Clay Pipe
Viad.	Viaduct
WBW	West Backwall
WIP	Wrought Iron Pipe

TRACK

ATR	Above Top of Rail
Align.	Alignment
BBR	Below Base of Rail
Cntrs.	Centers
CWR	Continuous Welded Rail
DSPD	Double Switch Point Derail
EOT	End of Track
HH	Head Hardened
Jtd.	Jointed Rail
LH	Left Hand
ML	Main Line
MM	Mile Marker
MP	Mile Post
NSC	Not Sufficient Clearance
OTM	Other Track Material
PCC	Point of Compound Curve
PC	Point of Curve
PCS	Point of Curve to Spiral
POC	Point on Curve
PF	1/2° Point of Frog
PI	Point of Intersection
PITO	Point of Intersection of Turnout
PS	Point of Spiral
PSC	Point of Spiral to Curve
POS	Point on Spiral
PT	Point of Tangent
POT	Point on Tangent
Pt. Sw.	Point of Switch
PVC	Point of Vertical Curve
PVI	Point of Vertical Intersection
PVT	Point of Vertical Tangent
RH	Right Hand
SH	Second Hand
SSPD	Single Switch Point Derail
TC	Track Centers
T.F.	Track Feet
Trk.	Track
UXO	Universal Cross-Over
X-Over	Cross-Over

Section Number
Section Sheet No.
Section Description
Scale
Section Number
Section From Sheet No.

UTILITIES

- Compressed Air
- Fiber Optic Cable
- Gas Pipeline
- Overhead Power Line
- Sanitary Sewer
- Overhead Signal Line
- Underground Signal Line
- Steam Line
- Storm Sewer
- Telephone
- Underground Electric
- Water Main
- Underground Wire
- Under Drain

V. Valve
M.H. Manhole
C.B. Catch Basin
F.H. Fire Hydrant
Junction Box
Electric Meter
Gas Meter
Water Meter
M.W. Monitoring Well
PUMP Pump

TRACK

- Existing Mainline
- Existing Siding or Spur
- Proposed
- Remove
- Shift
- Relay
- Surface & Line
- Future
- Foreign Railroad or Industry
- In Buildings or Under Structures
- Turnout
- Power Turnout
- Bumping Post
- Earthen Bumper
- 56' Inert Retarder
- 52' Dowty Retarder
- Hayes Derail
- Double Switch Point Derail

PROPERTY

- Section Line
- Center Section Line
- Parcel or Easement Line
- Right of Way
- Former Right of Way
- Right of Way to be Acquired
- Easement to be Acquired
- Foreign Right of Way

ROAD CROSSING WARNING DEVICES

- Crossbuck Sign
- Flashing Light Warning Device
- Flashing Light Warning Device with Gate
- Cantilever Flashing Light Warning Device
- Cantilever Flashing Light Signal with Gate

SIGNAL

- Absolute Signal
- Signal Bridge
- Cantilever Signal
- ACS or CTC Signal
- Dwarf Signal
- Begin CTC
- Microwave Tower
- AEI
- Battery Box
- Dragging Equipment Detector
- GEN. Generator
- Hot Box Detector

STRUCTURES

- Culvert
- Culvert with Headwalls
- Double Culvert
- Railroad Bridge
- Highway Overpass
- Highway Underpass
- Tunnel
- Building
- Flag Pole

OTHER

- Embankment
- Flow Line
- Milepost
- MM Milemarker
- 15 Control Point
- 1 Revision Number
- Revision Cloud

SIGNS

- Stop
- Yard Limit
- 1 Mile to Yard Limit
- Whistle Post
- Flanger
- Station
- Reduce Speed
- Resume Speed
- General Purpose

FENCES

- Barbed Wire
- Chain Link
- Snow / Sand
- Cattle Guard

ROADS

- Paved Road
- Unimproved Road
- 90 Interstate Highway
- 20 Federal Highway
- 50 State Highway
- C3 County Highway

PERMITTING

- Temporary Workspace - Permitted
- Sensitive Resources - Impacted / Permitted
- Sensitive Resources - Do Not Impact

CONSTRUCTION

- Note (Work by Contractor)
- Note (Work by Others)
- Cut Lines
- Fill Lines
- Grading Limits

LIGHTING

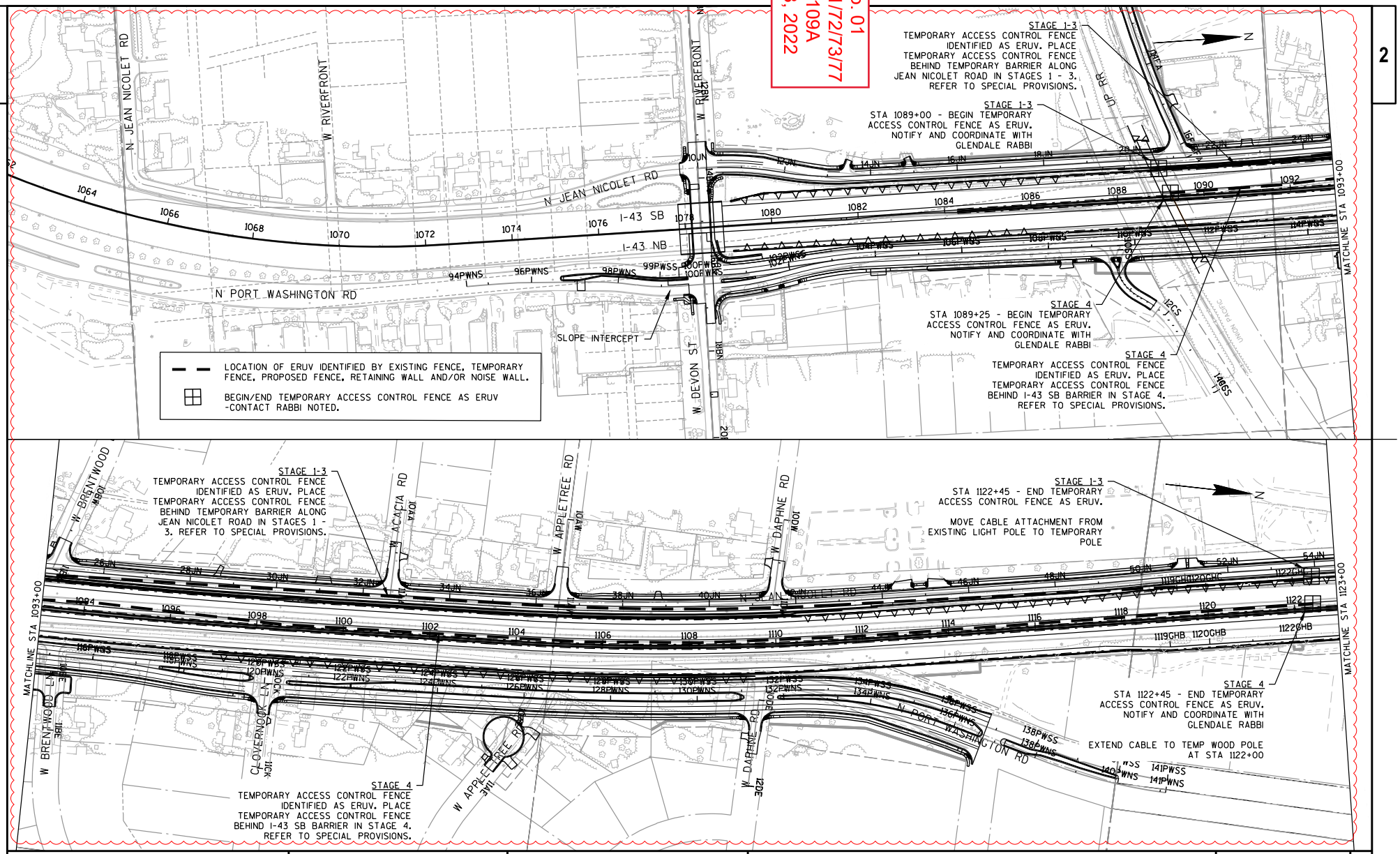
- Light Pole
- Light Tower

UPRR OVER I-43; WISDOT PROJECT NO. 1229-04-72	LOCATION: GLENDALE, WI	SHORELINE SUBDIVISION, MP 103.75 TO MP 104.55	ABBREVIATIONS & LEGEND	SHEET 6	E

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WISDOT/CADDS SHEET 42

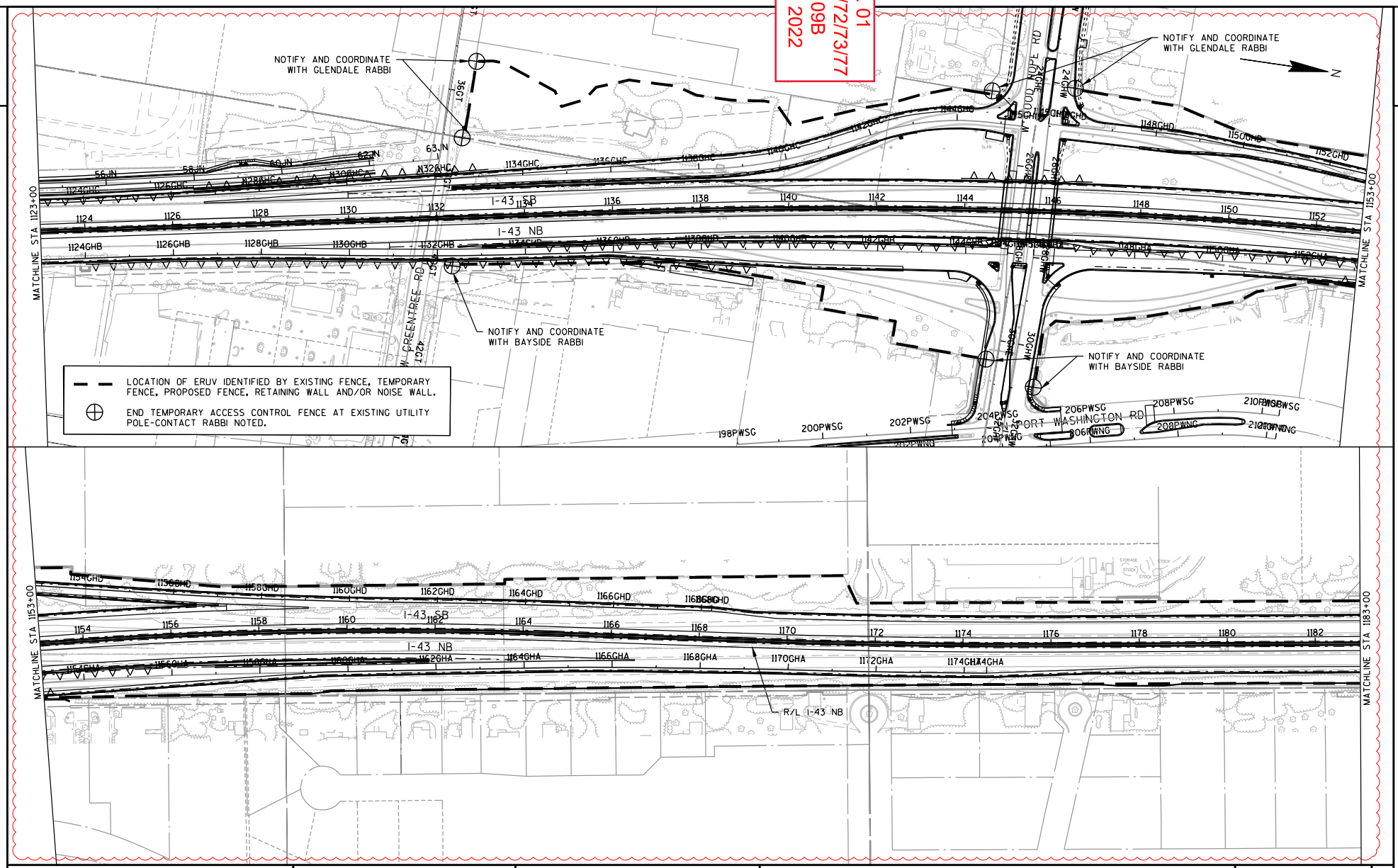
Addendum No. 01
ID 1229-04-71/72/73/77
Added Sheet 109A
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - ERUV LOCATIONS AND INFORMATION	SHEET 109A	E

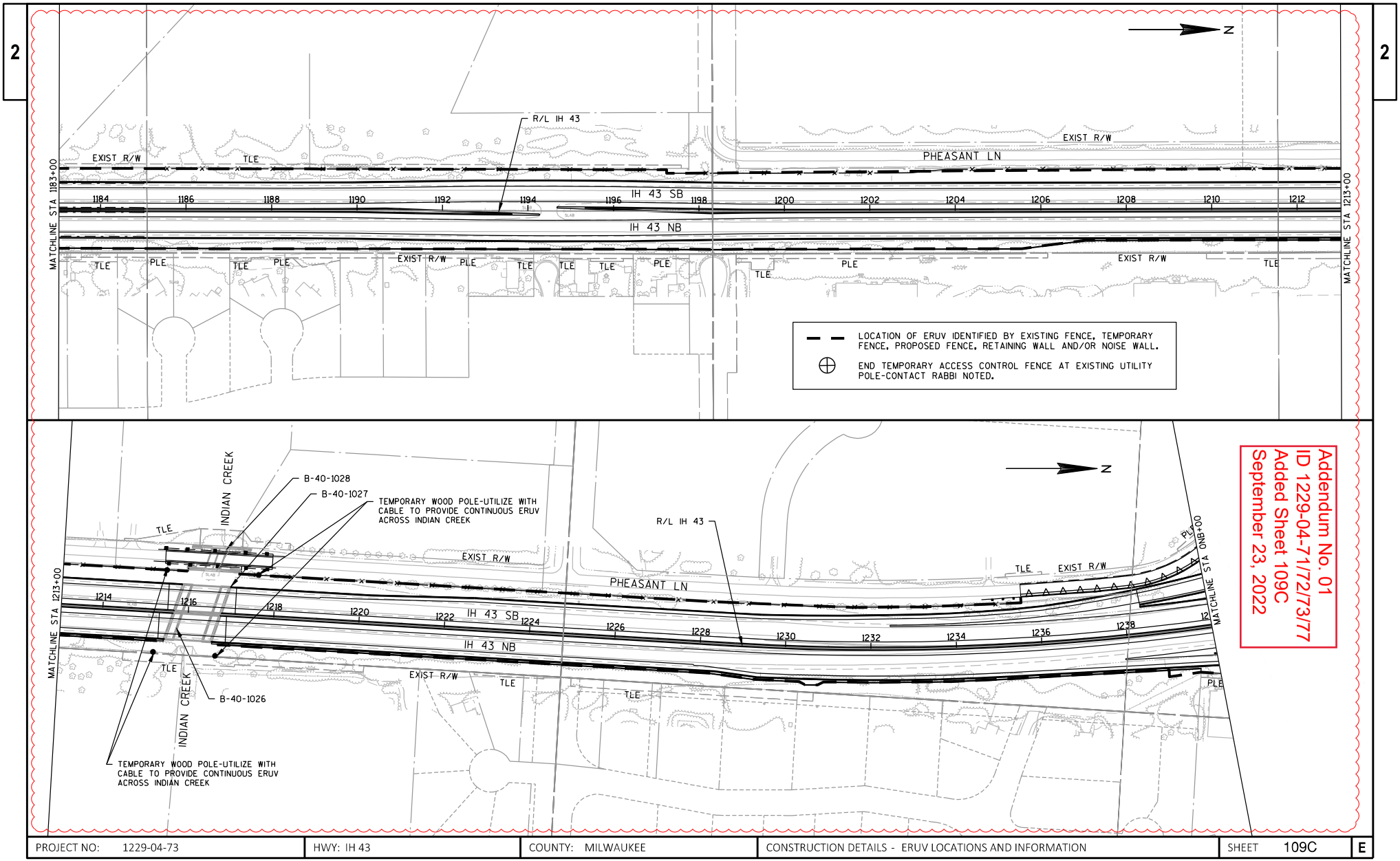
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WISDOT/CADDS SHEET 42

Addendum No. 01
ID 1229-04-71/72/73/77
Added Sheet 109B
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - ERUV LOCATIONS AND INFORMATION	SHEET 109B	E

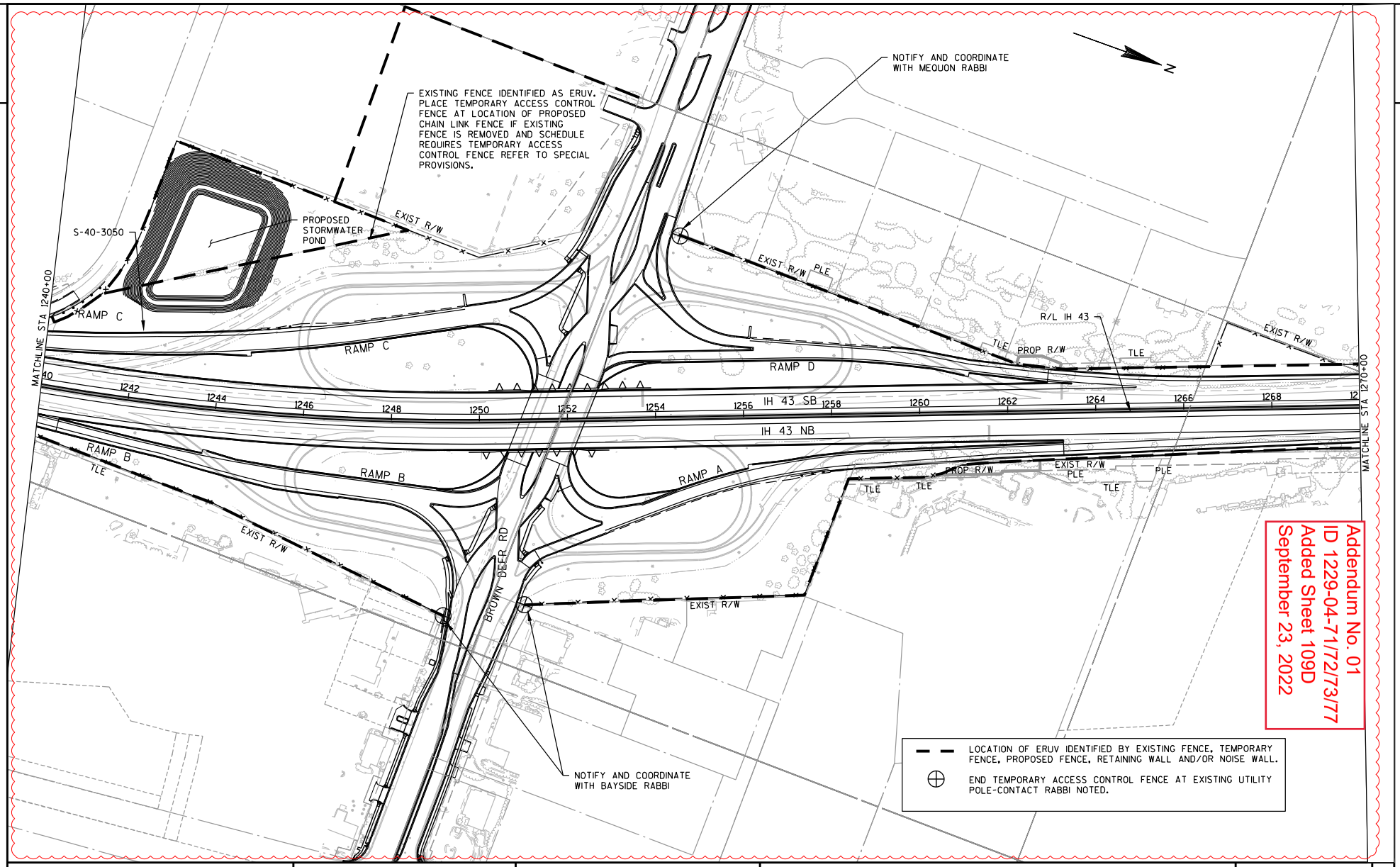
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Addendum No. 01
ID 1229-04-71/72/73/77
Added Sheet 109C
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - ERUV LOCATIONS AND INFORMATION	SHEET 109C	E

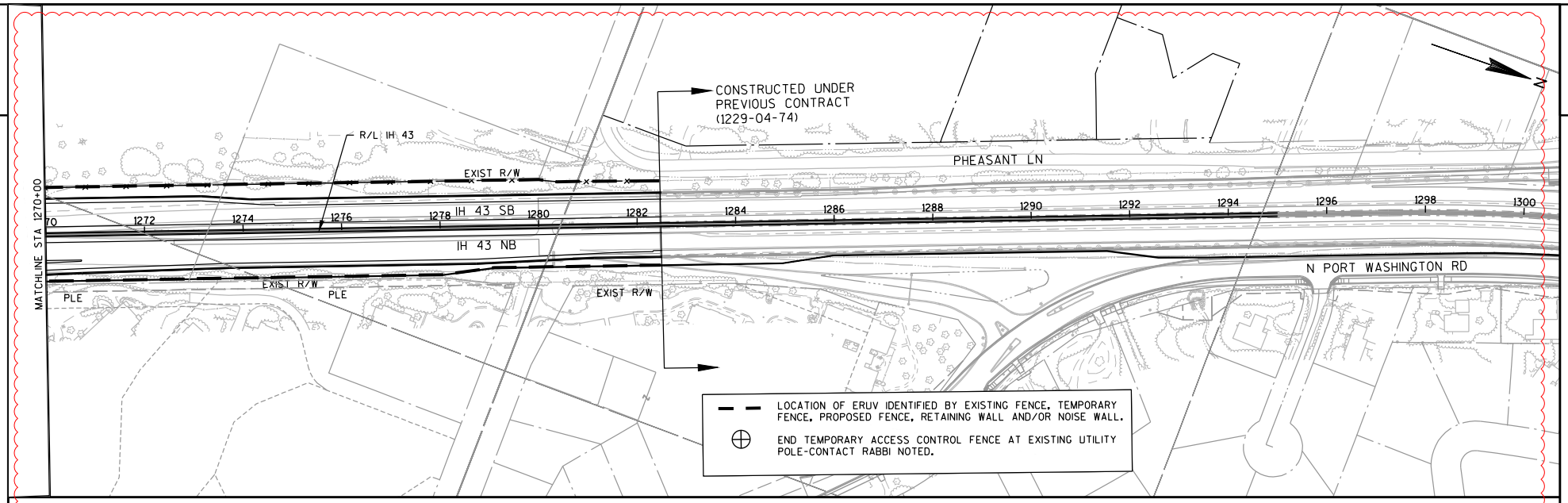
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Addendum No. 01
ID 1229-04-71/72/73/77
Added Sheet 109D
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - ERUV LOCATIONS AND INFORMATION	SHEET 109D	E

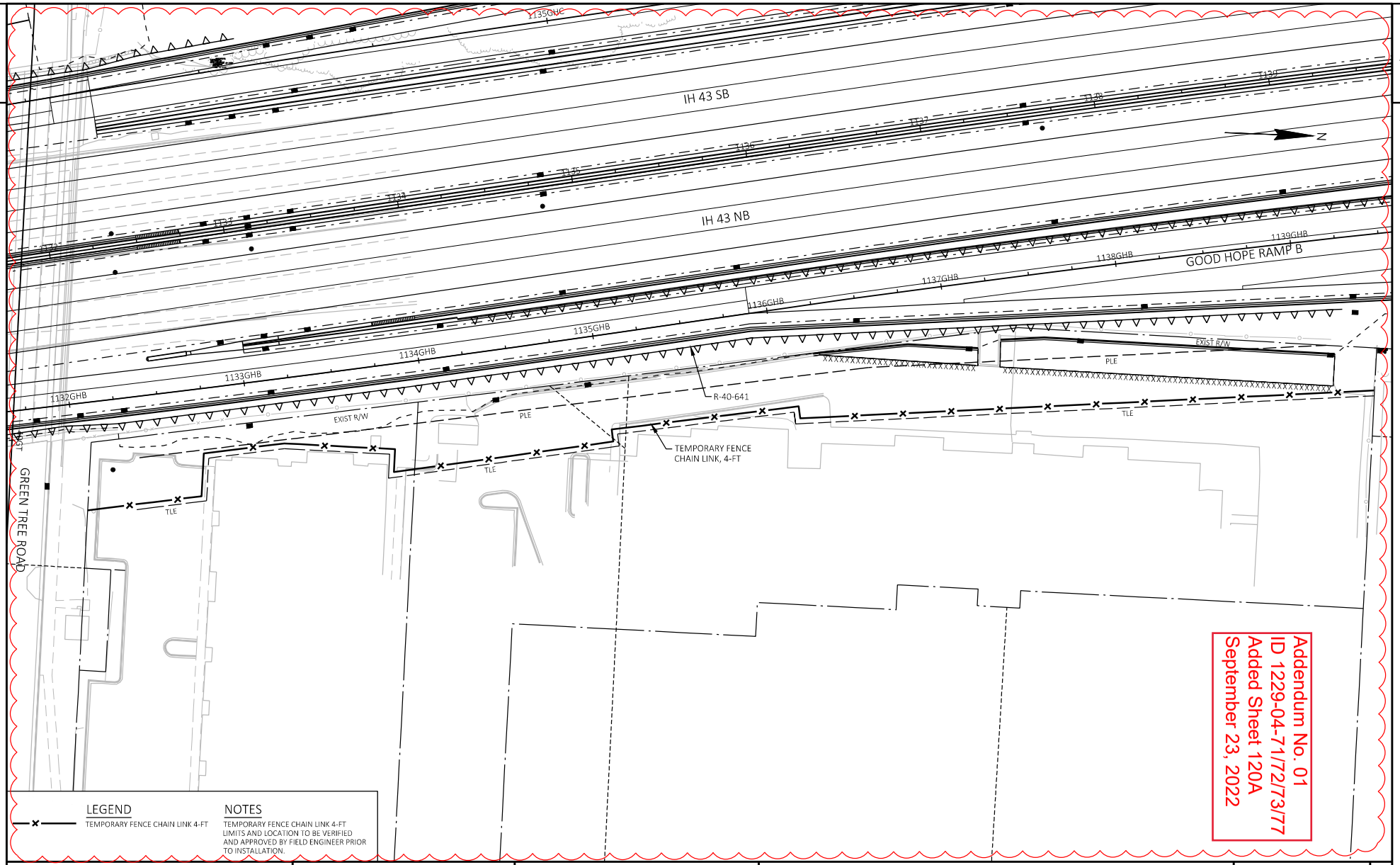
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Addendum No. 01
ID 1229-04-71/72/73/77
Added Sheet 109E
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - ERUV LOCATIONS AND INFORMATION	SHEET 109E	E

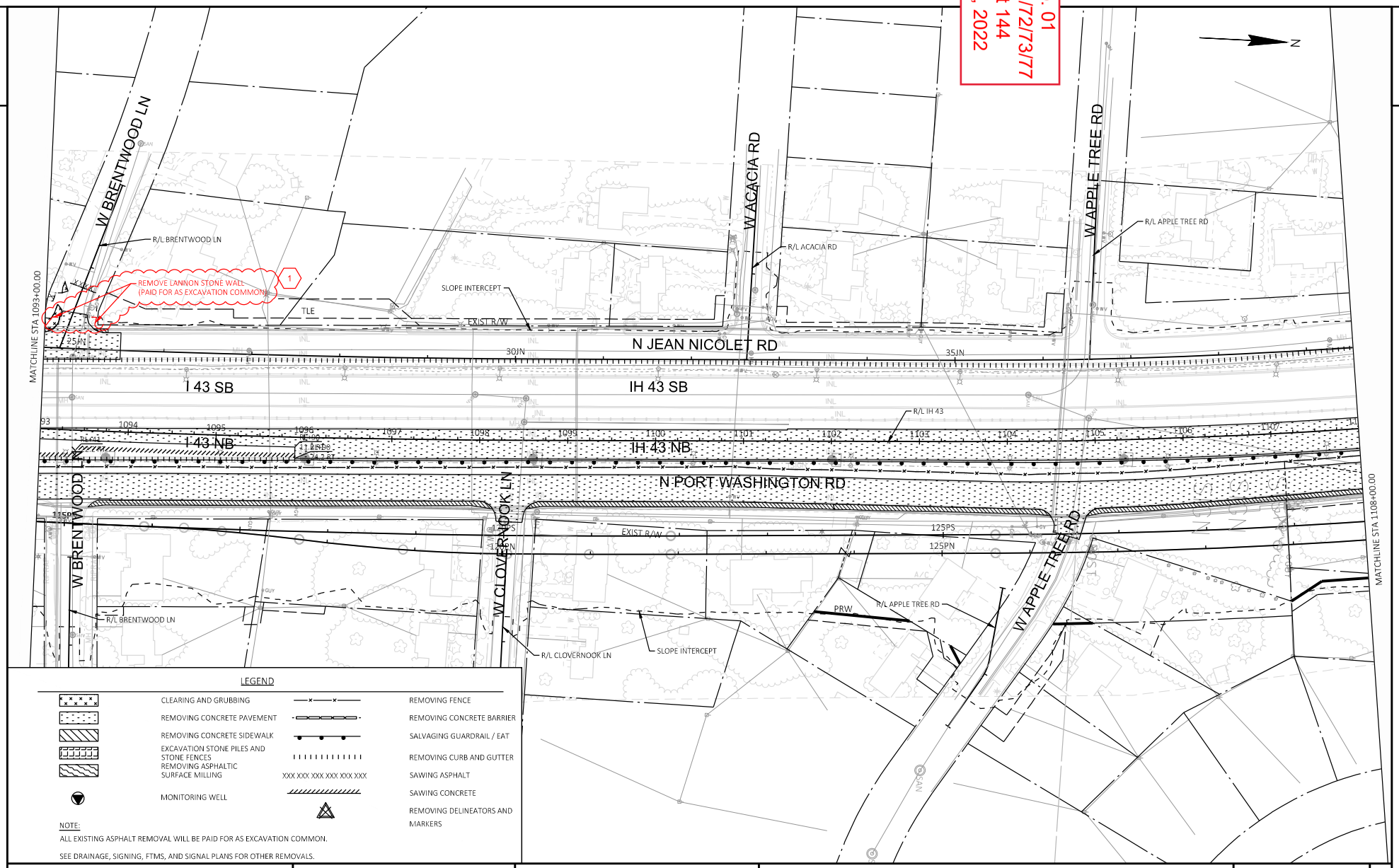
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PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - TEMPORARY CHAIN LINK FENCE	SHEET 120A	E

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Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 144
September 23, 2022



LEGEND

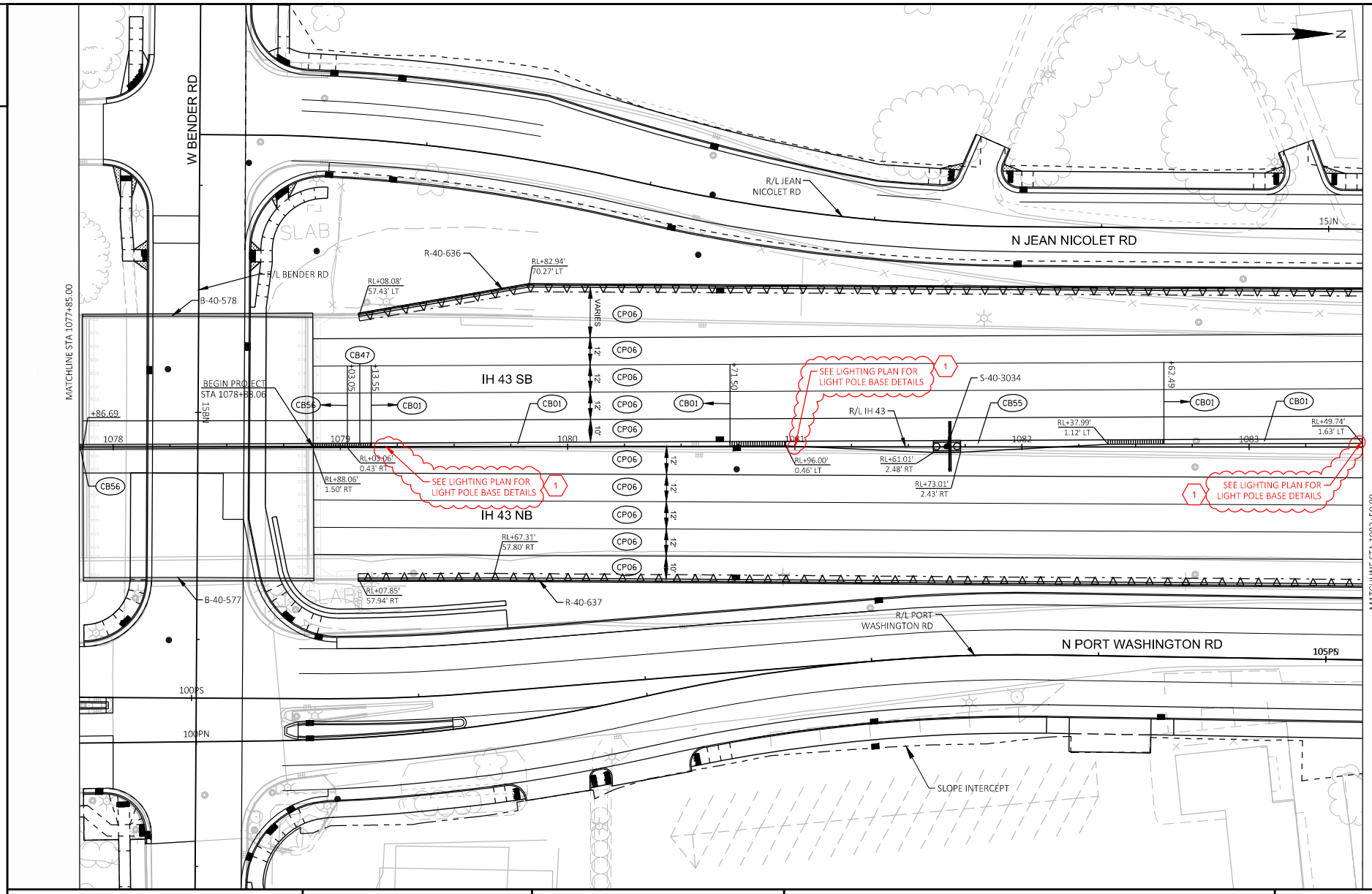
	CLEARING AND GRUBBING		REMOVING FENCE
	REMOVING CONCRETE PAVEMENT		REMOVING CONCRETE BARRIER
	REMOVING CONCRETE SIDEWALK		SALVAGING GUARDRAIL / EAT
	EXCAVATION STONE PILES AND STONE FENCES		REMOVING CURB AND GUTTER
	REMOVING ASPHALTIC SURFACE MILLING	XXX XXX XXX XXX XXX XXX	SAWING ASPHALT
	MONITORING WELL		SAWING CONCRETE
			REMOVING DELINEATORS AND MARKERS

NOTE:
ALL EXISTING ASPHALT REMOVAL WILL BE PAID FOR AS EXCAVATION COMMON.

SEE DRAINAGE, SIGNING, FTMS, AND SIGNAL PLANS FOR OTHER REMOVALS.

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	REMOVAL PLAN - STAGE 2 - MAINLINE AND JEAN NICOLET RD	SHEET 144	E

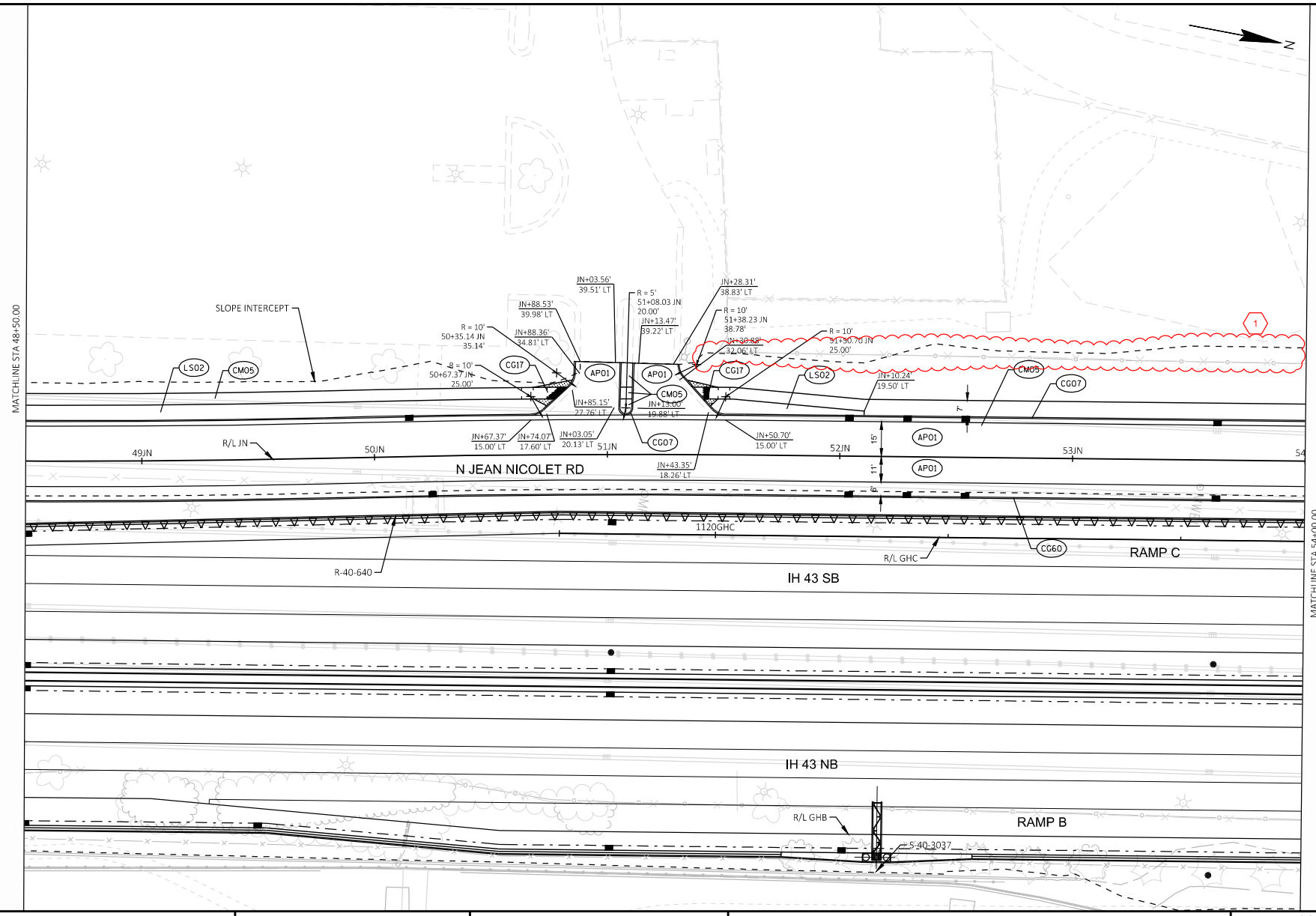
FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021125_RM_ML-STAGE2.DWG
LAYOUT NAME : _002
PLOT DATE : 9/12/2022 4:20 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN DETAILS - MAINLINE	SHEET 215	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021201_PD_ML.DWG
LAYOUT NAME : _001
PLOT DATE : 9/20/2022 1:22 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 215
September 23, 2022

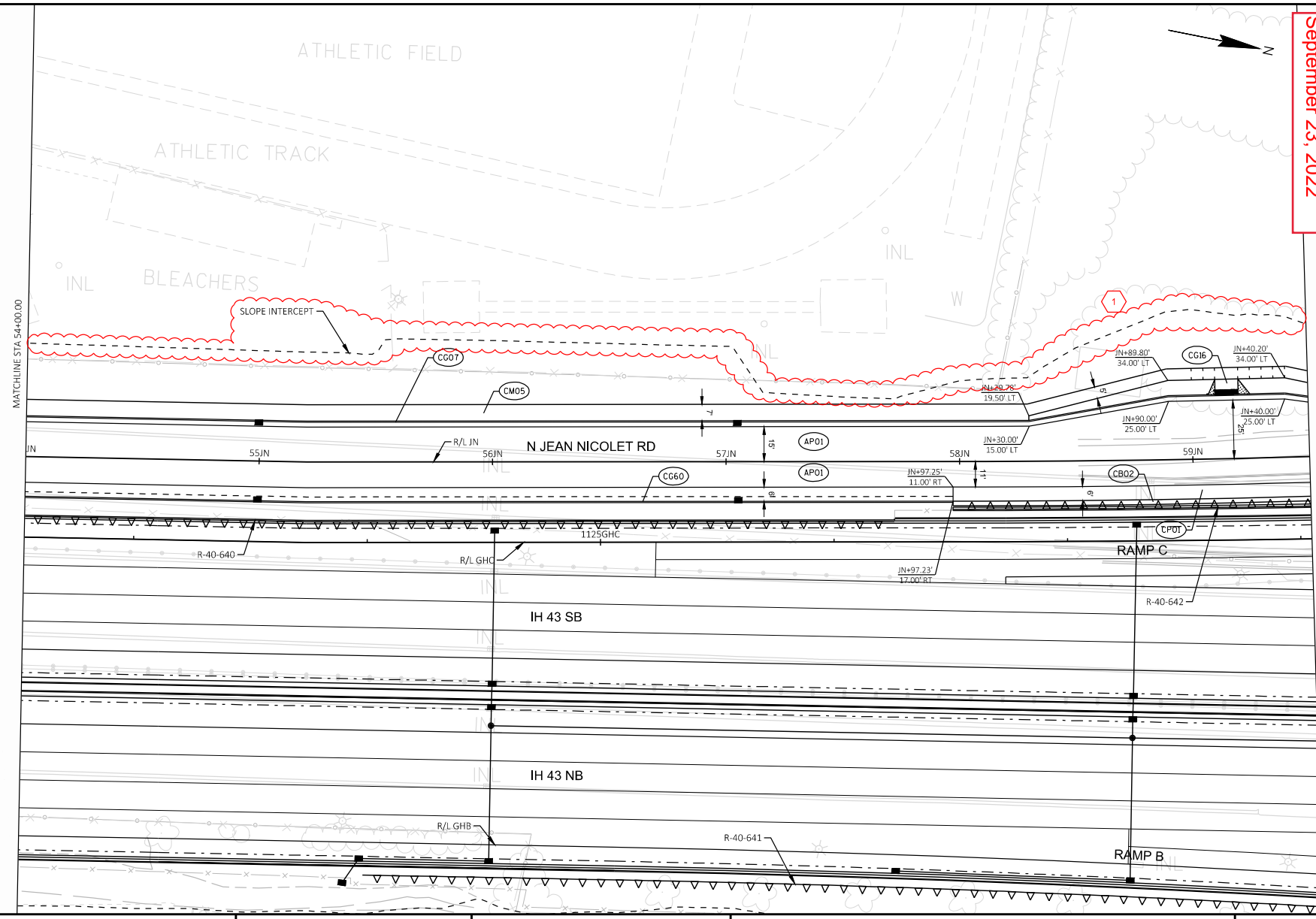


Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 292
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN DETAILS - JEAN NICOLET ROAD	SHEET 292	E

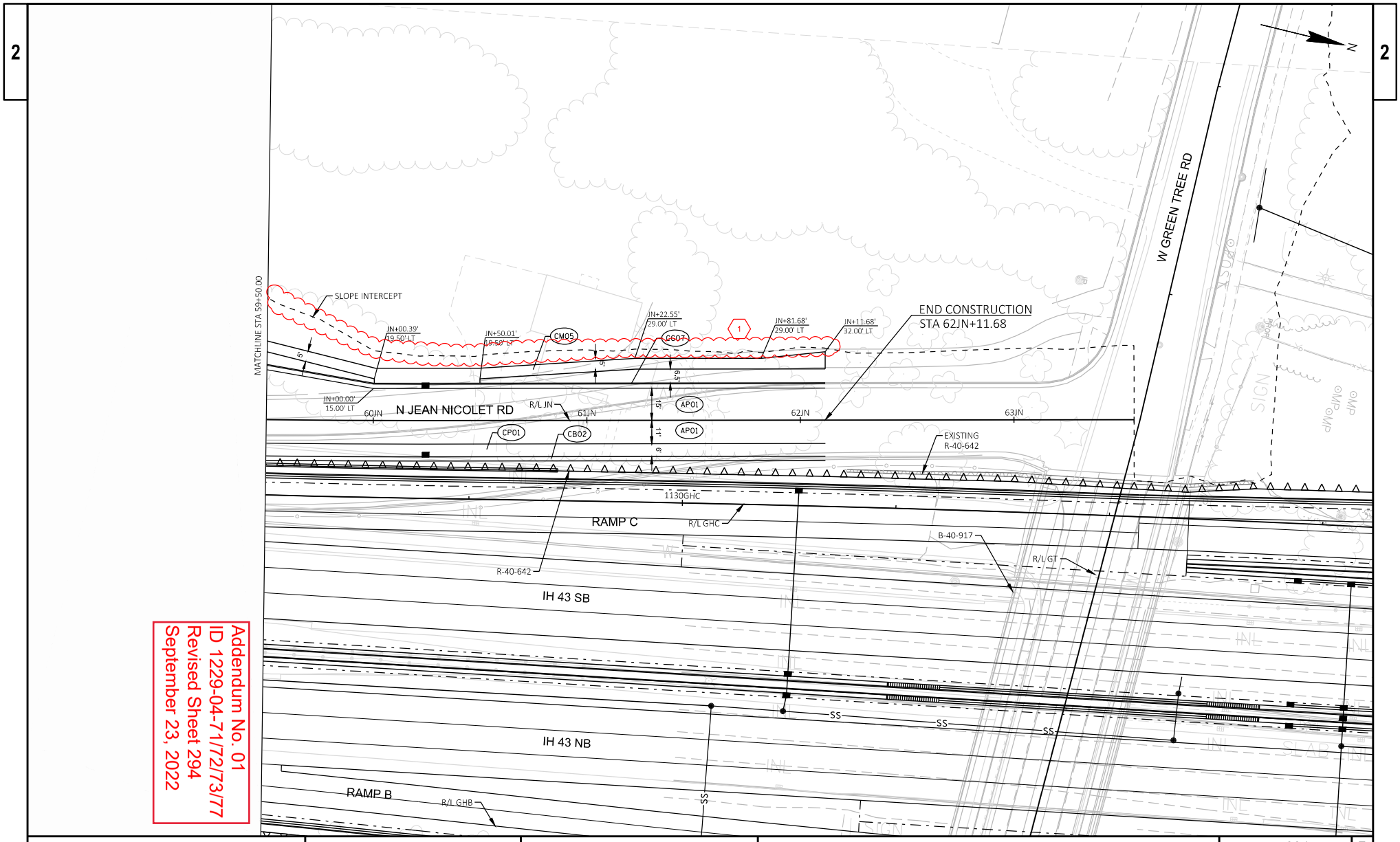
FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021204_PD_JN.DWG
LAYOUT NAME : _008
PLOT DATE : 9/19/2022 8:00 AM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 293
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN DETAILS - JEAN NICOLET ROAD	SHEET 293	E

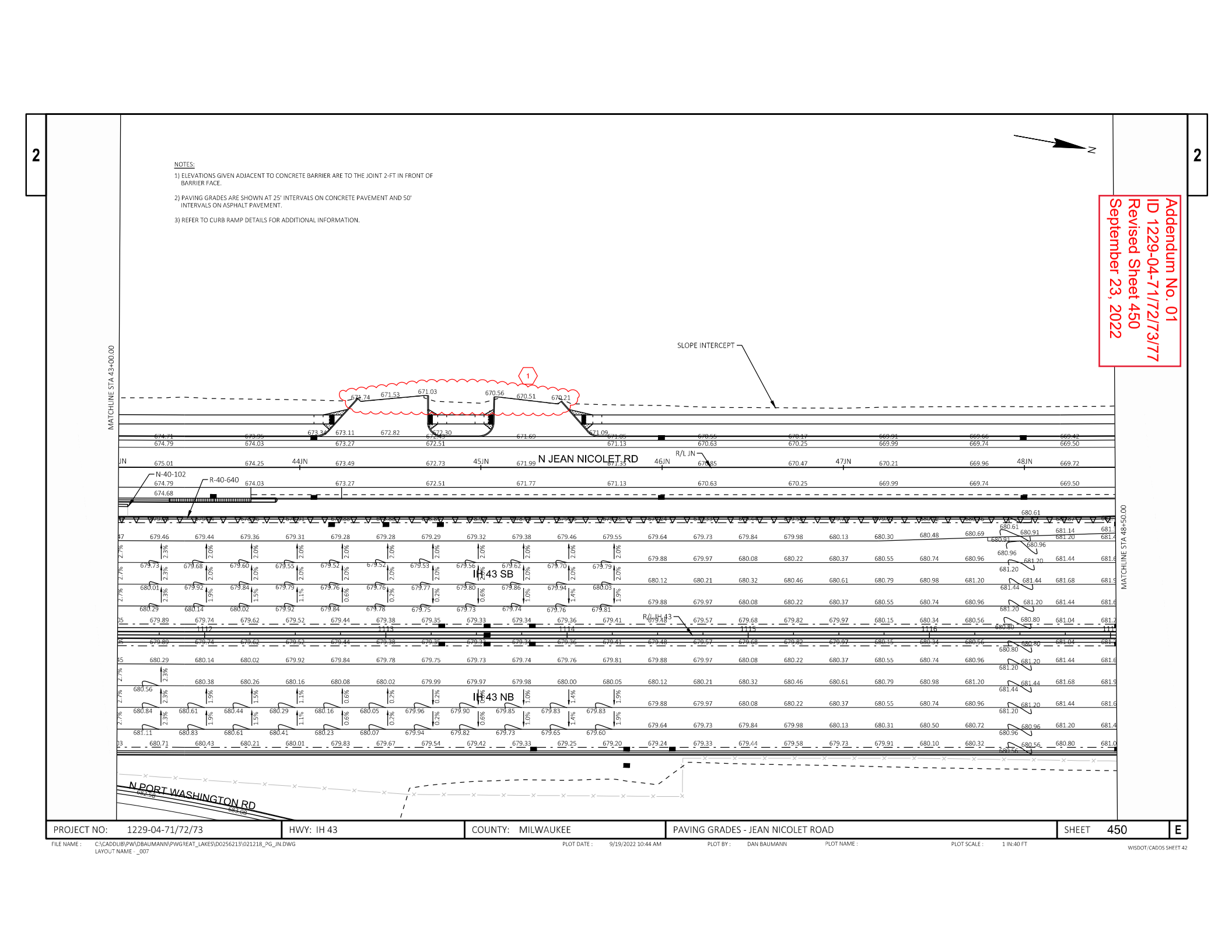
FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021204_PD_JN.DWG
LAYOUT NAME - _009
PLOT DATE : 9/19/2022 8:02 AM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 294
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN DETAILS - JEAN NICOLET ROAD	SHEET 294	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021204_PD_JN.DWG
LAYOUT NAME : _010
PLOT DATE : 9/19/2022 8:07 AM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT



PROJECT NO: 1229-04-71/72/73	HWY: IH 43	COUNTY: MILWAUKEE	PAVING GRADES - JEAN NICOLET ROAD	SHEET 450	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021218_PG_JN.DWG
LAYOUT NAME : _007
PLOT DATE : 9/19/2022 10:44 AM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT

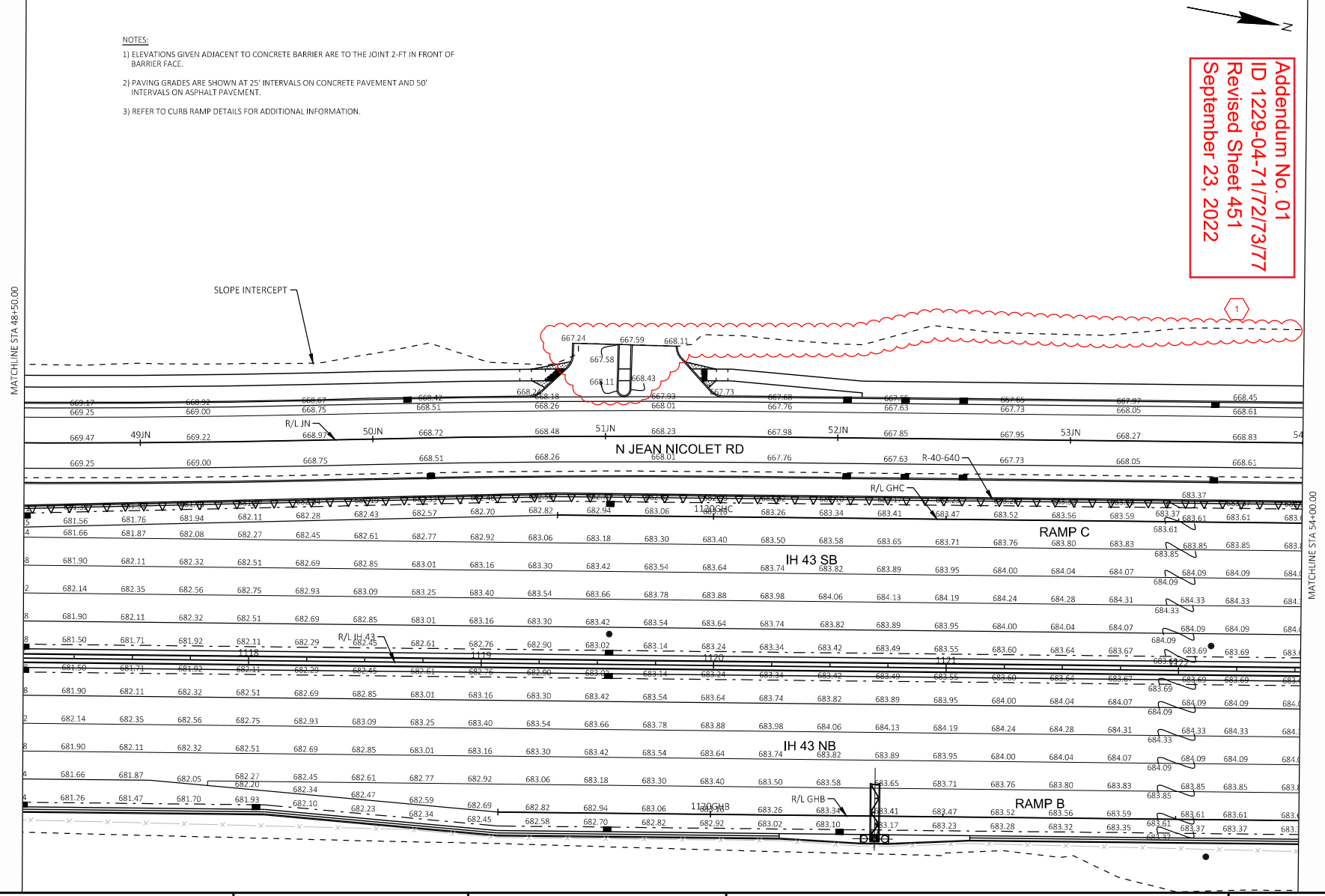
NOTES:

1) ELEVATIONS GIVEN ADJACENT TO CONCRETE BARRIER ARE TO THE JOINT 2-FT IN FRONT OF BARRIER FACE.

2) PAVING GRADES ARE SHOWN AT 25' INTERVALS ON CONCRETE PAVEMENT AND 50' INTERVALS ON ASPHALT PAVEMENT.

3) REFER TO CURB RAMP DETAILS FOR ADDITIONAL INFORMATION.

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 451
September 23, 2022



PROJECT NO: 1229-04-71/72/73	HWY: IH 43	COUNTY: MILWAUKEE	PAVING GRADES - JEAN NICOLET ROAD	SHEET 451	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021218_PG_JN.DWG
LAYOUT NAME : _008
PLOT DATE : 9/19/2022 10:43 AM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT

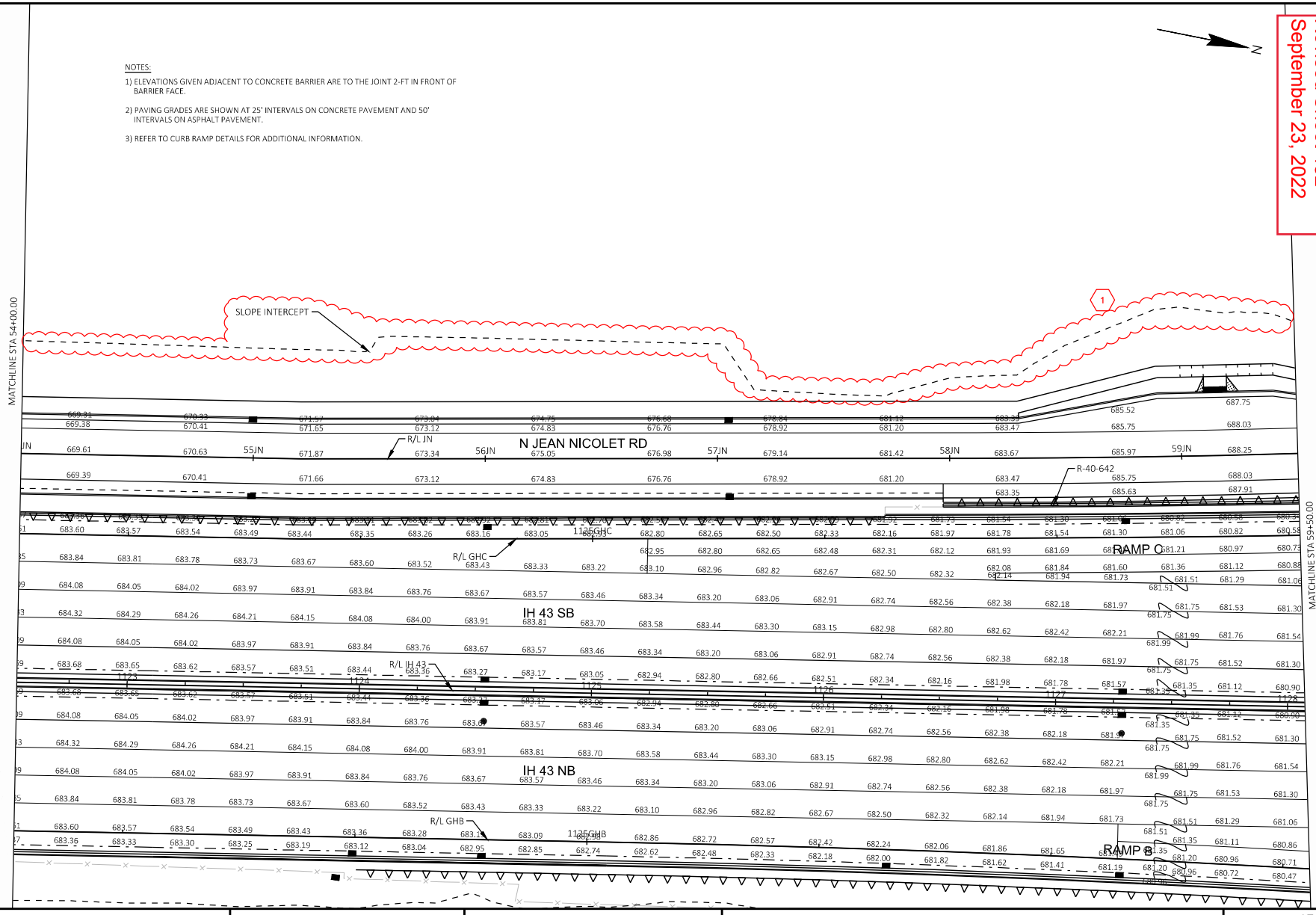
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 452
September 23, 2022

NOTES:

1) ELEVATIONS GIVEN ADJACENT TO CONCRETE BARRIER ARE TO THE JOINT 2-FT IN FRONT OF BARRIER FACE.

2) PAVING GRADES ARE SHOWN AT 25' INTERVALS ON CONCRETE PAVEMENT AND 50' INTERVALS ON ASPHALT PAVEMENT.

3) REFER TO CURB RAMP DETAILS FOR ADDITIONAL INFORMATION.



PROJECT NO: 1229-04-71/72/73	HWY: IH 43	COUNTY: MILWAUKEE	PAVING GRADES - JEAN NICOLET ROAD	SHEET 452	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021218_PG_JN.DWG
LAYOUT NAME : _009
PLOT DATE : 9/19/2022 8:44 AM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT

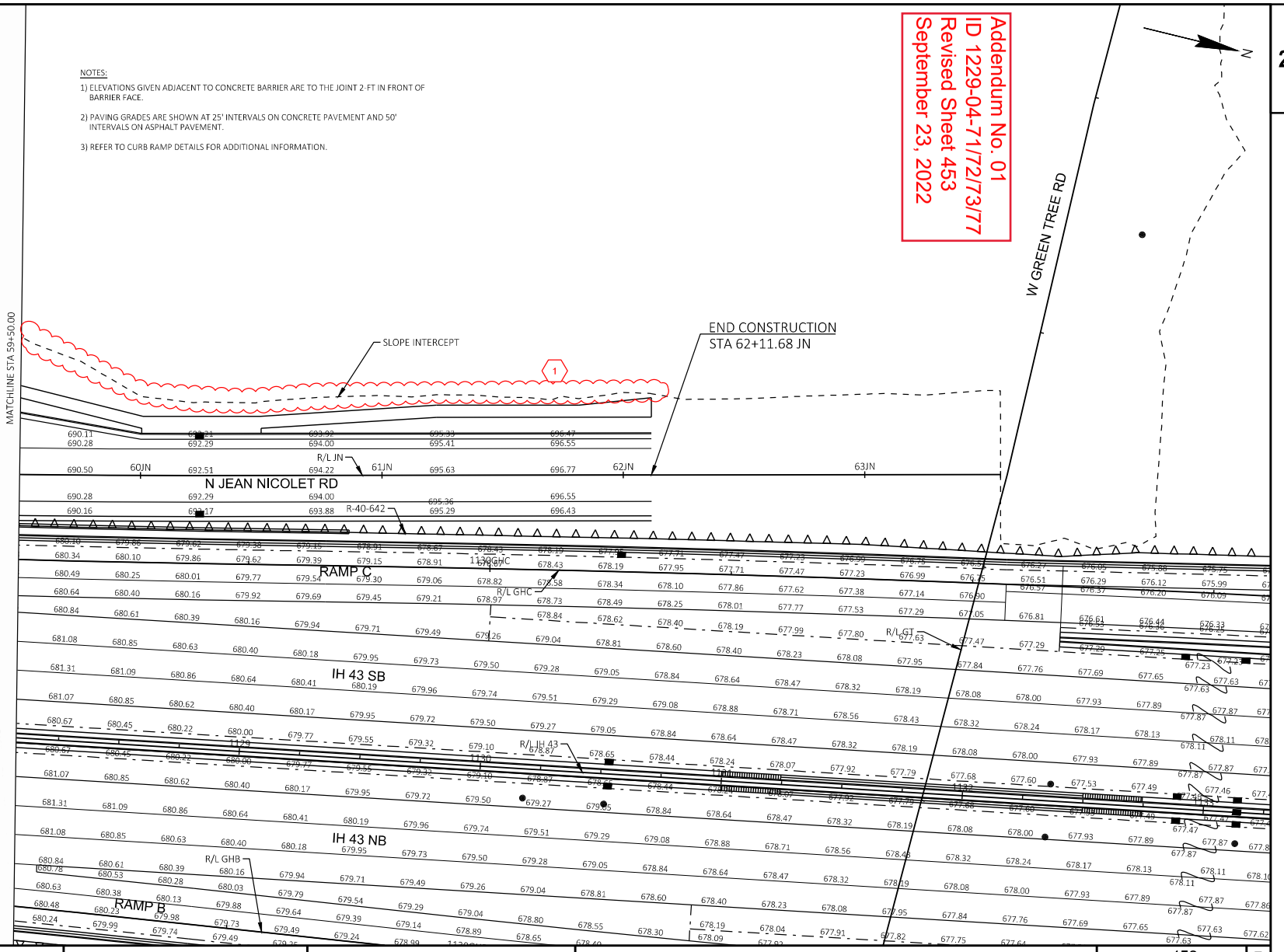
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 453
September 23, 2022

NOTES:

1) ELEVATIONS GIVEN ADJACENT TO CONCRETE BARRIER ARE TO THE JOINT 2-FT IN FRONT OF BARRIER FACE.

2) PAVING GRADES ARE SHOWN AT 25' INTERVALS ON CONCRETE PAVEMENT AND 50' INTERVALS ON ASPHALT PAVEMENT.

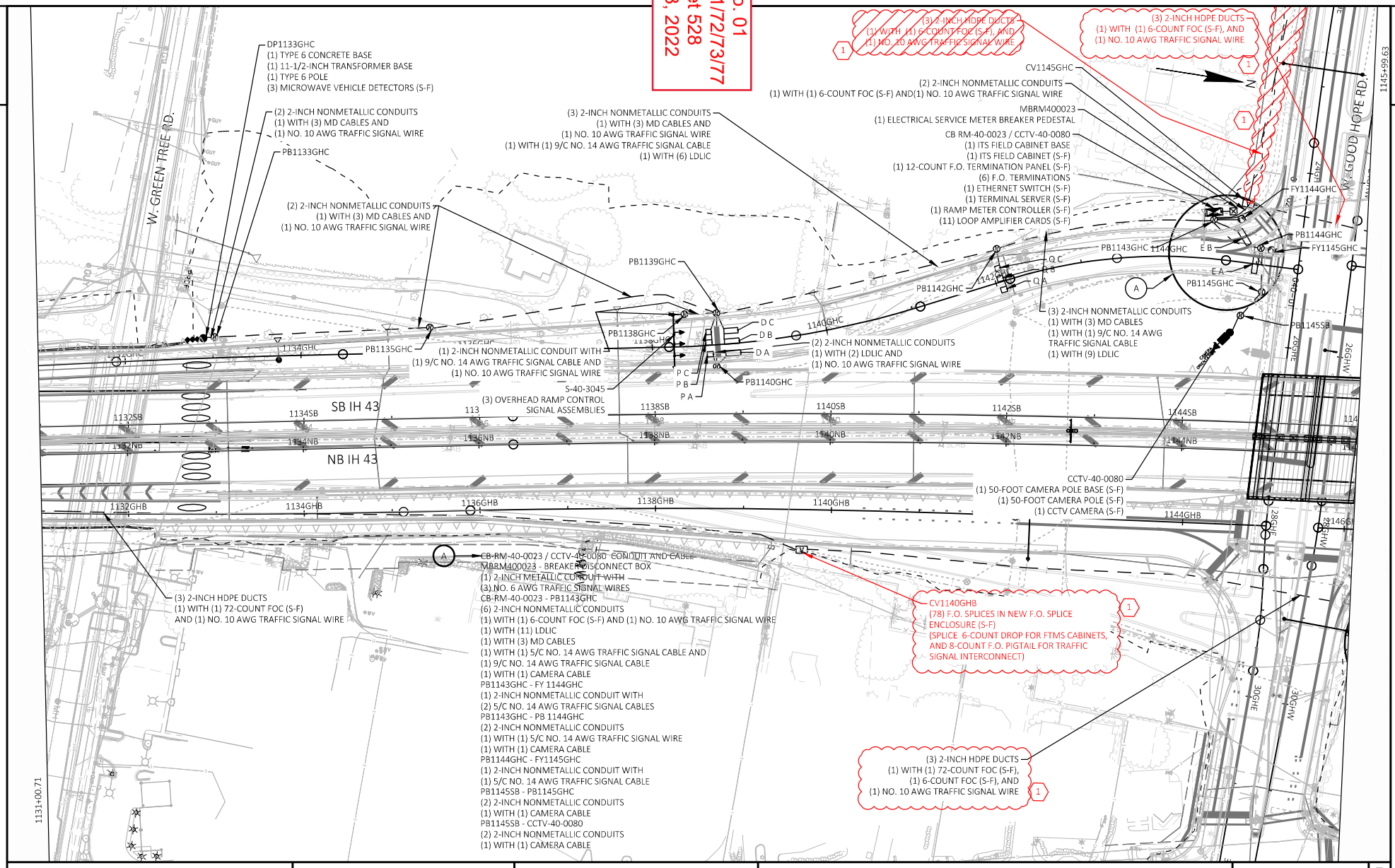
3) REFER TO CURB RAMP DETAILS FOR ADDITIONAL INFORMATION.



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN DETAILS - JEAN NICOLET ROAD	SHEET 453	E

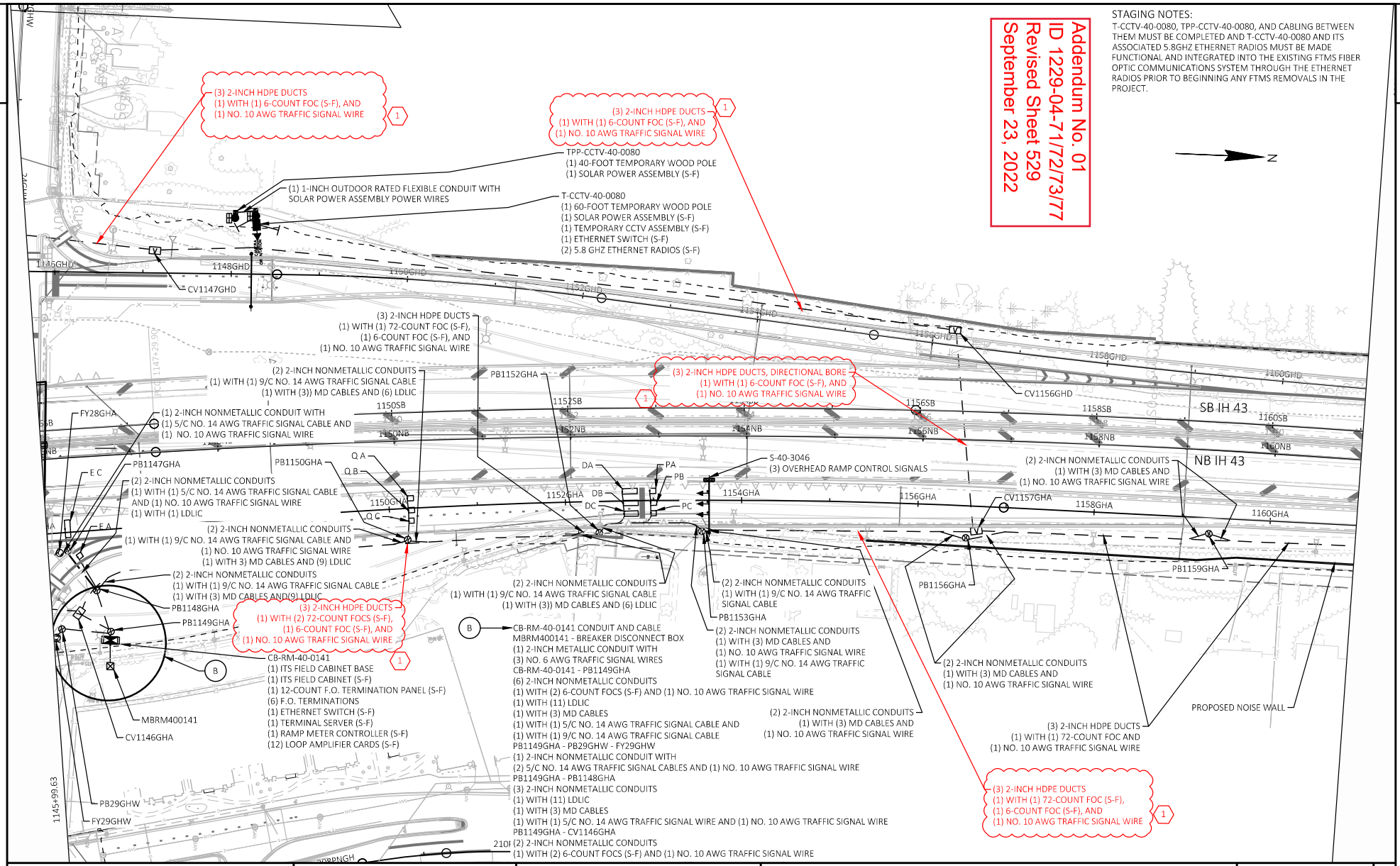
FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021218_PG_JN.DWG
LAYOUT NAME : _010
PLOT DATE : 9/19/2022 8:44 AM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT

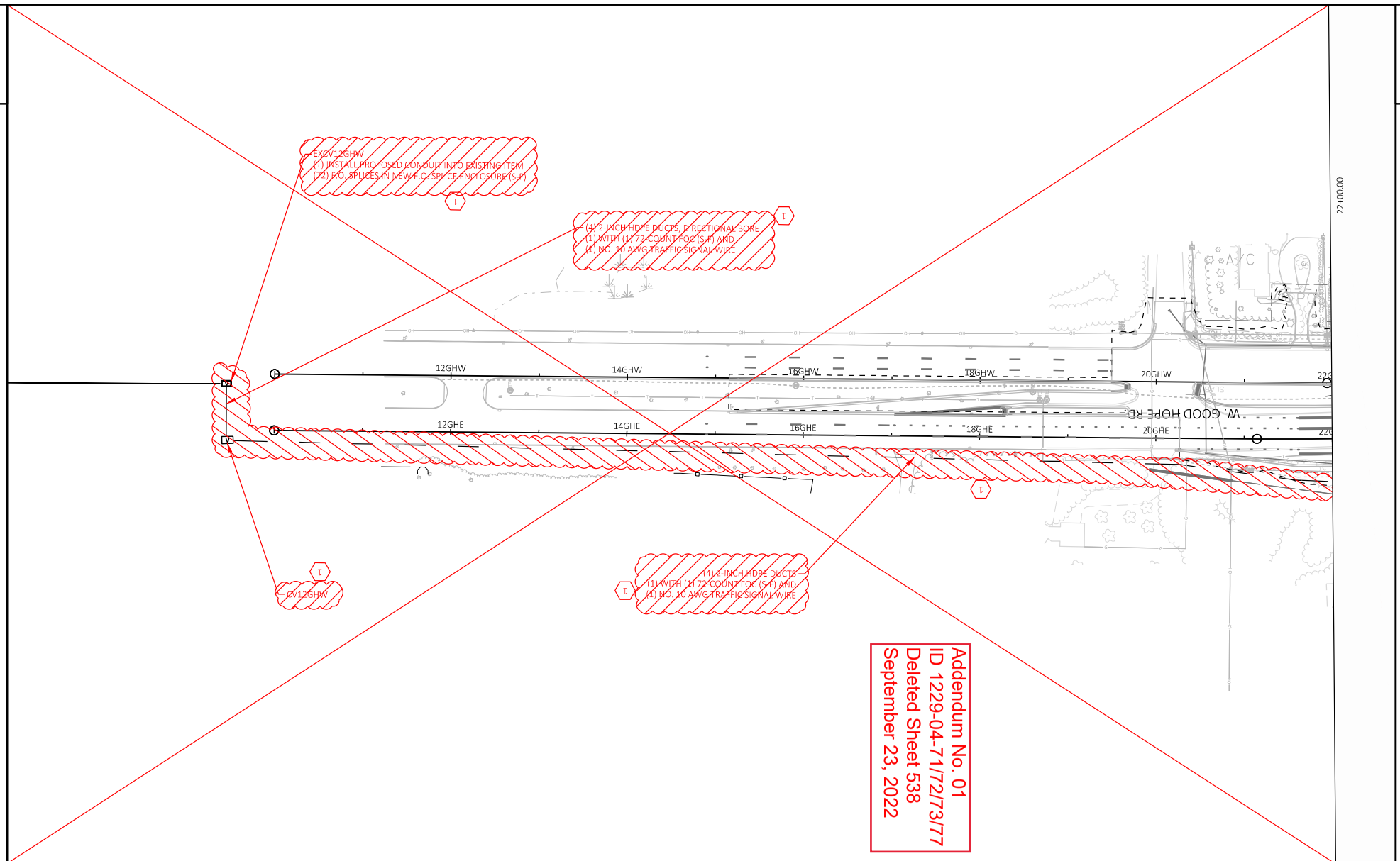
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 528
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	FTMS PLAN SHEETS	SHEET 528	E

FILE NAME : C:\CADDLIB\PW\PKUTZ\PWGREAT_LAKES\D0246023\FM_IH_43_GH_BD.DWG
LAYOUT NAME - (05)
PLOT DATE : 9/20/2022 12:53 PM
PLOT BY : PAUL KUTZ
PLOT NAME :
PLOT SCALE : 1 IN:100 FT


Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 529
September 23, 2022
STAGING NOTES:
T-CCTV-40-0080, TPP-CCTV-40-0080, AND CABLING BETWEEN THEM MUST BE COMPLETED AND T-CCTV-40-0080 AND ITS ASSOCIATED 5.8GHZ ETHERNET RADIOS MUST BE MADE FUNCTIONAL AND INTEGRATED INTO THE EXISTING FTMS FIBER OPTIC COMMUNICATIONS SYSTEM THROUGH THE ETHERNET RADIOS PRIOR TO BEGINNING ANY FTMS REMOVALS IN THE PROJECT.
(3) 2-INCH HDPE DUCTS
(1) WITH (1) 6-COUNT FOC (S-F), AND
(1) NO. 10 AWG TRAFFIC SIGNAL WIRE
TPP-CCTV-40-0080
(1) 40-FOOT TEMPORARY WOOD POLE
(1) SOLAR POWER ASSEMBLY (S-F)
(1) 1-INCH OUTDOOR RATED FLEXIBLE CONDUIT WITH SOLAR POWER ASSEMBLY POWER WIRES
T-CCTV-40-0080
(1) 60-FOOT TEMPORARY WOOD POLE
(1) SOLAR POWER ASSEMBLY (S-F)
(1) TEMPORARY CCTV ASSEMBLY (S-F)
(1) ETHERNET SWITCH (S-F)
(2) 5.8 GHZ ETHERNET RADIOS (S-F)
CV1147GHD
CV1156GHD
(3) 2-INCH HDPE DUCTS
(1) WITH (1) 72-COUNT FOC (S-F),
(1) 6-COUNT FOC (S-F), AND
(1) NO. 10 AWG TRAFFIC SIGNAL WIRE
(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) 9/C NO. 14 AWG TRAFFIC SIGNAL CABLE
(1) WITH (3)) MD CABLES AND (6) LDLIC
(3) 2-INCH HDPE DUCTS, DIRECTIONAL BORE
(1) WITH (1) 6-COUNT FOC (S-F), AND
(1) NO. 10 AWG TRAFFIC SIGNAL WIRE
(1) 2-INCH NONMETALLIC CONDUIT WITH
(1) 5/C NO. 14 AWG TRAFFIC SIGNAL CABLE AND
(1) NO. 10 AWG TRAFFIC SIGNAL WIRE
S-40-3046
(3) OVERHEAD RAMP CONTROL SIGNALS
SB IH 43
NB IH 43
(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (3) MD CABLES AND
(1) NO. 10 AWG TRAFFIC SIGNAL WIRE
(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) 5/C NO. 14 AWG TRAFFIC SIGNAL CABLE
AND (1) NO. 10 AWG TRAFFIC SIGNAL WIRE
(1) WITH (1) LDLIC
(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) 9/C NO. 14 AWG TRAFFIC SIGNAL CABLE AND
(1) NO. 10 AWG TRAFFIC SIGNAL WIRE
(1) WITH 3) MD CABLES AND (9) LDLIC
(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (1) 9/C NO. 14 AWG TRAFFIC SIGNAL CABLE
(1) WITH (3) MD CABLES AND(9) LDLIC
(3) 2-INCH HDPE DUCTS
(1) WITH (2) 72-COUNT FOCS (S-F),
(1) 6-COUNT FOC (S-F), AND
(1) NO. 10 AWG TRAFFIC SIGNAL WIRE
CB-RM-40-0141
(1) ITS FIELD CABINET BASE
(1) ITS FIELD CABINET (S-F)
(1) 12-COUNT F.O. TERMINATION PANEL (S-F)
(6) F.O. TERMINATIONS
(1) ETHERNET SWITCH (S-F)
(1) TERMINAL SERVER (S-F)
(1) RAMP METER CONTROLLER (S-F)
(12) LOOP AMPLIFIER CARDS (S-F)
CB-RM-40-0141 CONDUIT AND CABLE
MBRM400141 - BREAKER DISCONNECT BOX
(1) 2-INCH METALLIC CONDUIT WITH
(3) NO. 6 AWG TRAFFIC SIGNAL WIRES
CB-RM-40-0141 - PB1149GHA
(6) 2-INCH NONMETALLIC CONDUITS
(1) WITH (2) 6-COUNT FOCS (S-F) AND (1) NO. 10 AWG TRAFFIC SIGNAL WIRE
(1) WITH (11) LDLIC
(1) WITH (3) MD CABLES
(1) WITH (1) 5/C NO. 14 AWG TRAFFIC SIGNAL CABLE AND
(1) WITH (1) 9/C NO. 14 AWG TRAFFIC SIGNAL CABLE
PB1149GHA - PB29GHW - FY29GHW
(1) 2-INCH NONMETALLIC CONDUIT WITH
(2) 5/C NO. 14 AWG TRAFFIC SIGNAL CABLES AND (1) NO. 10 AWG TRAFFIC SIGNAL WIRE
PB1149GHA - PB1148GHA
(3) 2-INCH NONMETALLIC CONDUITS
(1) WITH (11) LDLIC
(1) WITH (3) MD CABLES
(1) WITH (1) 5/C NO. 14 AWG TRAFFIC SIGNAL WIRE AND (1) NO. 10 AWG TRAFFIC SIGNAL WIRE
PB1149GHA - CV1146GHA
(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (2) 6-COUNT FOCS (S-F) AND (1) NO. 10 AWG TRAFFIC SIGNAL WIRE
(2) 2-INCH NONMETALLIC CONDUITS
(1) WITH (3) MD CABLES AND
(1) NO. 10 AWG TRAFFIC SIGNAL WIRE
(3) 2-INCH HDPE DUCTS
(1) WITH (1) 72-COUNT FOC AND
(1) NO. 10 AWG TRAFFIC SIGNAL WIRE
PROPOSED NOISE WALL
(3) 2-INCH HDPE DUCTS
(1) WITH (1) 72-COUNT FOC (S-F),
(1) 6-COUNT FOC (S-F), AND
(1) NO. 10 AWG TRAFFIC SIGNAL WIRE
PB1147GHA
PB1148GHA
PB1149GHA
PB1150GHA
PB1152GHA
PB1153GHA
PB1156GHA
PB1159GHA
PB29GHW
FY28GHA
FY29GHW
MBRM400141
CV1146GHA
CV1157GHA
1145GHD
1148GHD
1150GHD
1152GHD
1154GHD
1156GHD
1158GHD
1160GHD
1145+99.63
1147+29.90
PROJECT NO: 1229-04-73
HWY: IH 43
COUNTY: MILWAUKEE
FTMS DESIGN
SHEET 529 E
FILE NAME : C:\CADDLIB\PW\PKUTZ\PWGREAT_LAKES\D0246023\FM_IH_43_GH_BD.DWG
LAYOUT NAME - (06)
PLOT DATE : 9/20/2022 12:52 PM
PLOT BY : PAUL KUTZ
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



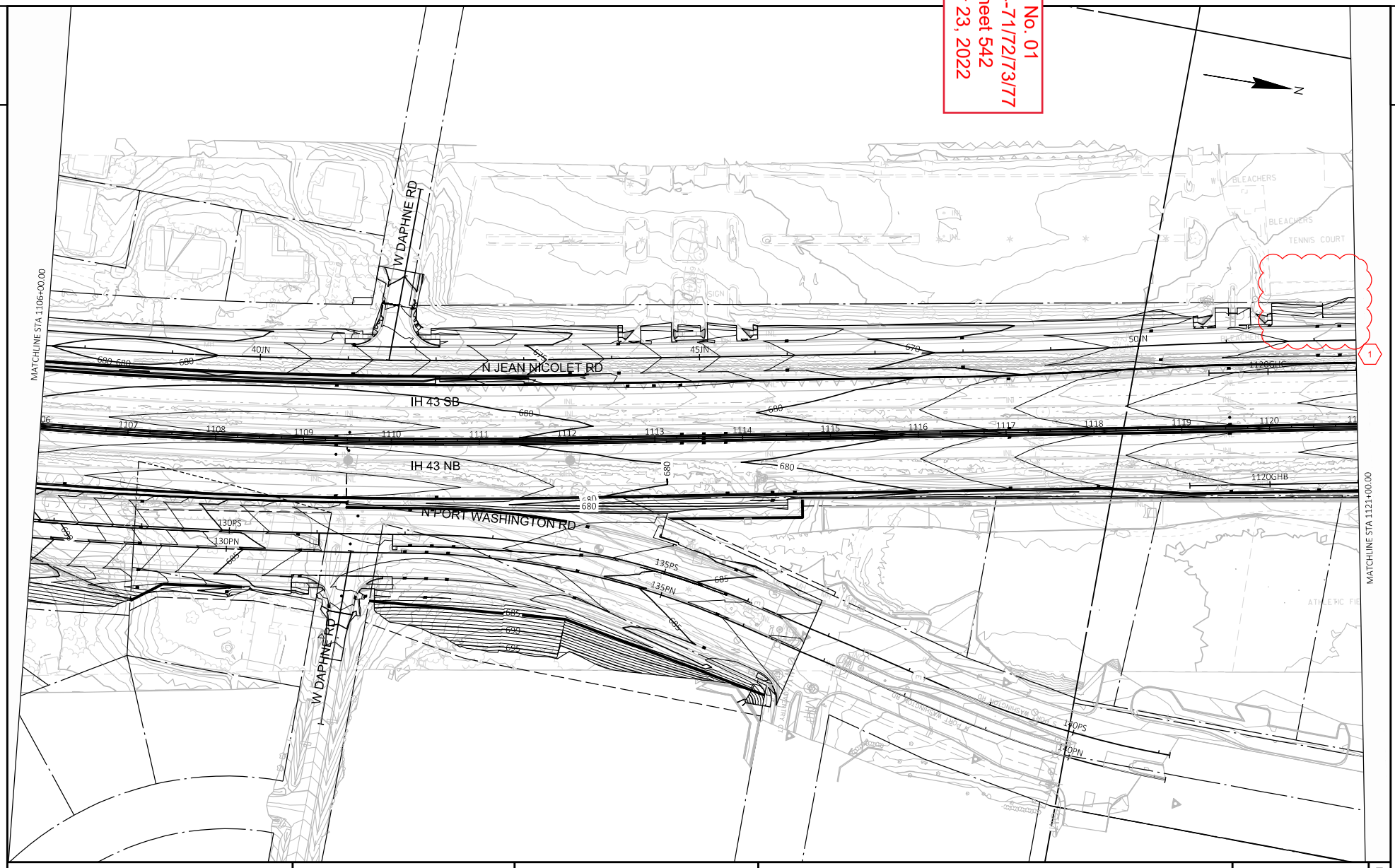
Addendum No. 01
ID 1229-04-71/72/73/77
Deleted Sheet 538
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	FTMS PLAN SHEETS	SHEET 539	E

FILE NAME : C:\CADDLIB\PW\PKUTZ\PWGREAT_LAKES\D0246023\FM_IH_43_GH_BD.DWG
LAYOUT NAME - (16)
PLOT DATE : 9/20/2022 12:58 PM
PLOT BY : PAUL KUTZ
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

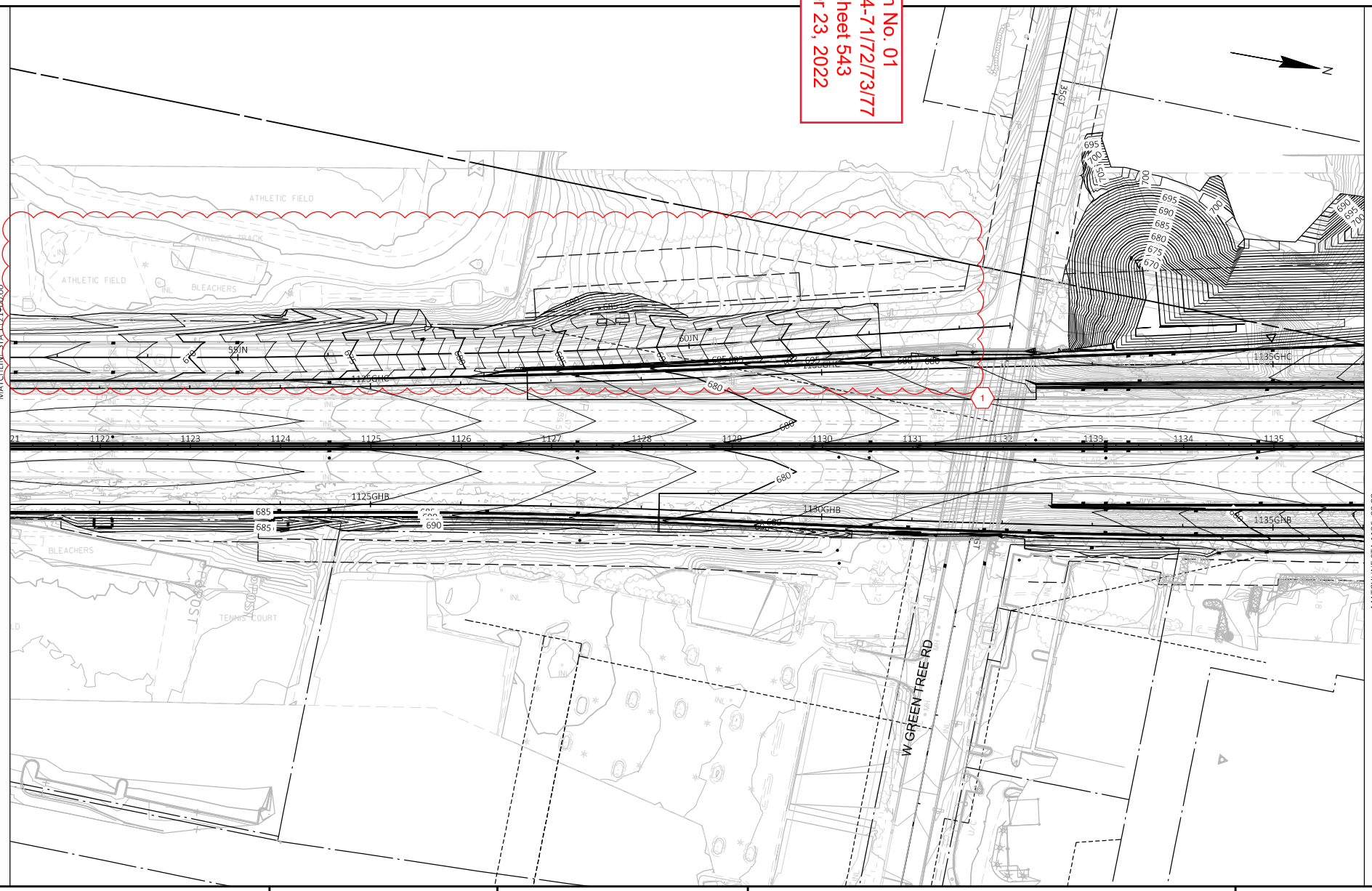
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 542
September 23, 2022



PROJECT NO: 1229-04-71/72/73	HWY: IH 43	COUNTY: MILWAUKEE	CONTOUR MAP: MAINLINE	SHEET 542	E

FILE NAME : C:\CADDLIB\PW\CRKASTEN\GREATLAKES\D0256213\021601_CM_ML.DWG
LAYOUT NAME : _003
PLOT DATE : 9/18/2022 2:58 PM
PLOT BY : CECELIA TICHELAAR
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 543
September 23, 2022



PROJECT NO: 1229-04-71/72/73	HWY: IH 43	COUNTY: MILWAUKEE	CONTOUR MAP: MAINLINE	SHEET 543	E

FILE NAME : C:\CADDLIB\PW\CRKASTEN\GREATLAKES\D0256213\021601_CM_ML.DWG
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PLOT BY : CECELIA TICHELAAR
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

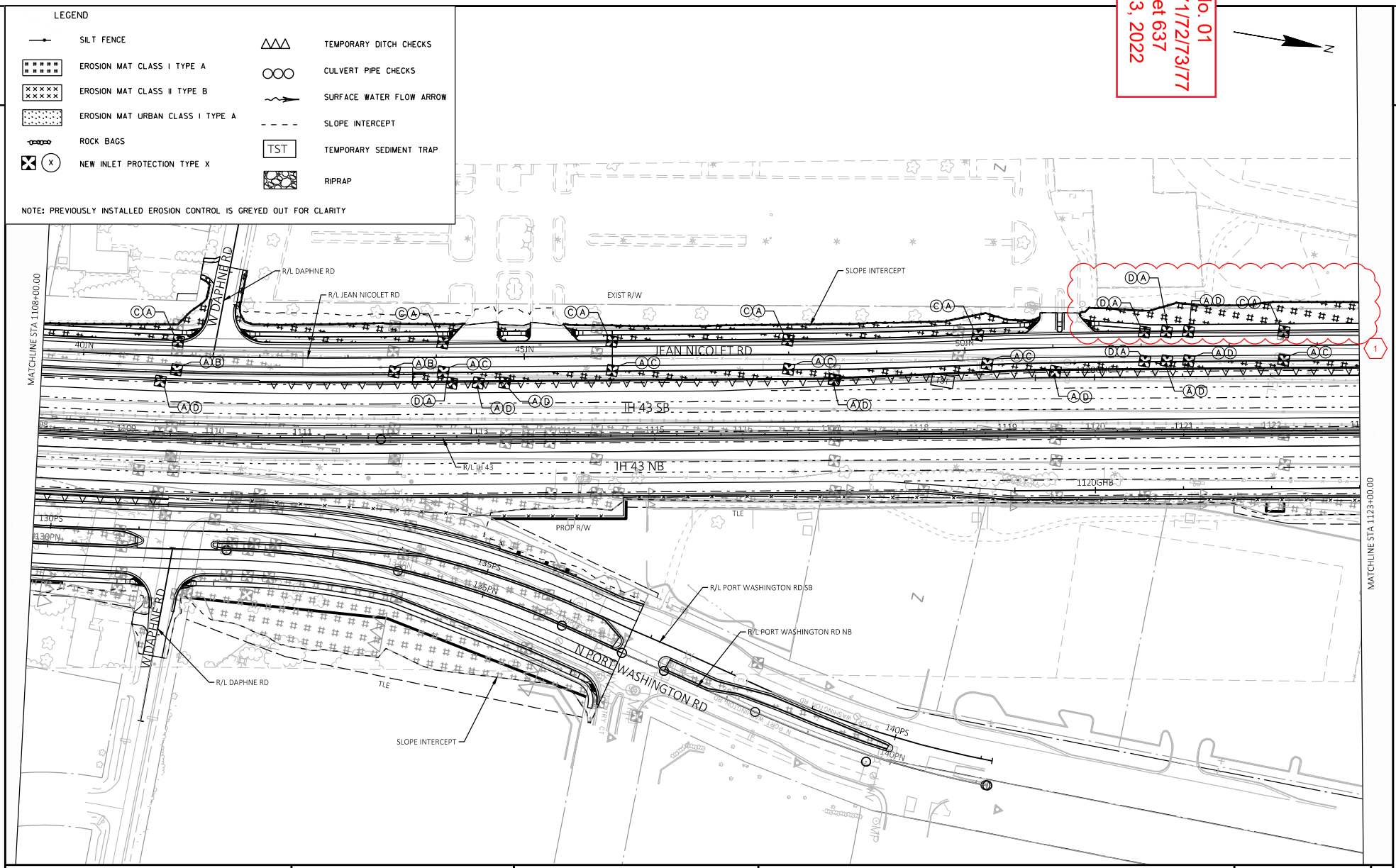
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 637
September 23, 2022

2

LEGEND

- SILT FENCE
- EROSION MAT CLASS I TYPE A
- EROSION MAT CLASS II TYPE B
- EROSION MAT URBAN CLASS I TYPE A
- ROCK BAGS
- NEW INLET PROTECTION TYPE X
- TEMPORARY DITCH CHECKS
- CULVERT PIPE CHECKS
- SURFACE WATER FLOW ARROW
- SLOPE INTERCEPT
- TST — TEMPORARY SEDIMENT TRAP
- RIPRAP

NOTE: PREVIOUSLY INSTALLED EROSION CONTROL IS GREYED OUT FOR CLARITY



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	EROSION CONTROL - STAGE 4 - MAIN LINE	SHEET 637	E

FILE NAME : C:\CADDLIB\PW\CRKASTEN\GREATLAKES\D0256213\022010_EC_ML-STAGE4.DWG
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PLOT BY : CECELIA TICHELAAR
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

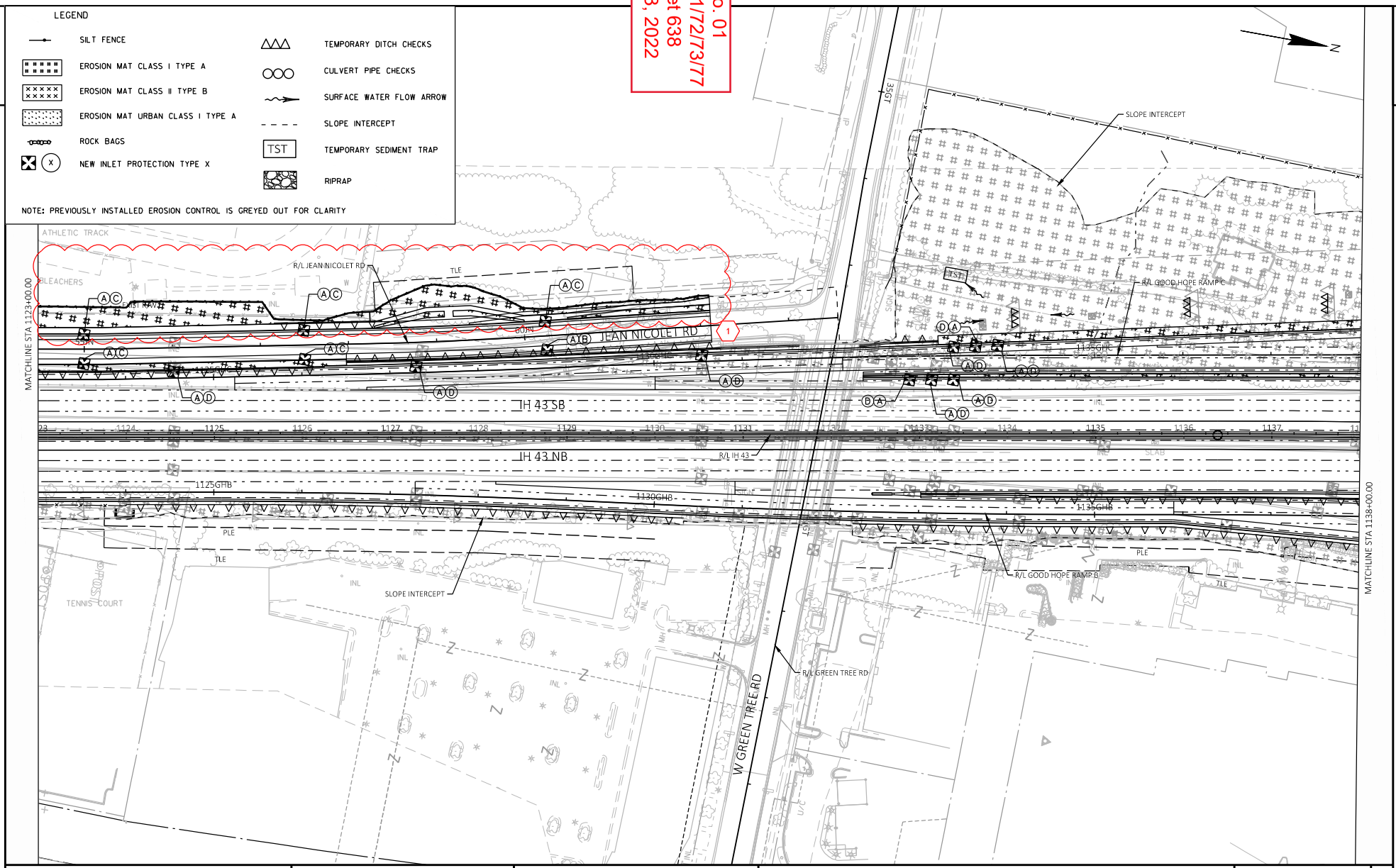
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 638
September 23, 2022

2

LEGEND

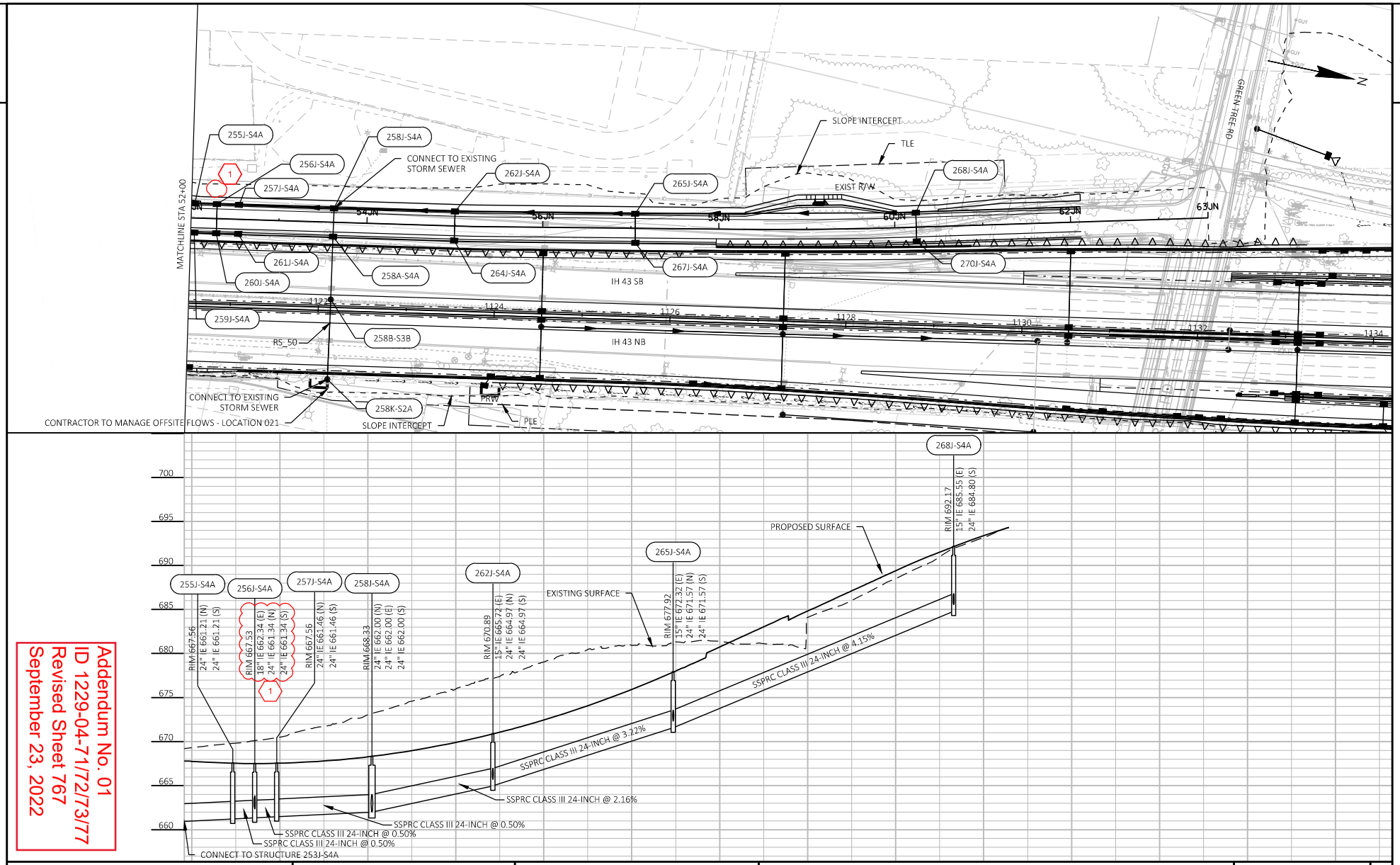
- SILT FENCE
- EROSION MAT CLASS I TYPE A
- EROSION MAT CLASS II TYPE B
- EROSION MAT URBAN CLASS I TYPE A
- ROCK BAGS
- NEW INLET PROTECTION TYPE X
- TEMPORARY DITCH CHECKS
- CULVERT PIPE CHECKS
- SURFACE WATER FLOW ARROW
- SLOPE INTERCEPT
- TST TEMPORARY SEDIMENT TRAP
- RIPRAP

NOTE: PREVIOUSLY INSTALLED EROSION CONTROL IS GREYED OUT FOR CLARITY



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	EROSION CONTROL - STAGE 4 - MAIN LINE	SHEET 638	E

FILE NAME : C:\CADDLIB\PW\CRKASTEN\GREATLAKES\D0256213\022010_EC_ML-STAGE4.DWG
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PLOT DATE : 9/19/2022 1:12 PM
PLOT BY : CECELIA TICHELAAR
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

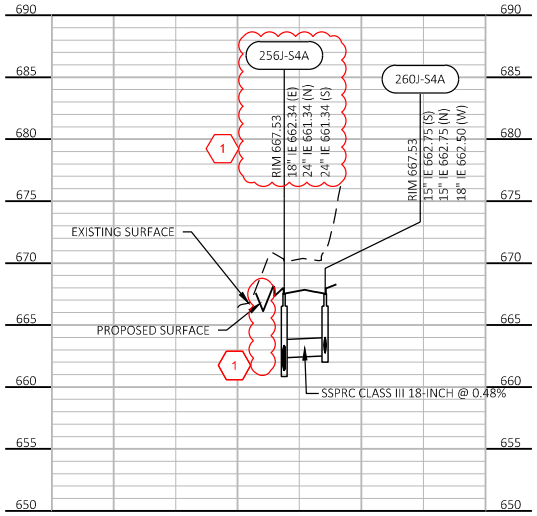


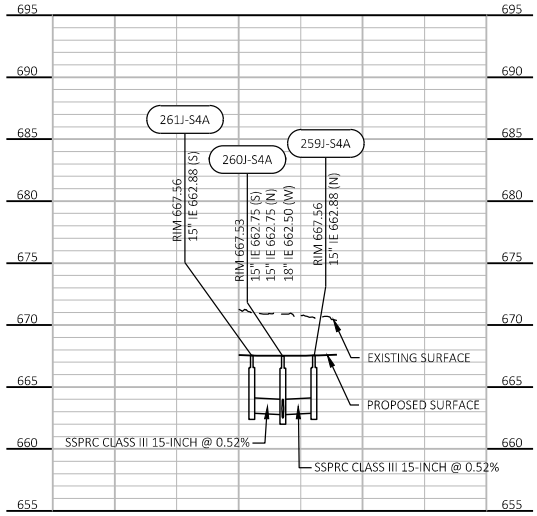
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 767
September 23, 2022

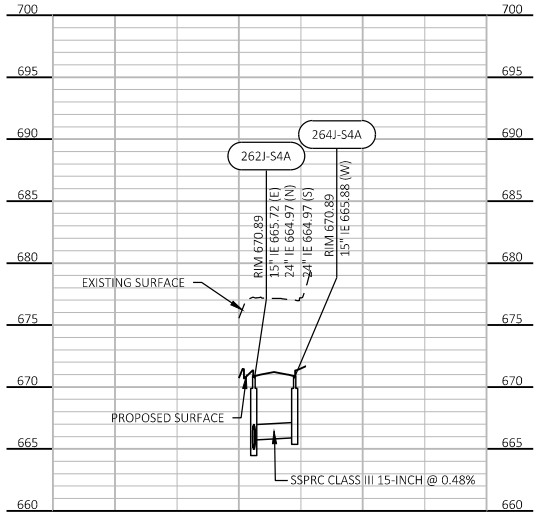
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	STORM SEWER PLAN & PROFILE SIDEROAD - JEAN NICOLET	SHEET 767	E

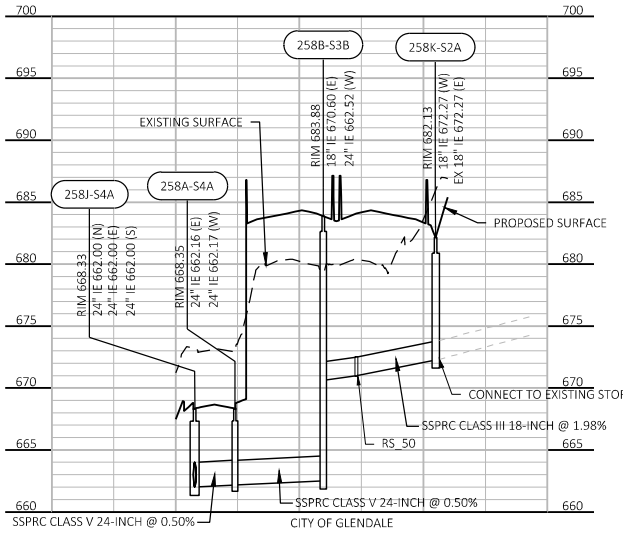
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LAYOUT NAME - _004
PLOT DATE : 9/14/2022 9:42 AM
PLOT BY : ANDREW PATEK
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

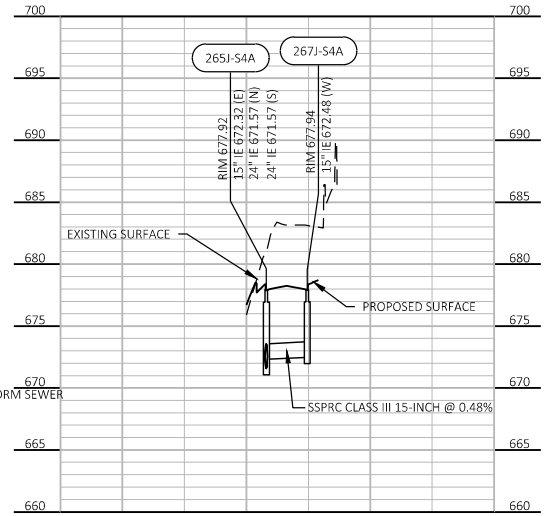
WISDOT/CADDS SHEET 41

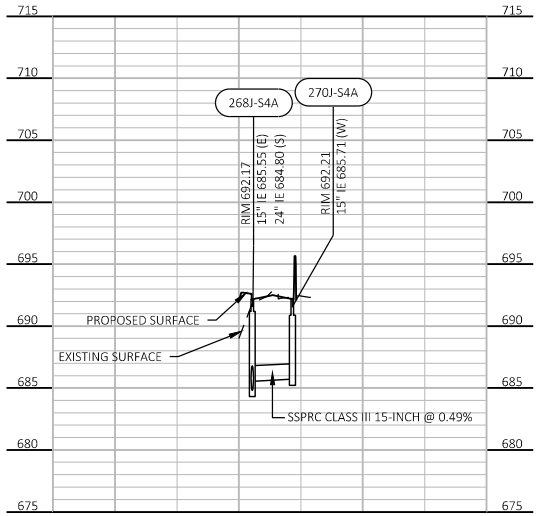










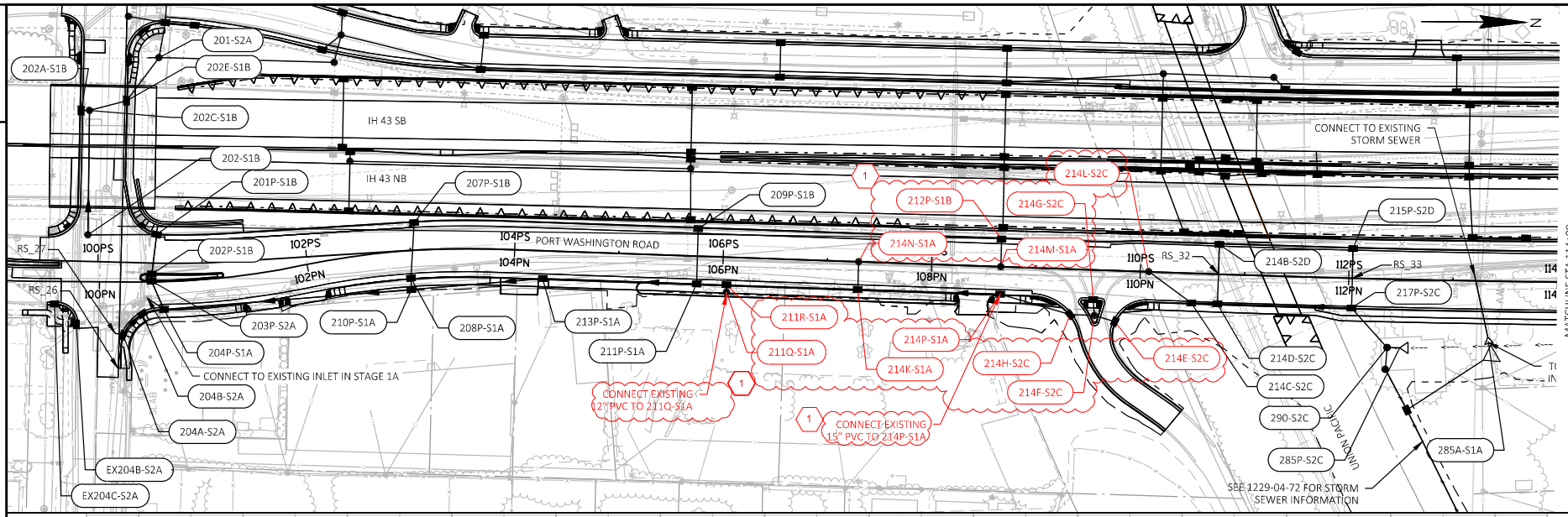


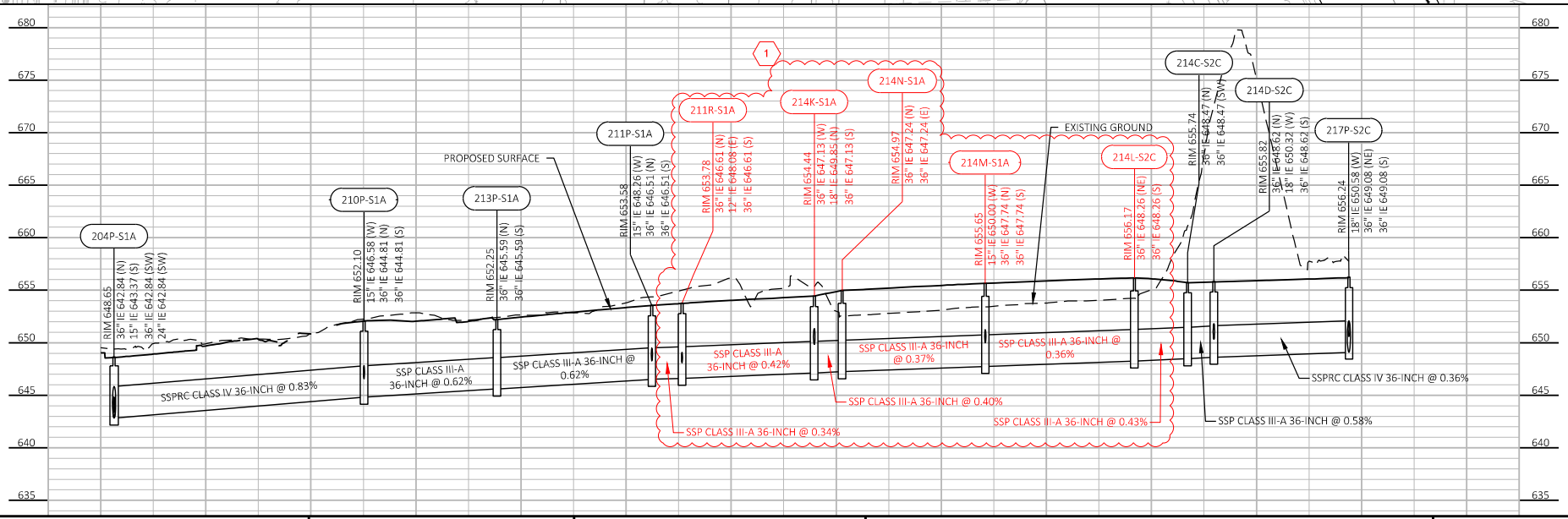
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 768
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	STORM SEWER PLAN & PROFILE SIDEROAD - JEAN NICOLET	SHEET 768	E

FILE NAME : C:\CADDLIB\PW\APATEK\GREATLAKES\D0256213\D22506_SS_GH-SR.DWG
LAYOUT NAME - _004(1)
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PLOT BY : ANDREW PATEK
PLOT NAME :
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WISDOT/CADDS SHEET 42

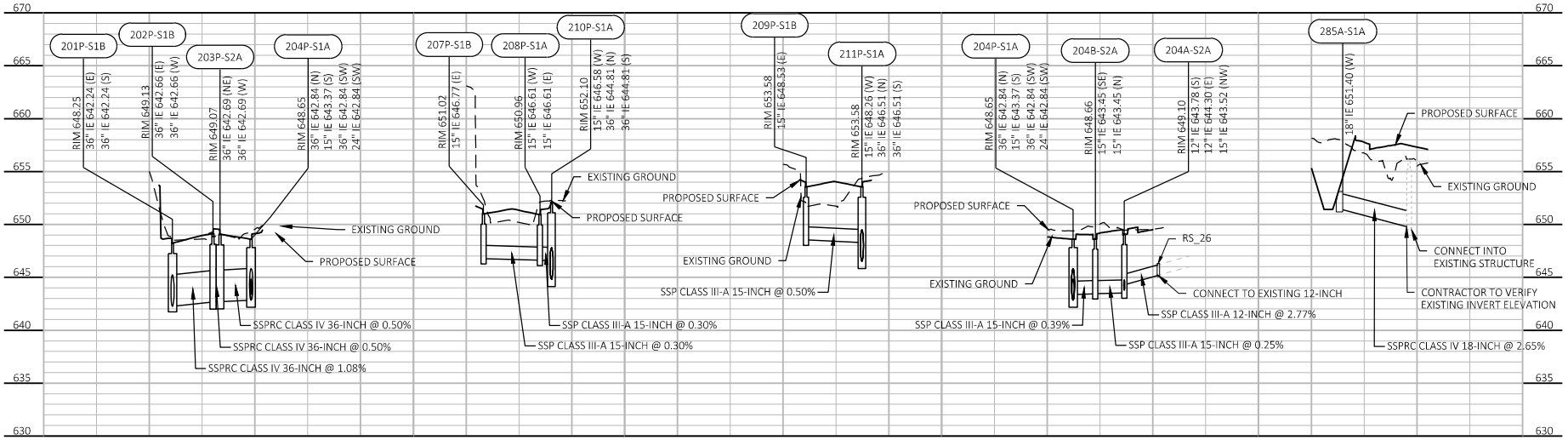


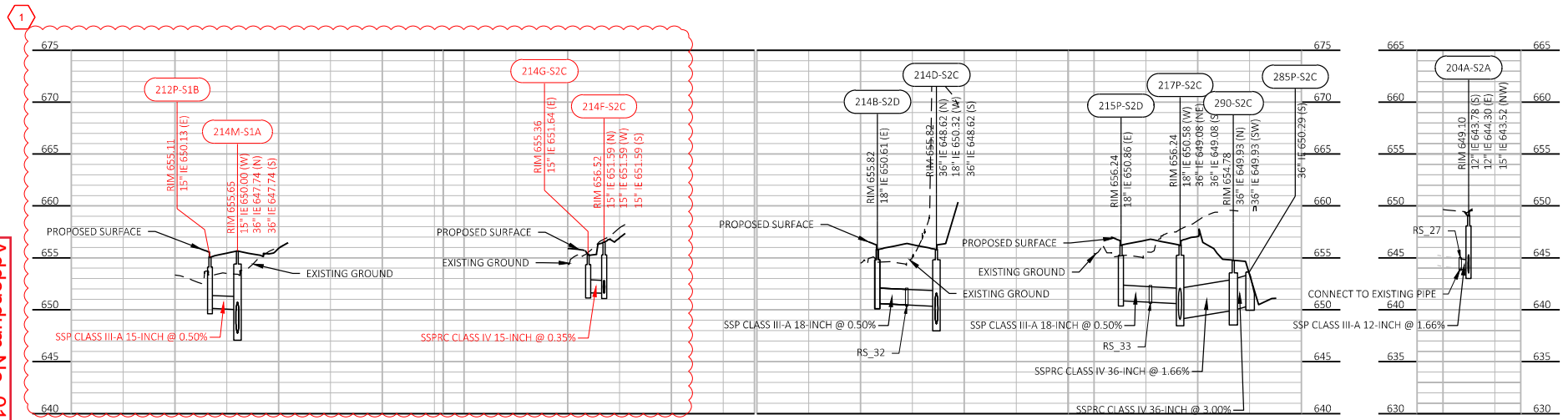


Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 797
September 23, 2022

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	STORM SEWER PLAN & PROFILE SIDEROAD - PORT WASHINGTON ROAD	SHEET 797	E

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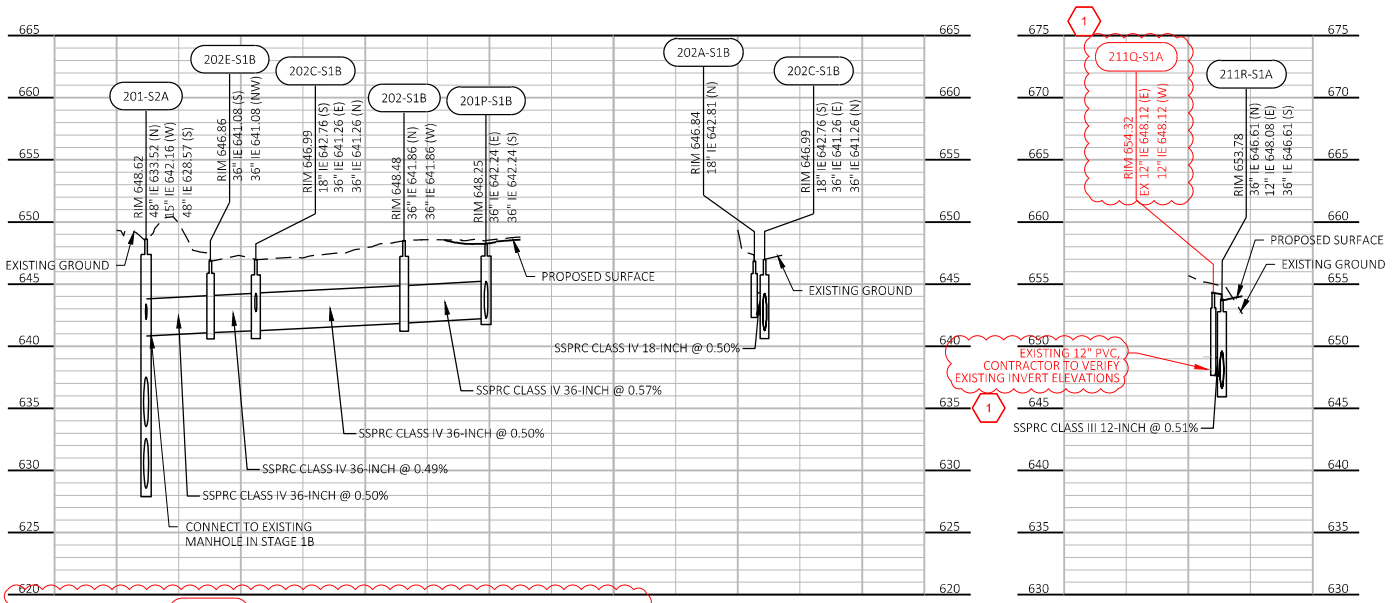


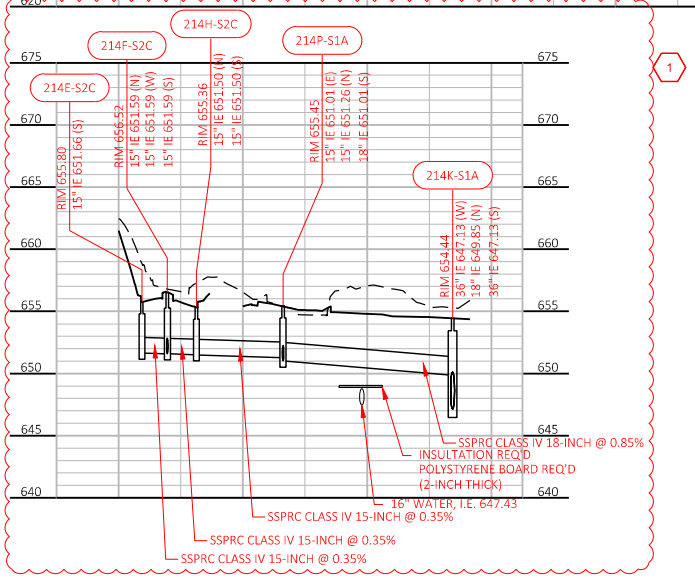


Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 798
September 23, 2022

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	STORM SEWER PLAN & PROFILE SIDEROAD - PORT WASHINGTON ROAD	SHEET 798	E

FILE NAME : C:\CADDLIB\PW\APATEK\GREATLAKES\D0256189\D22501_SS_PW.DWG
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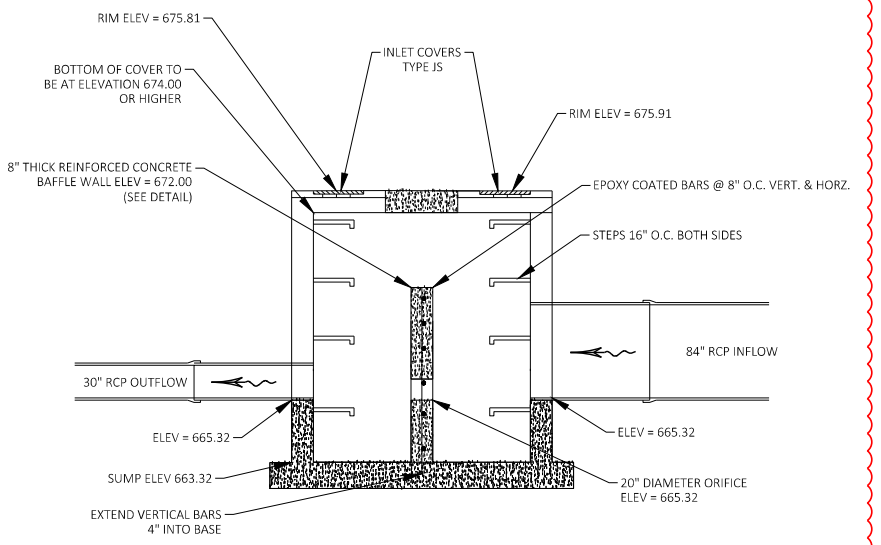




Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 799
September 23, 2022

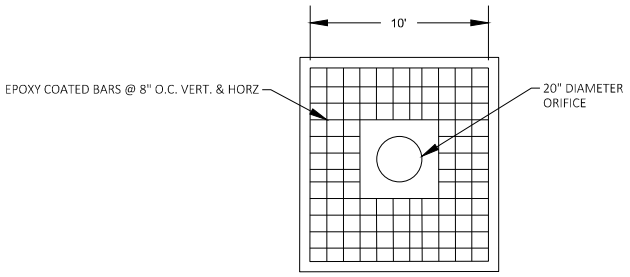
PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	STORM SEWER PLAN & PROFILE SIDEROAD - PORT WASHINGTON ROAD	SHEET 799	E

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PLOT NAME :
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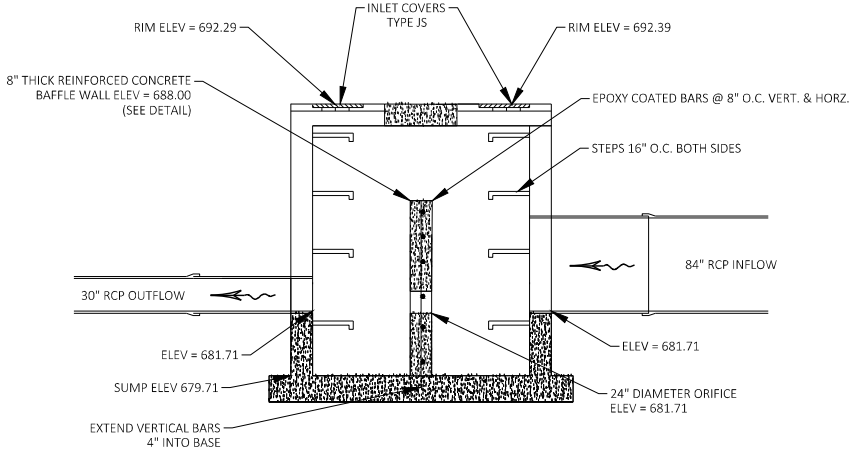
IN-LINE DETENTION 10'x10' OUTLET CONTROL MANHOLE
INLET 2057A-S2A

NOT TO SCALE



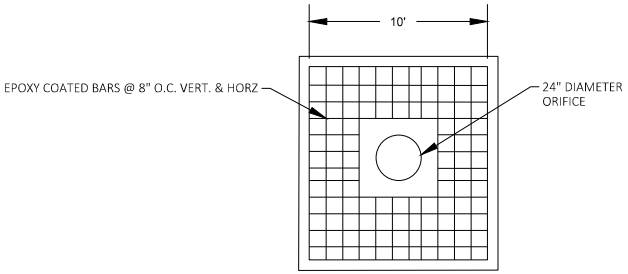
BAFFLE WALL DETAIL

NOT TO SCALE



IN-LINE DETENTION 10'x10' OUTLET CONTROL MANHOLE
INLET 2156A-S2A

NOT TO SCALE



BAFFLE WALL DETAIL

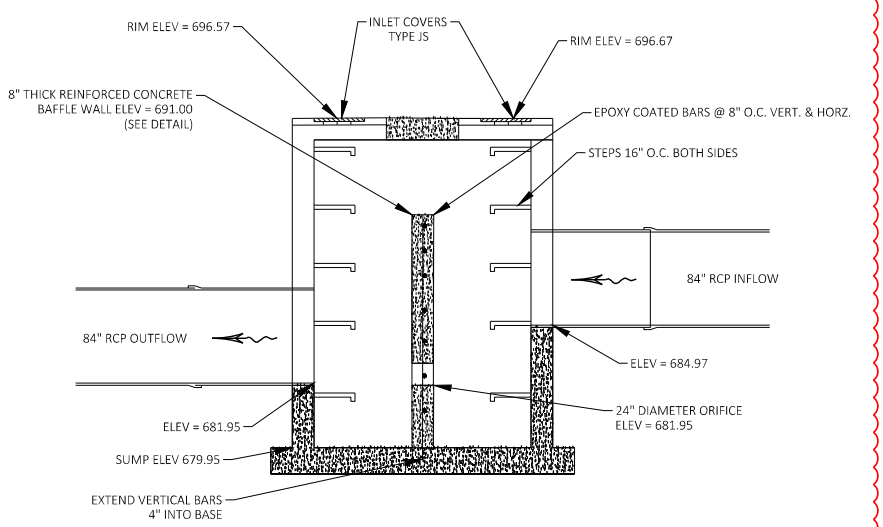
NOT TO SCALE

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 838
September 23, 2022

NOTES:

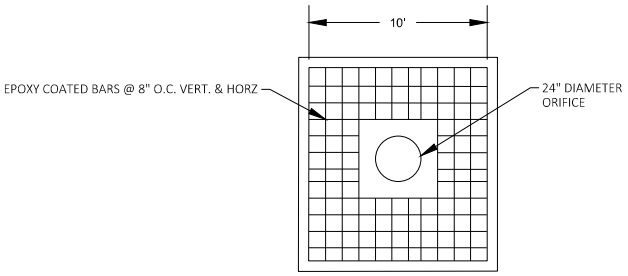
DETAILS FOR CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - DRAINAGE	SHEET 838	E



IN-LINE DETENTION 10'x10' OUTLET CONTROL MANHOLE
INLET 2162B-S2A

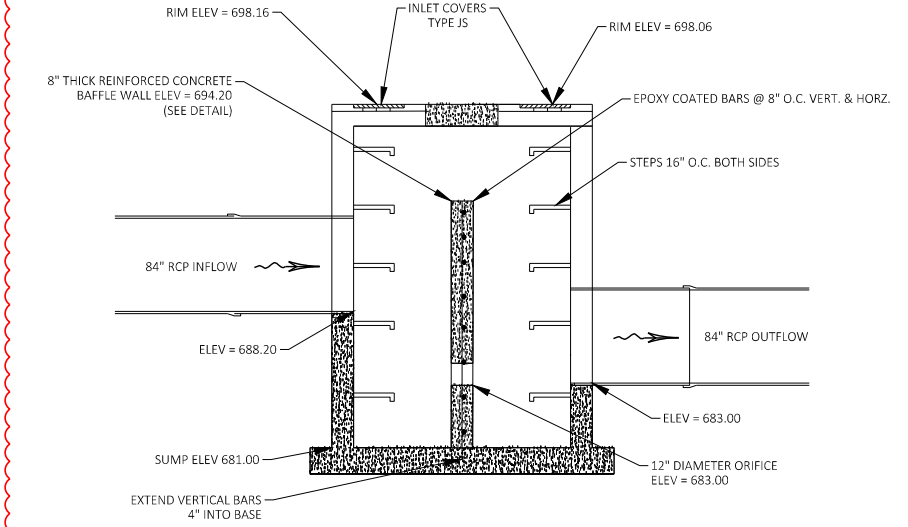
NOT TO SCALE



BAFFLE WALL DETAIL

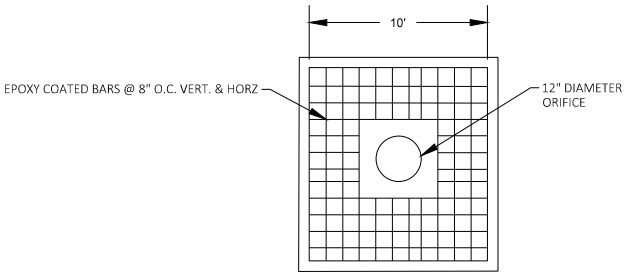
NOT TO SCALE

NOTES:



IN-LINE DETENTION 10'x10' OUTLET CONTROL MANHOLE
INLET 2212-S2A

NOT TO SCALE



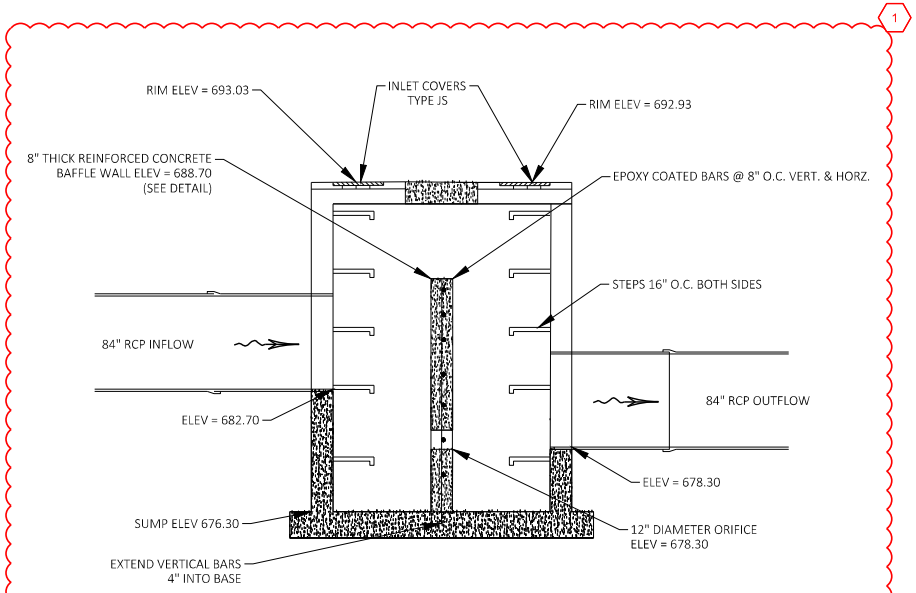
BAFFLE WALL DETAIL

NOT TO SCALE

NOTES:

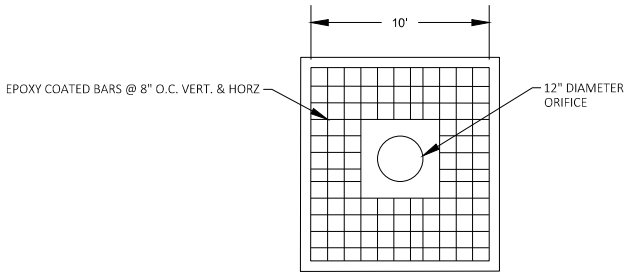
DETAILS FOR CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 839
September 23, 2022



IN-LINE DETENTION 10'x10' OUTLET CONTROL MANHOLE
INLET 2217-S2A

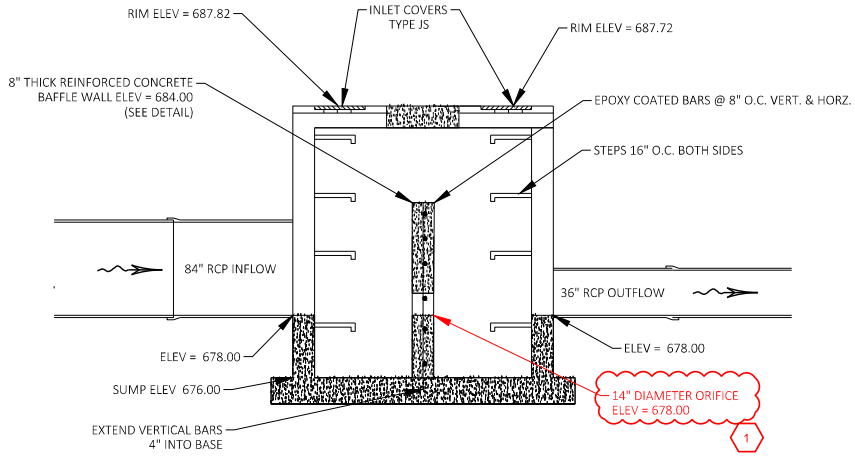
NOT TO SCALE



BAFFLE WALL DETAIL

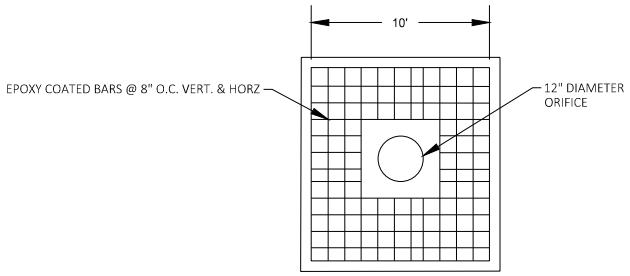
NOT TO SCALE

NOTES:



IN-LINE DETENTION 10'x10' OUTLET CONTROL MANHOLE
INLET 2222-S2A

NOT TO SCALE



BAFFLE WALL DETAIL

NOT TO SCALE

NOTES:

DETAILS FOR CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 840
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - DRAINAGE	SHEET 840	E

FILE NAME : C:\CADDLIB\PW\APATEK\GREATLAKES\D0256213\D22901_SW.DWG
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PLOT DATE : 9/21/2022 10:47 AM
PLOT BY : ANDREW PATEK
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

GENERAL NOTES

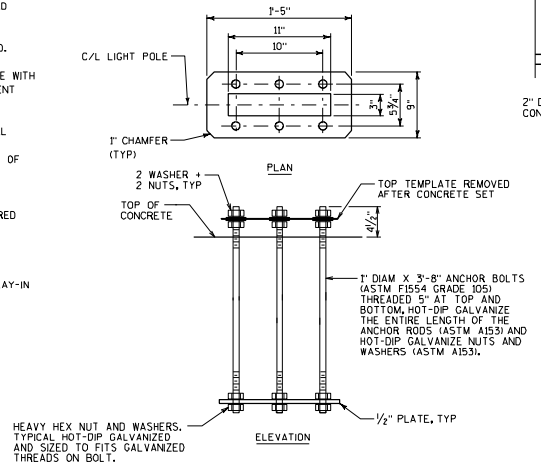
1. CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.
2. MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.
3. CONDUIT HEIGHT ABOVE CONCRETE BASE SHALL BE 2-INCHES, PRIOR TO INSTALLING END BELL.
4. ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE PLUGGED IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN PLUGGED.
5. BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.
6. A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR ALL BASES.
7. THE GROUNDING ELECTRODE CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1-INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4-FOOT COIL OF WIRE IN THE JUNCTION BOXES. THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS AND NEATLY COILED AND THE COIL TIED TOGETHER.
8. ANCHOR BOLTS SHALL BE THREADED 5-INCHES IN LENGTH ON EACH END OF THE BOLT UNLESS OTHERWISE NOTED. ANCHOR BOLTS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2 OF THE STANDARD SPECIFICATIONS CONFORMING TO ASTM F1554 (GRADE 105).
9. WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR BOLTS.
10. VERIFY COMPATIBILITY OF ANCHOR BOLT SIZE AND PATTERN PRIOR TO FORMING THE CONCRETE BASE.
11. ANCHOR BOLTS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL PER SECTION 5.17.5.3 AASHTO 2013 6TH EDITION STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
12. GALVANIZED STEEL MESH WITH ¾" STAINLESS STEEL BANDING USED FOR RODENT SCREEN REQUIRED FOR ALL POLES. MESH AND BANDING SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM.
13. WELDING OF THE ANCHOR BOLTS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.
14. BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION). BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
15. THE DIMENSIONS OF THE CONCRETE BASES WILL VARY FROM WHAT IS SHOWN ON THIS DETAIL DEPENDING ON THE VERTICAL AND HORIZONTAL SEPARATION BETWEEN THE NORTHBOUND AND SOUTHBOUND TRAVEL LANES. THIS DETAIL PROVIDES TYPICAL DIMENSIONS FOR THE MAJORITY OF BASES. REINFORCEMENT WILL VARY IN TRANSITION SECTIONS. MAKE FIELD ADJUSTMENTS AS REQUIRED.
16. ADDITIONAL QUANTITIES AND STAKING REQUIRED IN TRANSITION SECTIONS SHALL BE CONSIDERED INCIDENTAL TO THE CONCRETE BASE MEDIAN BARRIER BID ITEM.
17. THE CONCRETE SURFACE SHALL MATCH THE PROPOSED MEDIAN BARRIER WALL FINISH.
18. ALL STEEL CONDUIT SHALL BE GROUNDED. FURNISH AND INSTALL GROUNDING BUSHING WITH LAY-IN TYPE GROUND LUG AND COPPER GROUNDING JUMPER.

FOUNDATION DATA

MINIMUM ASSUMED ALLOWABLE SOIL BEARING PRESSURE = 3000 PSF

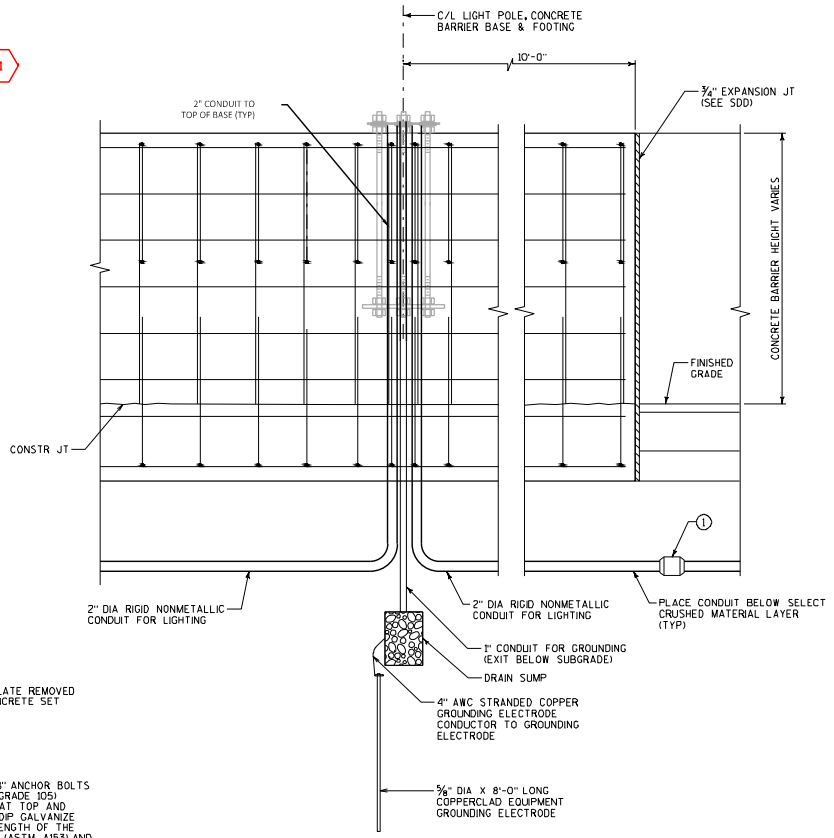
TYPE S42A BASE STATIONS (1)

STATION	△
1076+11.56	15/16"
1081+00.12	-2½"
1083+49.73	1½"



6 BOLT ASSEMBLY

(TYPE F POLES)



PARTIAL ELEVATION

FOR REINFORCING CALLOUTS & SPACING, SEE PLAN VIEW & SECTION CUTS

LEGEND

(1) NONMETALLIC EXPANSION FITTING 2". WRAP FITTING AND CONDUIT 9" ON BOTH SIDES OF EXPANSION JOINT. TWO WRAPS OF 1/2" SPONGE RUBBER WRAP, AASHTO M153, TYPE I OR EQUIVALENT. SECURE WITH PLASTIC TIE WRAPS. SET FITTING AT MIDPOINT OF ITS TRAVEL. FITTINGS AND WRAPS ARE INCIDENTAL TO CONDUIT. TWO EXPANSION FITTINGS PER BASE REQUIRED.

△ VERTICAL OFFSET BETWEEN ROADWAY SURFACES, SEE LIGHT POLE BASE SECTION CUTS FOR LOCATION. IF OFFSET IS NEGATIVE, SECTION CUTS SHOULD BE MIRRORED TO GET CORRECT ORIENTATION OF ROADWAY SURFACES.

ANCHOR ASSEMBLY LIGHT POLE STRUCTURES

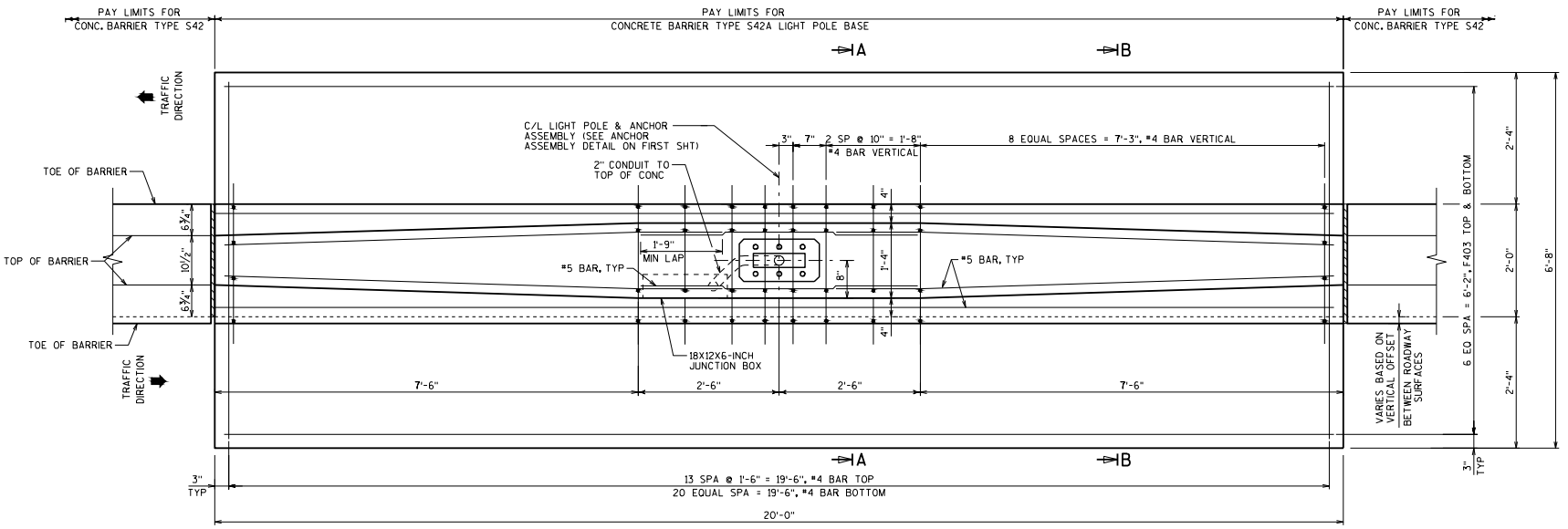
CONCRETE BASES TYPE F - CONCRETE BARRIER TYPE 42 SPECIAL

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 953
September 23, 2022

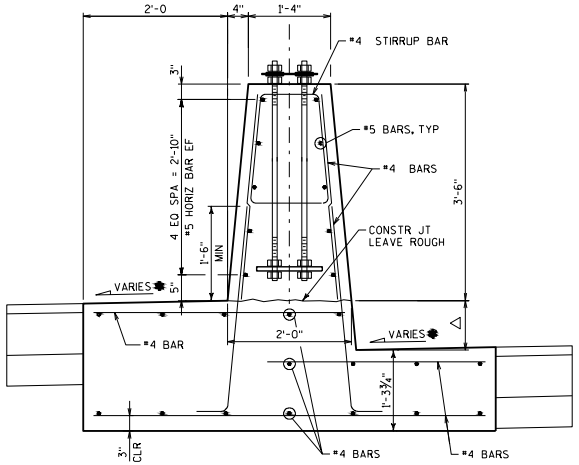
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	LIGHTING PLANS - DETAILS	SHEET 953	E

FILE NAME : S:\DOT\DOT_SE\200557 I43 FINAL DESIGN\ELECT\1229-04-73\023501_LP.DWG PLOT DATE : 9/9/2022 2:54 PM PLOT BY : KIAN K. CHAI

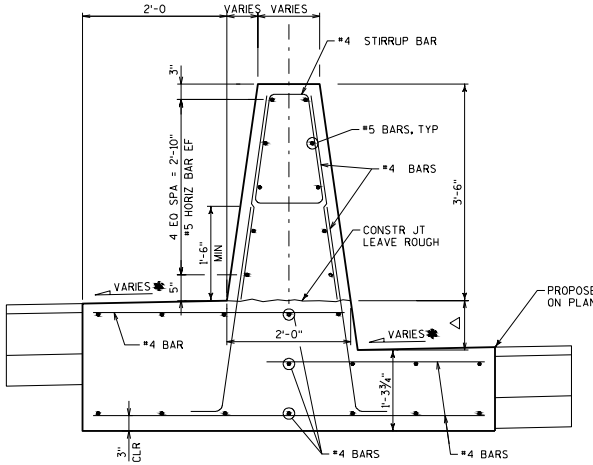
WISDOT/CADDS SHEET 42



CONCRETE BASE PLAN



SECTION A-A



SECTION B-B

LEGEND

△ VERTICAL OFFSET BETWEEN ROADWAY SURFACES, SEE LIGHT BASE STATION TABLE ON THE FIRST SHEET

✸ MATCH ROADWAY SUPERELEVATION

Addendum No. 01
ID 1229-04-71/72/73/77
Added Sheet 953A
September 23, 2022

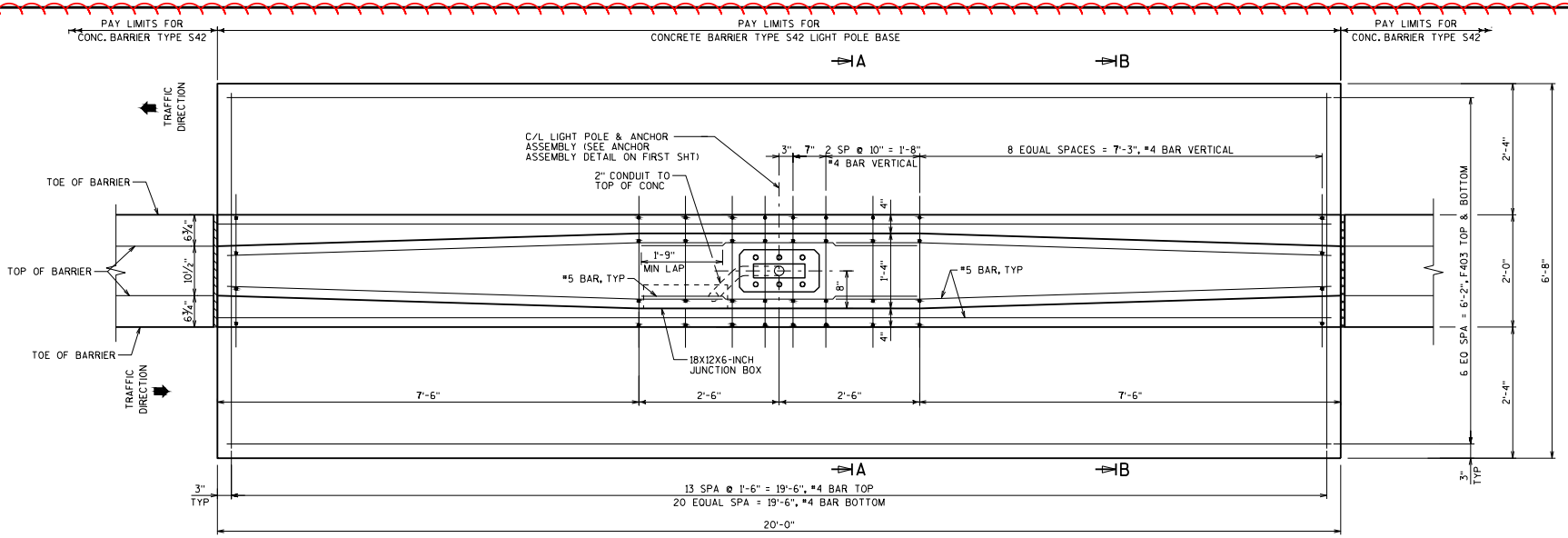
CONCRETE BASES TYPE F - CONCRETE BARRIER TYPE S42 SPECIAL

NOT TO SCALE

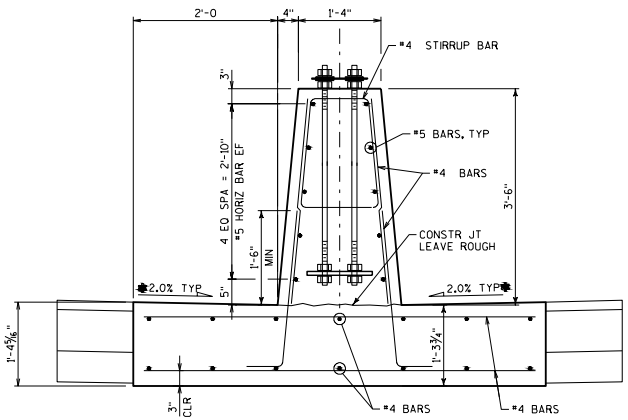
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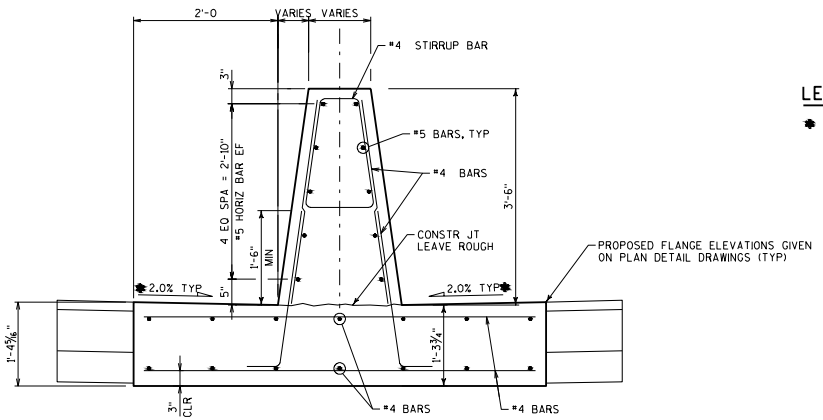
WISDOT/CADDS SHEET 42



CONCRETE BASE PLAN



SECTION A-A



SECTION B-B

LEGEND

✱ MATCH ROADWAY CROSS SLOPE

Addendum No. 01
ID 1229-04-71/72/73/77
Added Sheet 953B
September 23, 2022

CONCRETE BASES TYPE F - CONCRETE BARRIER TYPE S42

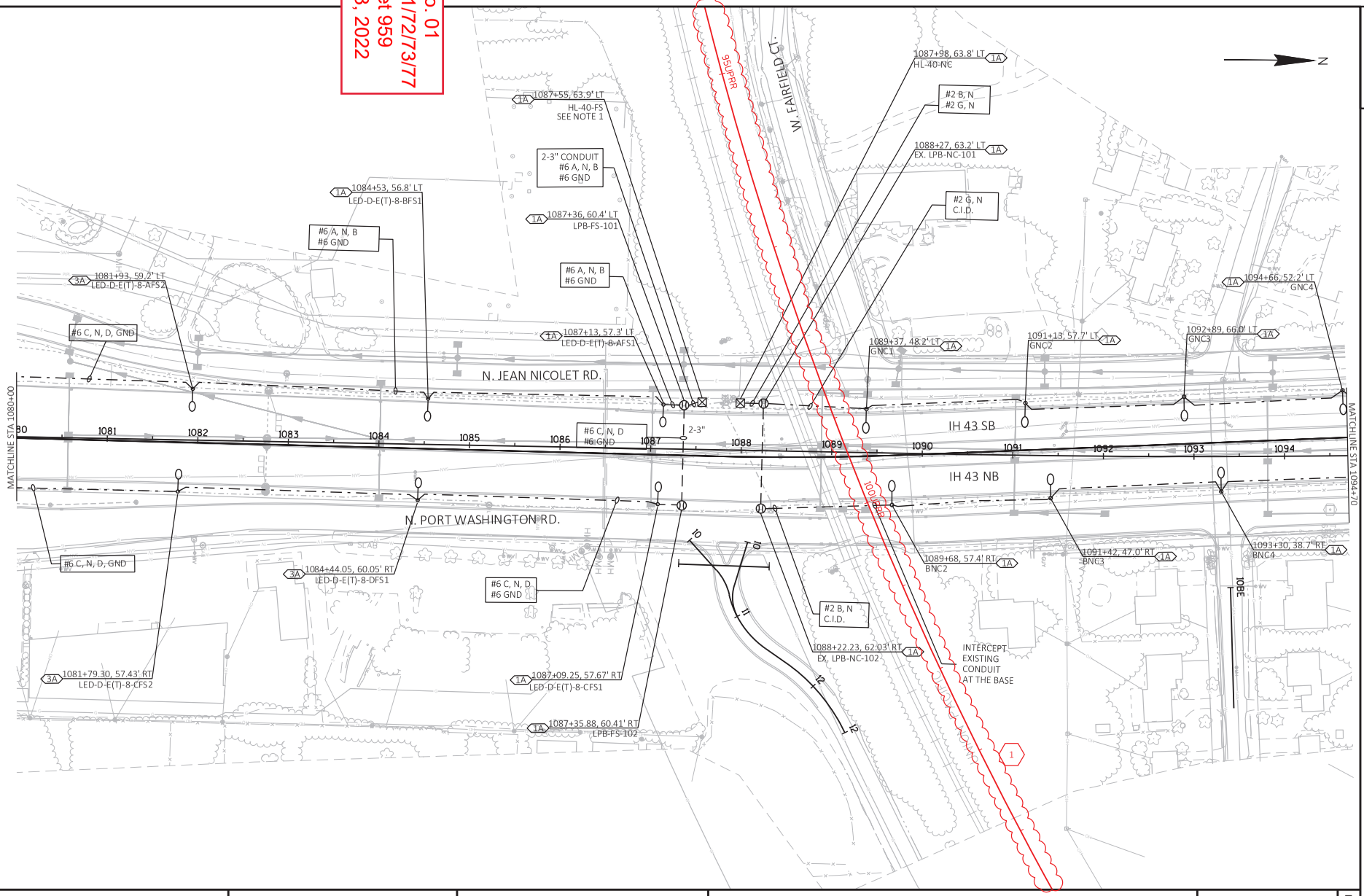
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PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	LIGHTING PLANS - DETAILS	SHEET 953B	E

FILE NAME : S:\DOT\DOT_SE\200557 I43 FINAL DESIGN\ELECT\1229-04-73\023501_LP.DWG PLOT DATE : 9/12/2022 8:31 AM PLOT BY : KIAN K. CHAI PLOT NAME :

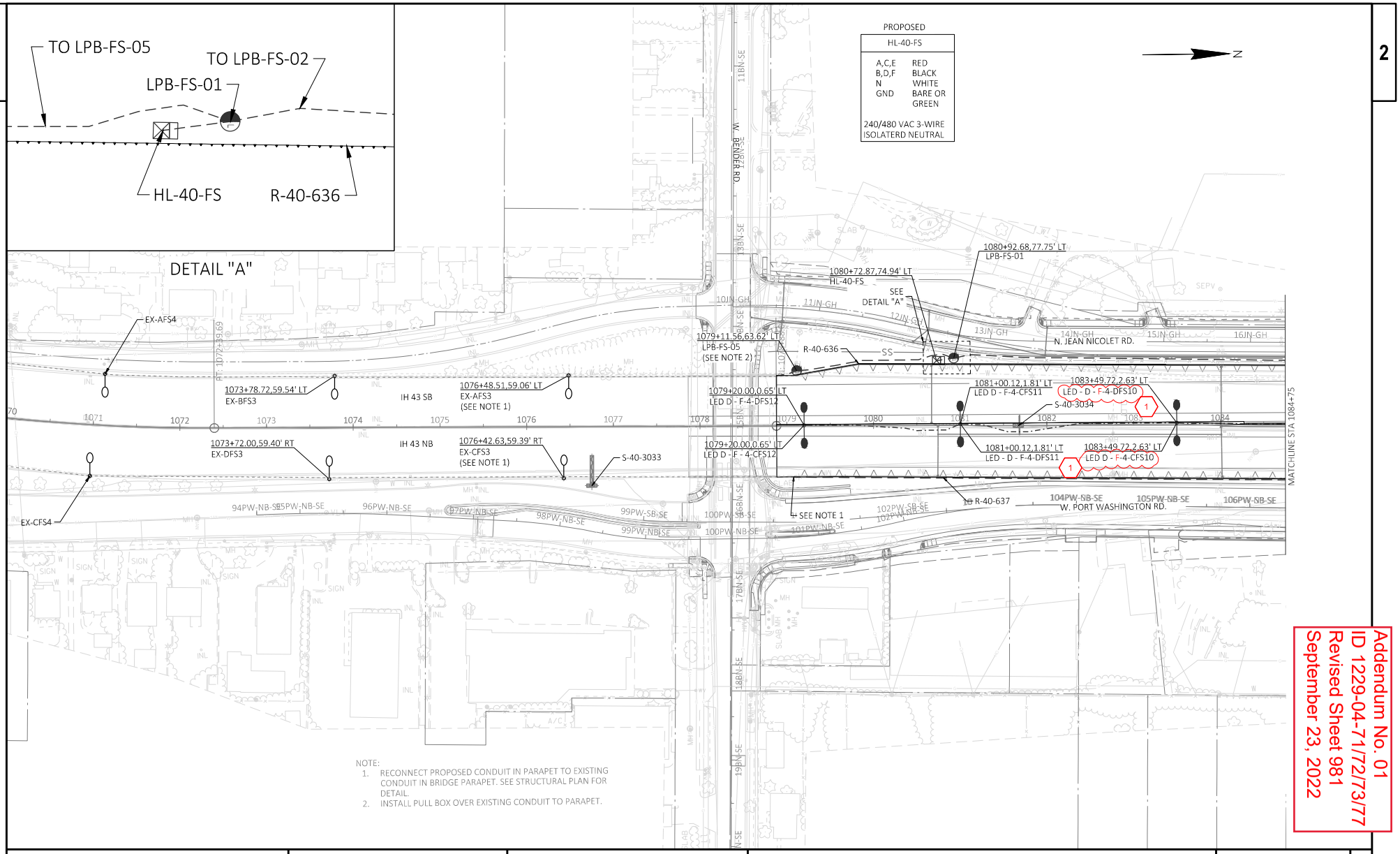
WISDOT/CADDS SHEET 42

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 959
September 23, 2022



PROJECT NO: 1229-04-73	HWY: I-43	COUNTY: MILWAUKEE	LIGHTING PLAN - REMOVALS	SHEET 959	E

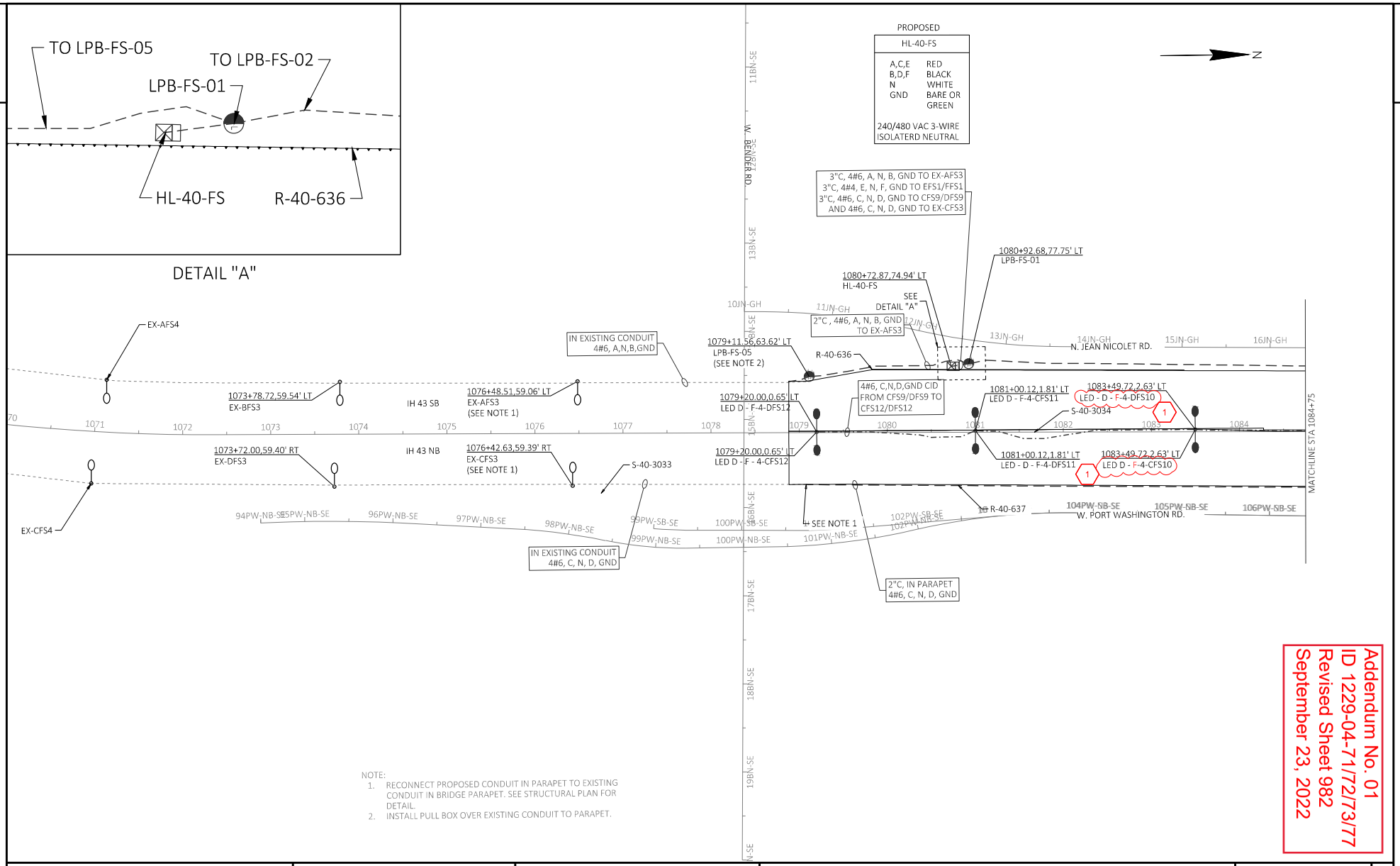
FILE NAME : W:\PROJECTS\19254\1229-04-03\04_CADD_01\CADD_SHEETS\023401-LR.DWG
LAYOUT NAME - 023400A-lr
PLOT DATE : 9/20/2022 3:36 PM
PLOT BY : WILLIAM NEAVE
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 981
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	LIGHTING PLAN - FINAL - MAINLINE	SHEET 981	E

FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0228767\LP_GH.DWG
LAYOUT NAME - 023503_LP-1
PLOT DATE : 9/8/2022 1:35 PM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 982
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	LIGHTING PLAN - FINAL - MAINLINE	SHEET 982	E

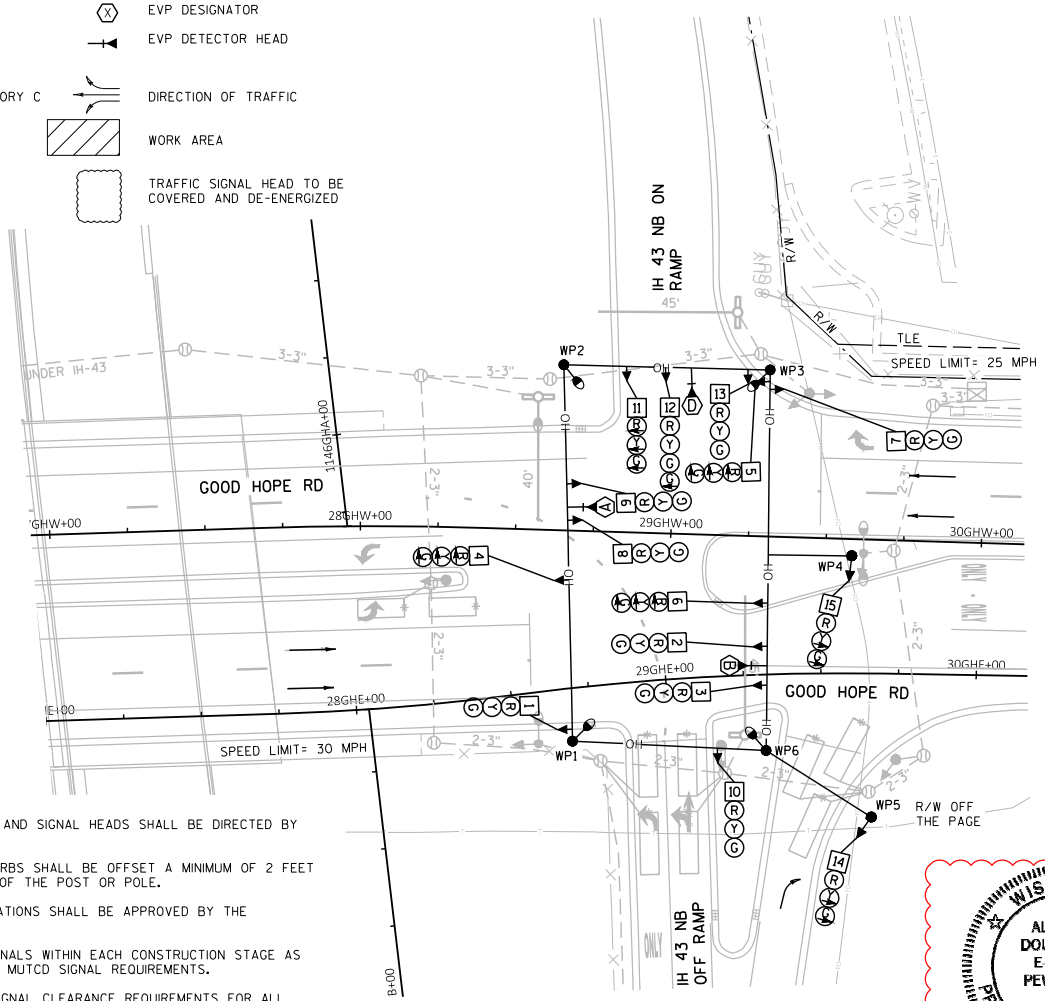
FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0228767\LP_GH.DWG
LAYOUT NAME - 023503_LP-1Sch
PLOT DATE : 9/8/2022 1:35 PM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1028
September 23, 2022

LEGEND

- CABLE - OVERHEAD
- WOOD POLE, CLASS 4
- SIGNAL HEAD, OVERHEAD MOUNT
- TEMPORARY LUMINAIRE LED CATEGORY C
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- DIRECTION OF TRAFFIC
- WORK AREA
- TRAFFIC SIGNAL HEAD TO BE COVERED AND DE-ENERGIZED

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING



CONSTRUCTION NOTES:

1. FINAL LOCATION OF WOOD POLES, CCTV, AND SIGNAL HEADS SHALL BE DIRECTED BY THE ENGINEER.
2. POLES AND POSTS INSTALLED BEHIND CURBS SHALL BE OFFSET A MINIMUM OF 2 FEET FROM THE FACE OF CURB TO THE SIDE OF THE POST OR POLE.
3. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
4. CONTRACTOR TO ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.
5. MAINTAIN PROPER TEMPORARY TRAFFIC SIGNAL CLEARANCE REQUIREMENTS FOR ALL STAGES OF CONSTRUCTION.
6. CONTRACTOR SHALL COORDINATE WITH THE WISDOT ELECTRICAL FIELD UNIT, (414) 266-1170, 5 WORKING DAYS PRIOR TO BEGINNING ANY WORK AT THE INTERSECTION.
7. ANY KNOCKDOWNS TO PERMANENT/TEMPORARY SIGNAL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR.
8. NO ADDITIONAL COST IF NEED TO WIRE TEMPORARY SIGNAL EQUIPMENT INTO NEW PERMANENT SIGNAL EQUIPMENT.
9. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.
10. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
11. ALL EXISTING SIGNAL HEADS SHALL BE REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC IMMEDIATELY AFTER TURNING ON TEMPORARY SIGNALS.

SUMMARY OF SELECTED ITEMS FOR INFORMATION ONLY

QUANTITY	DESCRIPTION
6 EA	WOOD POLES, CLASS 4
440 LF	SPAN WIRE
15 EA	SIGNAL HEADS
4 EA	LIGHTING LED-C
1 EA	TEMPORARY EVP SYSTEM
1 EA	TEMPORARY CCTV

1

WISCONSIN
ALICIA M. DOUGHERTY
E-43022
PEWAUKEE, WI
PROFESSIONAL ENGINEER
07/28/2022

TRAFFIC CONTROL SIGNAL
IH 43 NB RAMPS & GOOD HOPE RD
VILLAGE OF RIVER HILLS/CITY OF GLENDALE
MILWAUKEE COUNTY

SIGNAL NO. T40-1132-1 CONTROLLER TYPE: TEMP

REGION CONTACT: P. VIRK
DESIGNED BY: HNTB
REVISED BY:

PAGE 1 OF 5

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - PRE-STAGE 1B	SHEET 1028	E

FILE NAME : C:\CADDLIB\PW\MJMAY\GREATLAKES\D0230709\03_S40-1132_TMP_PRESTAGE.DWG
LAYOUT NAME - Good Hope_Ramps_tmp-pre-1-1
PLOT DATE : 6/22/2022 9:39 AM PLOT BY : MATTHEW MAY PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

CONSTRUCTION NOTES:

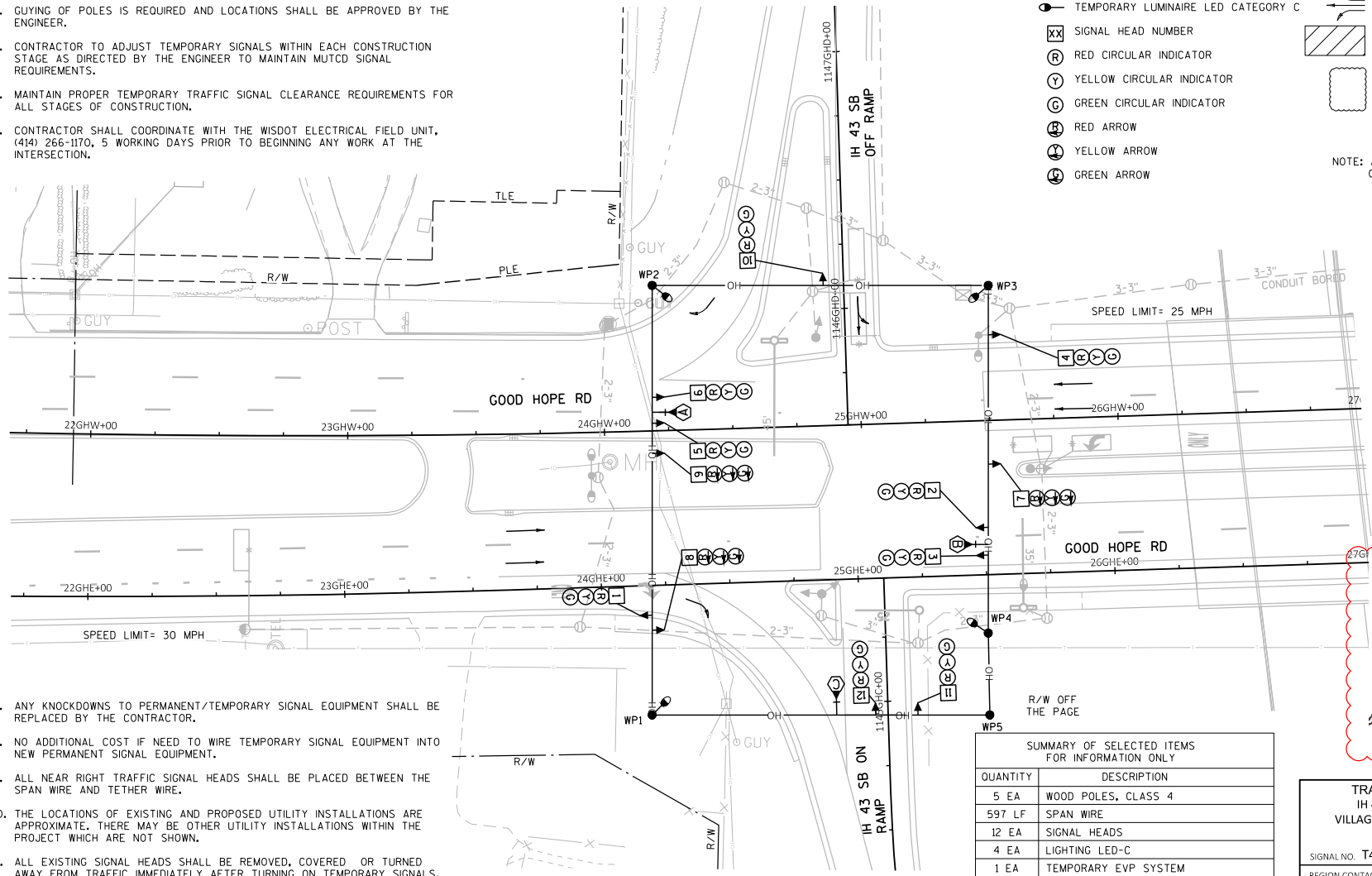
1. FINAL LOCATION OF WOOD POLES, CCTV, AND SIGNAL HEADS SHALL BE DIRECTED BY THE ENGINEER.
2. POLES AND POSTS INSTALLED BEHIND CURBS SHALL BE OFFSET A MINIMUM OF 2 FEET FROM THE FACE OF CURB TO THE SIDE OF THE POST OR POLE.
3. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
4. CONTRACTOR TO ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.
5. MAINTAIN PROPER TEMPORARY TRAFFIC SIGNAL CLEARANCE REQUIREMENTS FOR ALL STAGES OF CONSTRUCTION.
6. CONTRACTOR SHALL COORDINATE WITH THE WISDOT ELECTRICAL FIELD UNIT, (414) 266-1170, 5 WORKING DAYS PRIOR TO BEGINNING ANY WORK AT THE INTERSECTION.
7. ANY KNOCKDOWNS TO PERMANENT/TEMPORARY SIGNAL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR.
8. NO ADDITIONAL COST IF NEED TO WIRE TEMPORARY SIGNAL EQUIPMENT INTO NEW PERMANENT SIGNAL EQUIPMENT.
9. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.
10. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
11. ALL EXISTING SIGNAL HEADS SHALL BE REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC IMMEDIATELY AFTER TURNING ON TEMPORARY SIGNALS.

LEGEND

- CABLE - OVERHEAD
- WOOD POLE, CLASS 4
- SIGNAL HEAD, OVERHEAD MOUNT
- TEMPORARY LUMINAIRE LED CATEGORY C
- XX SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- R RED ARROW
- Y YELLOW ARROW
- G GREEN ARROW
- X EVP DESIGNATOR
- EVP DETECTOR HEAD
- DIRECTION OF TRAFFIC
- WORK AREA
- TRAFFIC SIGNAL HEAD TO BE COVERED AND DE-ENERGIZED

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

N



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1033
September 23, 2022

1

WISCONSIN
ALICIA M. DOUGHERTY
E-43022
PEWAUKEE, WI
PROFESSIONAL ENGINEER

07/28/2022

SUMMARY OF SELECTED ITEMS FOR INFORMATION ONLY

QUANTITY	DESCRIPTION
5 EA	WOOD POLES, CLASS 4
597 LF	SPAN WIRE
12 EA	SIGNAL HEADS
4 EA	LIGHTING LED-C
1 EA	TEMPORARY EVP SYSTEM
1 EA	TEMPORARY CCTV

TRAFFIC CONTROL SIGNAL
IH 43 SB RAMPS & GOOD HOPE RD
VILLAGE OF RIVER HILLS/CITY OF GLENDALE
MILWAUKEE COUNTY

SIGNAL NO. T40-1132-2 CONTROLLER TYPE: TEMP

REGION CONTACT: P. VIRK
DESIGNED BY: HNTB
REVISED BY:

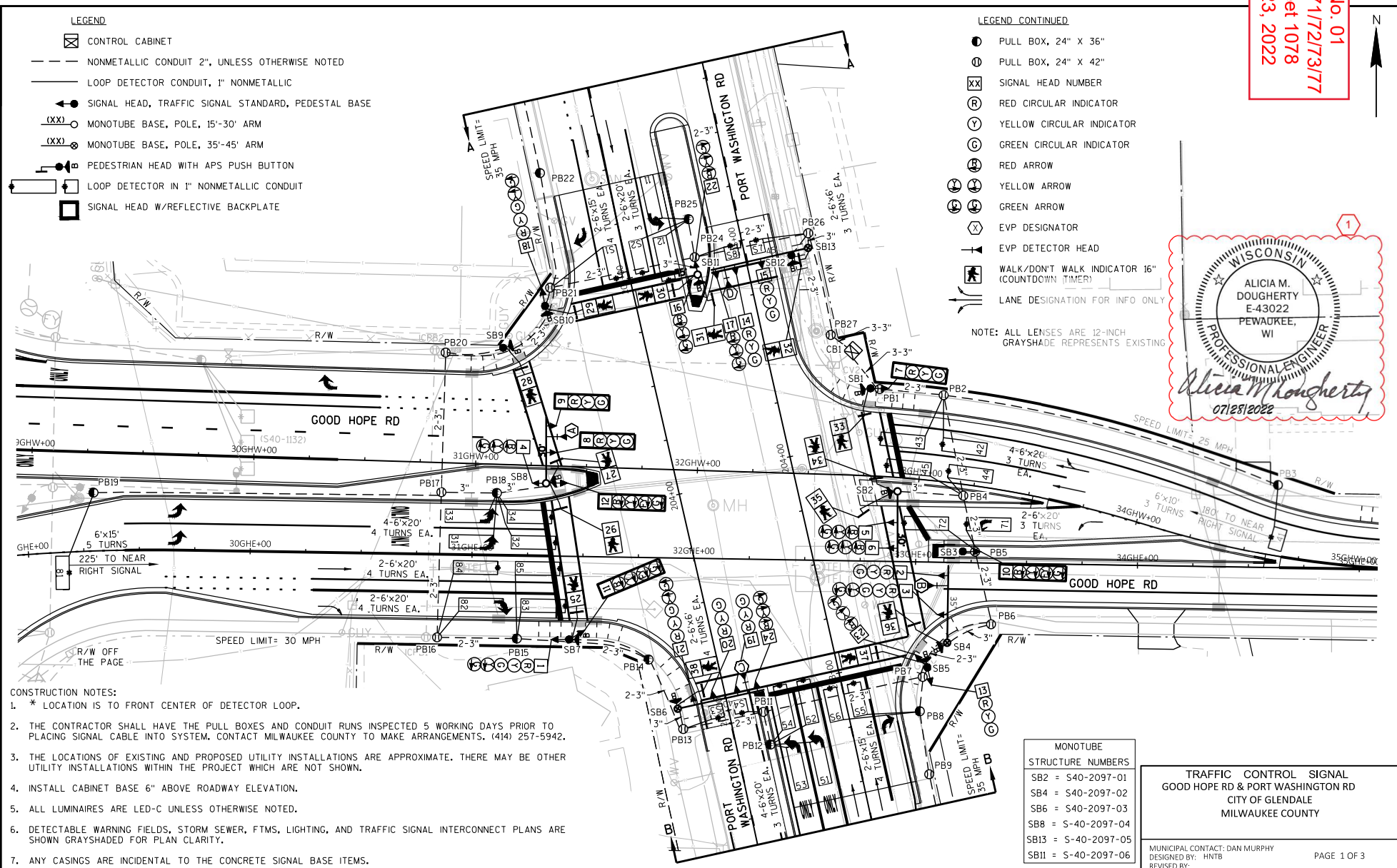
PAGE 1 OF 6

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - PRE-STAGE 1B	SHEET 1033	E

FILE NAME : C:\CADDLIB\PW\MJMAY\GREATLAKES\D0230709\03_S40-1132_TMP_PRESTAGE.DWG
LAYOUT NAME - Good Hope_Ramps_tmp-pre-2-1
PLOT DATE : 6/22/2022 9:35 AM PLOT BY : MATTHEW MAY PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1078
September 23, 2022



CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT MILWAUKEE COUNTY TO MAKE ARRANGEMENTS. (414) 257-5942.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
5. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.
6. DETECTABLE WARNING FIELDS, STORM SEWER, FTMS, LIGHTING, AND TRAFFIC SIGNAL INTERCONNECT PLANS ARE SHOWN GRAYSHADED FOR PLAN CLARITY.
7. ANY CASINGS ARE INCIDENTAL TO THE CONCRETE SIGNAL BASE ITEMS.

MONOTUBE STRUCTURE NUMBERS	
SB2	= S40-2097-01
SB4	= S40-2097-02
SB6	= S40-2097-03
SB8	= S-40-2097-04
SB13	= S-40-2097-05
SB11	= S-40-2097-06

TRAFFIC CONTROL SIGNAL
GOOD HOPE RD & PORT WASHINGTON RD
CITY OF GLENDALE
MILWAUKEE COUNTY

MUNICIPAL CONTACT: DAN MURPHY
DESIGNED BY: HNTB
REVISED BY:

PAGE 1 OF 3

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 1078	E

FILE NAME : C:\CADDLIB\PW\HNTB_ADOUGHERTY\GREATLAKES\D0230710\04_S40-XXXX.DWG
LAYOUT NAME - Good Hope_Port_1
PLOT DATE : 6/26/2022 12:18 PM PLOT BY : ALICIA DOUGHERTY PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

LEGEND

- SERVICE POLE
- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- DON'T WALK INDICATOR 16"
  WALK INDICATOR 16"
- X EVP DESIGNATOR
- CONFIRMATION LIGHT
- EVP DETECTOR HEAD
- RADIO INTERCONNECT ANTENNA, 5.8 GHz
- LANE DESIGNATION FOR INFO ONLY
- SIGNAL HEAD W/REFLECTIVE BACKPLATE

SB1	13 FT STD	-	TYPE 1 BASE
SB2	15 FT STD	-	TYPE 1 BASE
SB3	15 FT STD	-	TYPE 1 BASE
SB4	TYPE 9 POLE	-	TYPE 10 BASE
SB5	15 FT STD	-	TYPE 1 BASE
SB6	TYPE 4 POLE	-	TYPE 2 BASE
SB7	TYPE 9 POLE	-	TYPE 10 BASE
LP1	TYPE 5 POLE	-	TYPE 5 BASE
LP2	TYPE 5 POLE	-	TYPE 5 BASE

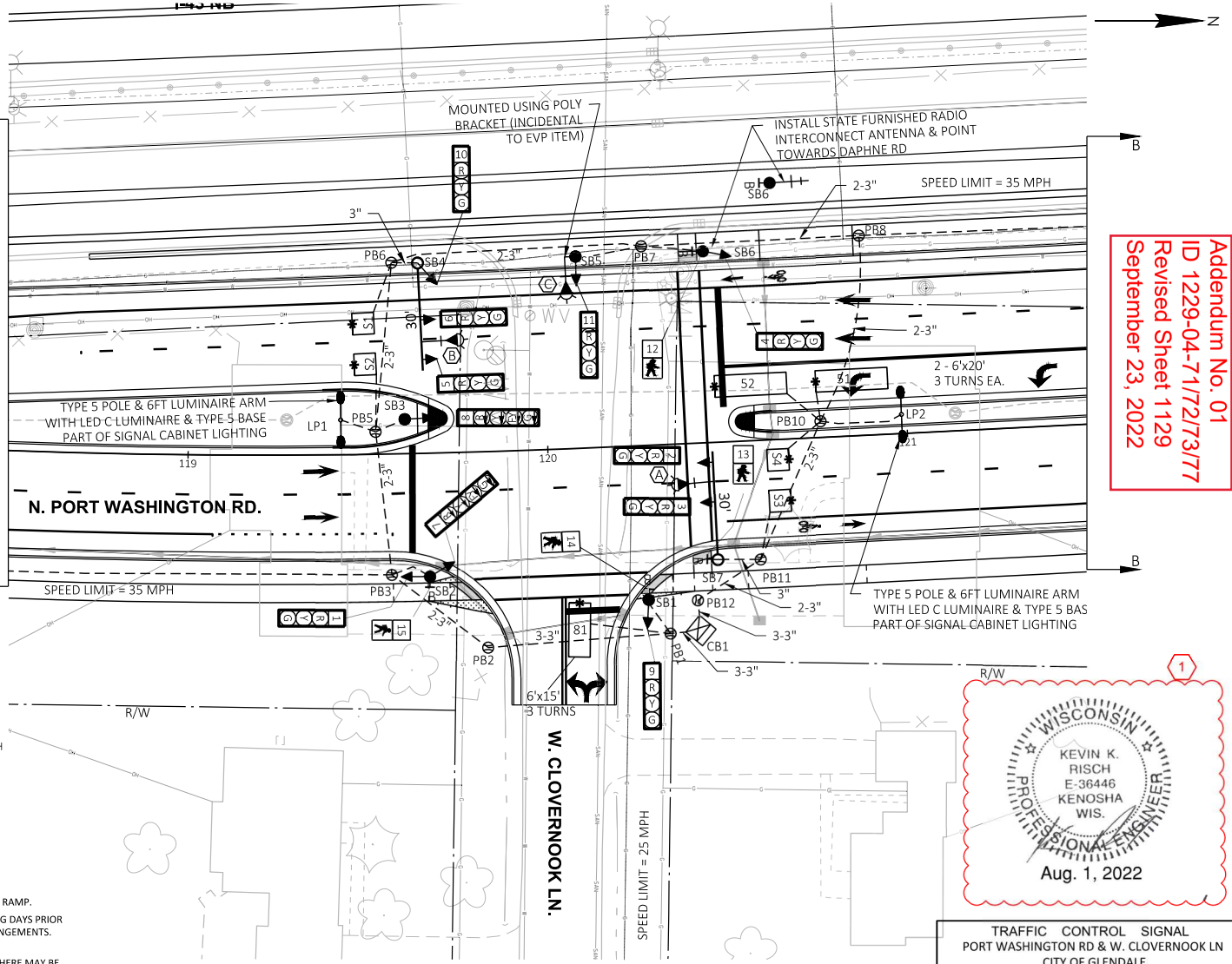
NOTES:
- ALL LENSES ARE 12-INCH

MONOTUBE STRUCTURE NUMBERS

SB4	=	S - 40 - 2102 - 01
SB7	=	S - 40 - 2102 - 02

CONSTRUCTION NOTES:

1. LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. ALL CENTER OF POLE BASES ARE SET AT 2'-10" FROM B.O.C. AND 1'-10" FROM S.W. EDGE AT RAMP.
3. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE CITY OF GLENDALE TO MAKE ARRANGEMENTS. (414)228-1710.
4. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROZIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
5. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
6. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.
7. STORM SEWER, FTMS, LIGHTING AND TRAFFIC SIGNAL INTERCONNECT PLANS ARE SHOWN GRAY SHADED FOR PLAN CLARITY.



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1129
September 23, 2022

KEVIN K. RISCH
E-36446
KENOSHA
WIS.
WISCONSIN
PROFESSIONAL ENGINEER
Aug. 1, 2022

TRAFFIC CONTROL SIGNAL
PORT WASHINGTON RD & W. CLOVERNOOK LN
CITY OF GLENDALE
MILWAUKEECOUNTY

REGION CONTACT: CHARLIE IMIG
DESIGNED BY: CLARK DIETZ
REVISED BY:

PAGE 1 OF 3

PROJECT NO: 1229-04-71	HWY: N. PORT WASHINGTON RD	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 1129	E

FILE NAME : P:\G0580410_GLENDALE - CLOVERNOOK PORT RD TRF SIG\DESIGN\CAD\SHEETS\024001-SP.DWG
LAYOUT NAME - Traffic Signal Plan (1)
PLOT DATE : 6/24/2022 6:44 AM
PLOT BY : KEVIN K. RISCH
PLOT NAME :
PLOT SCALE : 1 IN:30 FT

PROJECT ID:	1229-04-71
INTERSECTION:	PORT WASHINGTON RD & W. CLOVERNOOK LN

SIGNAL WIRE COLOR CODING			
BLK=BLACK	RED=RED	GRN=GREEN	
WHT=WHITE	BLU=BLUE	ORG=ORANGE	

CB1 TO	NO. OF CONDUCTORS	HEAD NO.	SIGNAL INDICATION WIRE COLOR										
			RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASHING YELLOW>	D/WALK	WALK	PED BUTTON	OTHER
SB1	7	9	RED	ORG	GRN								
		14								BLK	BLU		
		B										WHT/BLK	
SB2	12	1	RED	ORG	GRN								
		7				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
		15								BLK	BLU		
		B										WHT/BLK	
SB3	4	8				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT				
SB4	9	5	RED	ORG	GRN								
		6	RED	ORG	GRN								
		11	RED	ORG	GRN								
SB5	3	10	RED	ORG	GRN								
SB6	7	4	RED	ORG	GRN								
		12								BLK	BLU		
		B										WHT/BLK	
SB7	12	2	RED	ORG	GRN								
		3	RED	ORG	GRN								
		13								BLK	BLU		
		B										WHT/BLK	

Use the white conductor in the cable assembly as the grounded conductor for all traffic signal indications
Ensure the grounded conductor in the feeder cable and the pole cables are both 18" longer than the underground conductors.
At the signal bases, connect one terminal from the pedestrian push button to the color indicated in the chart. Connect the other terminal to the grounded conductor.
Reconnect the grounding conductors wherever the circuit has been interupted to ensure the grounding circuit is complete.

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1132
September 23, 2022

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GREEN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	CB1

PULL BOX BONDING JUMPER 10 AWG GREEN XLP	
FROM	TO
PB1	SB1
PB1	PB2
PB2	PB3
PB3	SB2
PB3	PB4
PB3	PB5
PB5	SB3
PB5	PB6
PB6	SB4
PB6	PB7
PB7	SB5
PB7	SB6
PB7	PB8
PB8	PB9
PB8	PB10
PB10	PB11
PB11	SB7
PB11	PB12

1

WISCONSIN
KEVIN K. RISCH E-36446 KENOSHA WIS.
PROFESSIONAL ENGINEER

Aug. 1, 2022

CONFIRMATION LIGHTS	
FROM	TO
CB1	SB7 (HEAD A)
CB1	SB4 (HEAD B)
CB1	SB5 (HEAD C)

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	SB7 (HEAD A)
CB1	SB4 (HEAD B)
CB1	SB5 (HEAD C)

LIGHTING UF 2-10 AWG GROUNDED	
FROM	TO
CB1	LP1
CB1	LP2

PROJECT NO: 1229-04-71	HWY: N. PORT WASHINGTON RD	COUNTY: MILWAUKEE	CABLE ROUTING	SHEET 1132	E

2

2

PAVEMENT MARKING LEGEND

1 MARKING LINE EPOXY 4-INCH (YELLOW)

2 MARKING LINE EPOXY 4-INCH (WHITE)

3 MARKING LINE EPOXY 4-INCH (DASHED WHITE)(12.5 FT LINE 37.5 FT SKIP)

4 MARKING LINE EPOXY 4-INCH (DASHED WHITE)(3 FT LINE 9 FT SKIP)

5 MARKING LINE EPOXY 8-INCH (WHITE)

6 MARKING DIAGONAL EPOXY 12-INCH (YELLOW)

7 MARKING DIAGONAL EPOXY 12-INCH (WHITE)

8 MARKING CHEVRON EPOXY 24-INCH (WHITE)

9 MARKING STOP LINE EPOXY 18-INCH (WHITE)

10 MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE)(3 FT LINE, 9 FT SKIP)

11 MARKING WORD EPOXY (WHITE)

12 MARKING ARROW EPOXY (WHITE)

13 MARKING CURB EPOXY

14 MARKING ISLAND NOSE EPOXY

15 MARKING LINE GROOVED WET REF EPOXY 4-INCH (YELLOW)

16 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)

17 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH (DASHED WHITE)(12.5 FT LINE, 37.5 FT SKIP)

18 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH (DOT PATTERN WHITE)(3 FT LINE, 9 FT SKIP) 1

19 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH (WHITE)

21 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)

24 MARKING SYMBOL EPOXY

25 MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH (DASHED WHITE) (3 FT LINE, 9 FT SKIP)

26 MARKING LINE EPOXY 8-INCH (YELLOW)

DELINEATOR BARRIER WALL

DELINEATOR FLEXIBLE

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1141
September 23, 2022

PROJECT NO: 1229-04-71/-73/-77	HWY: IH 43	COUNTY: MILWAUKEE	PAVEMENT MARKING LEGEND	SHEET 1141	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\024500_PM_ML.DWG
LAYOUT NAME - LEGEND_PM

PLOT DATE : 9/16/2022 8:39 AM PLOT BY : DAN BAUMANN PLOT NAME : PLOT SCALE : ##########

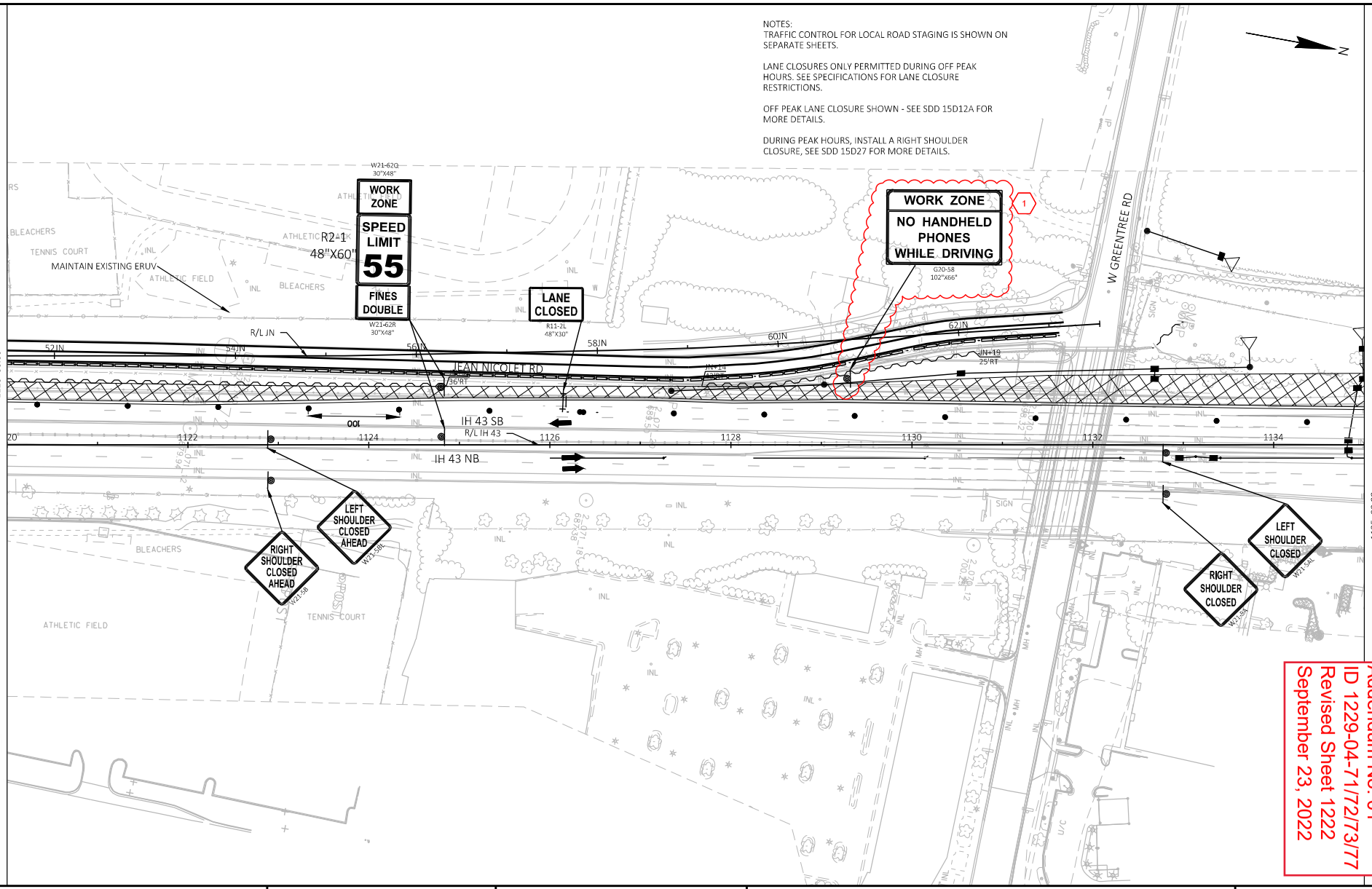
WISDOT/CADDS SHEET 42

NOTES:
TRAFFIC CONTROL FOR LOCAL ROAD STAGING IS SHOWN ON SEPARATE SHEETS.

LANE CLOSURES ONLY PERMITTED DURING OFF PEAK HOURS. SEE SPECIFICATIONS FOR LANE CLOSURE RESTRICTIONS.

OFF PEAK LANE CLOSURE SHOWN - SEE SDD 15D12A FOR MORE DETAILS.

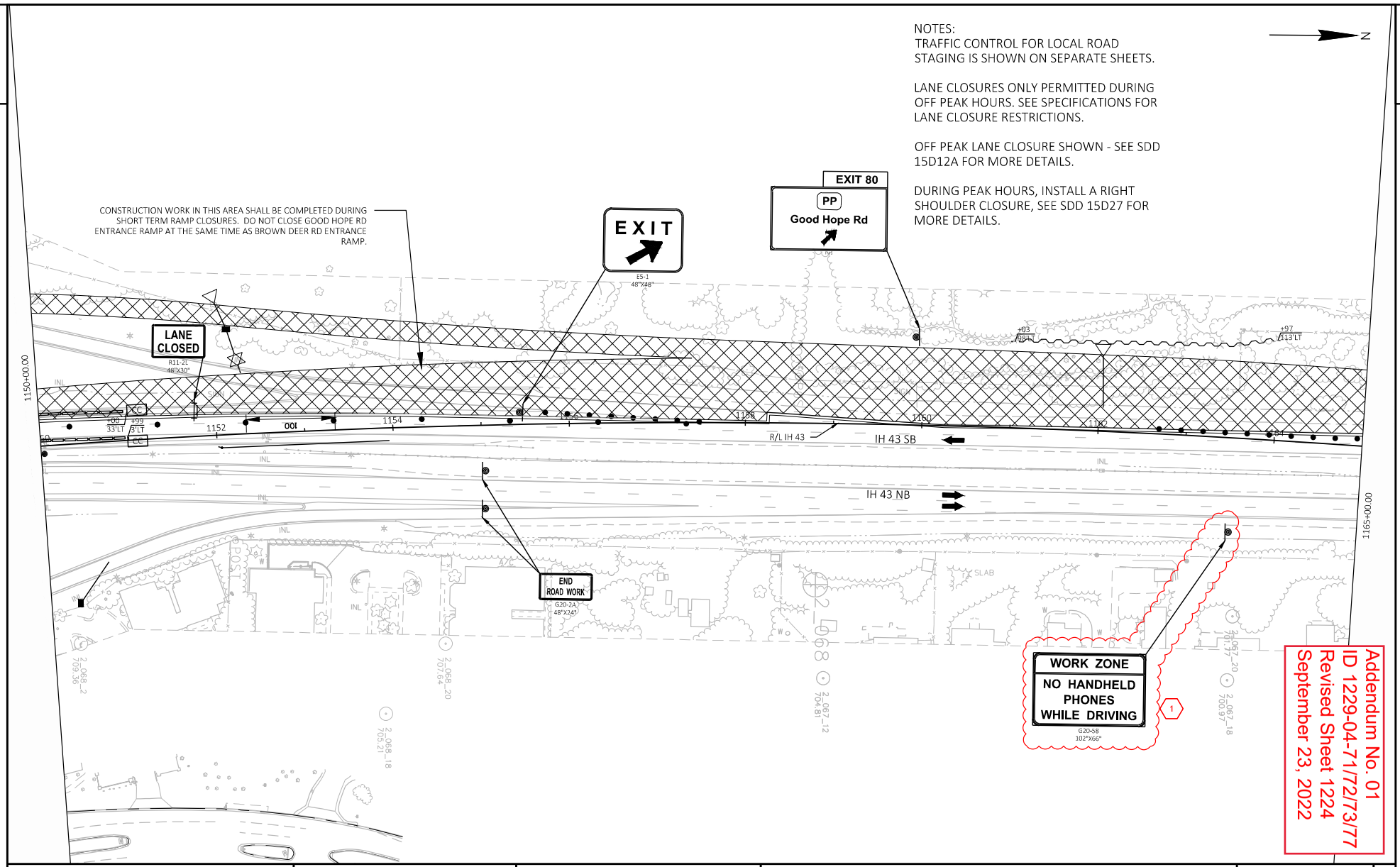
DURING PEAK HOURS, INSTALL A RIGHT SHOULDER CLOSURE, SEE SDD 15D27 FOR MORE DETAILS.



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1222
September 23, 2022

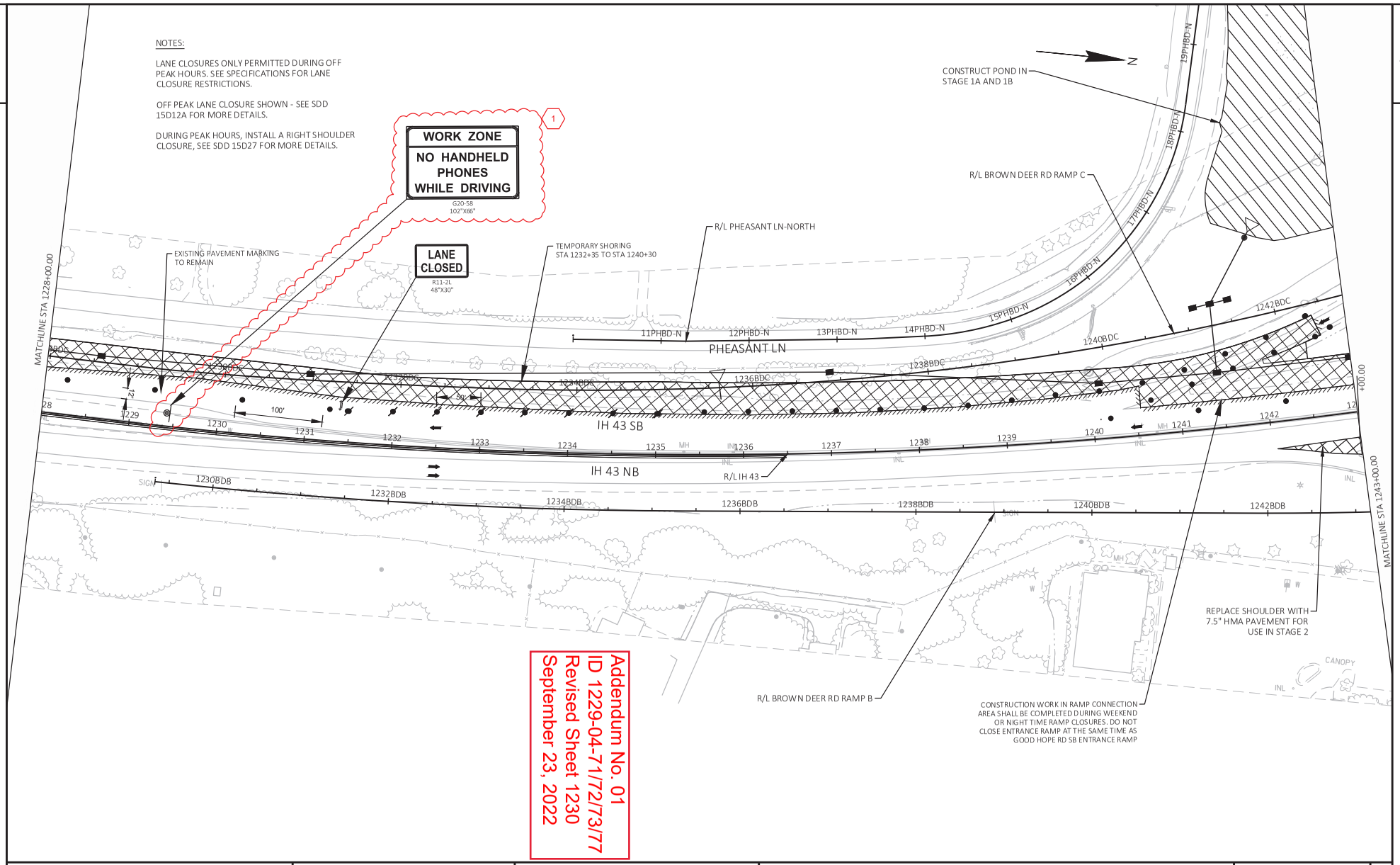
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1A	SHEET 1222	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026101-TC1A.DWG
LAYOUT NAME - Sheet - (4)
PLOT DATE : 9/16/2022 1:37 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



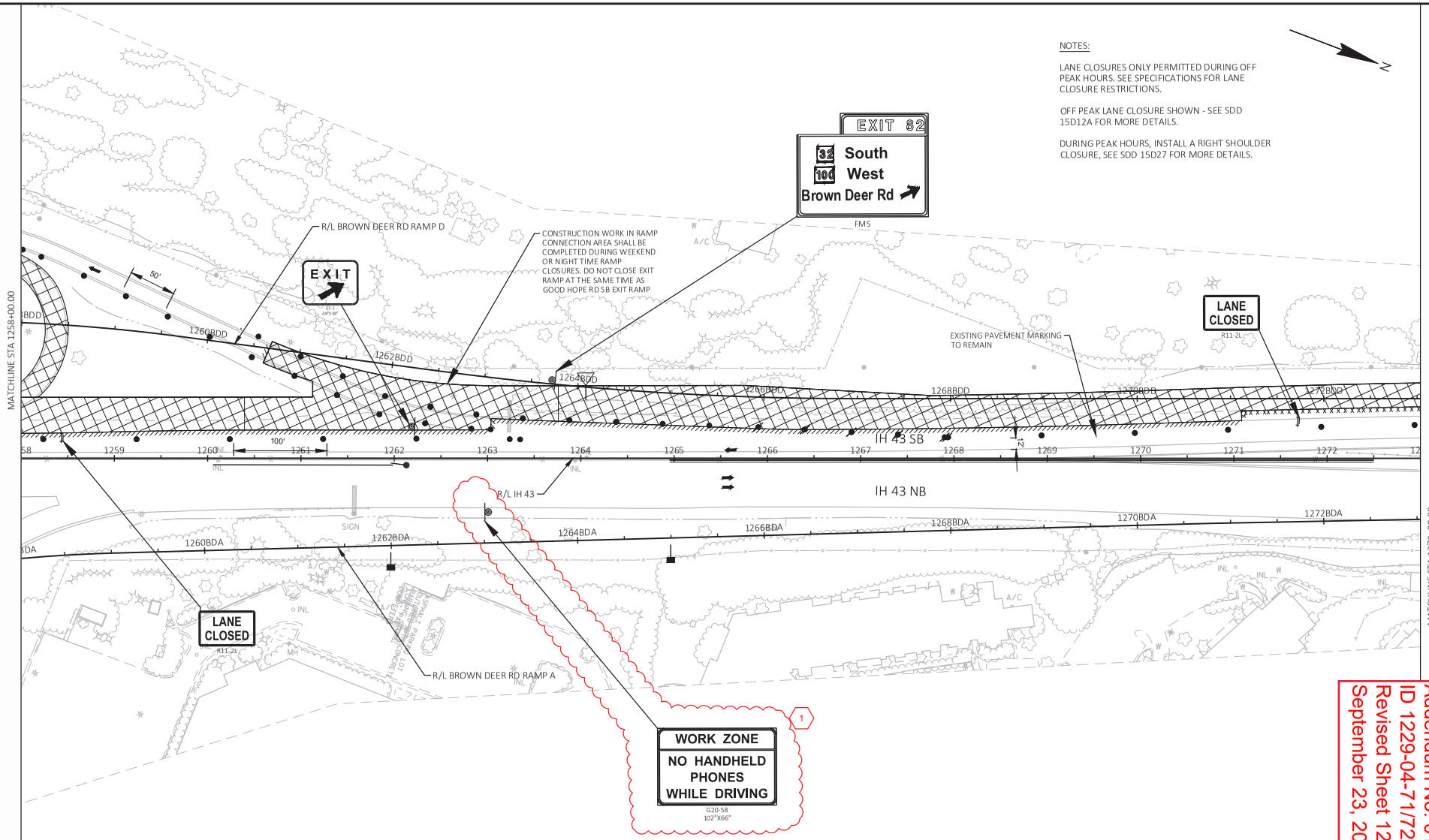
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1A	SHEET 1224	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026101-TC1A.DWG
LAYOUT NAME - Sheet - (6)
PLOT DATE : 9/16/2022 1:38 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1A	SHEET 1230	E

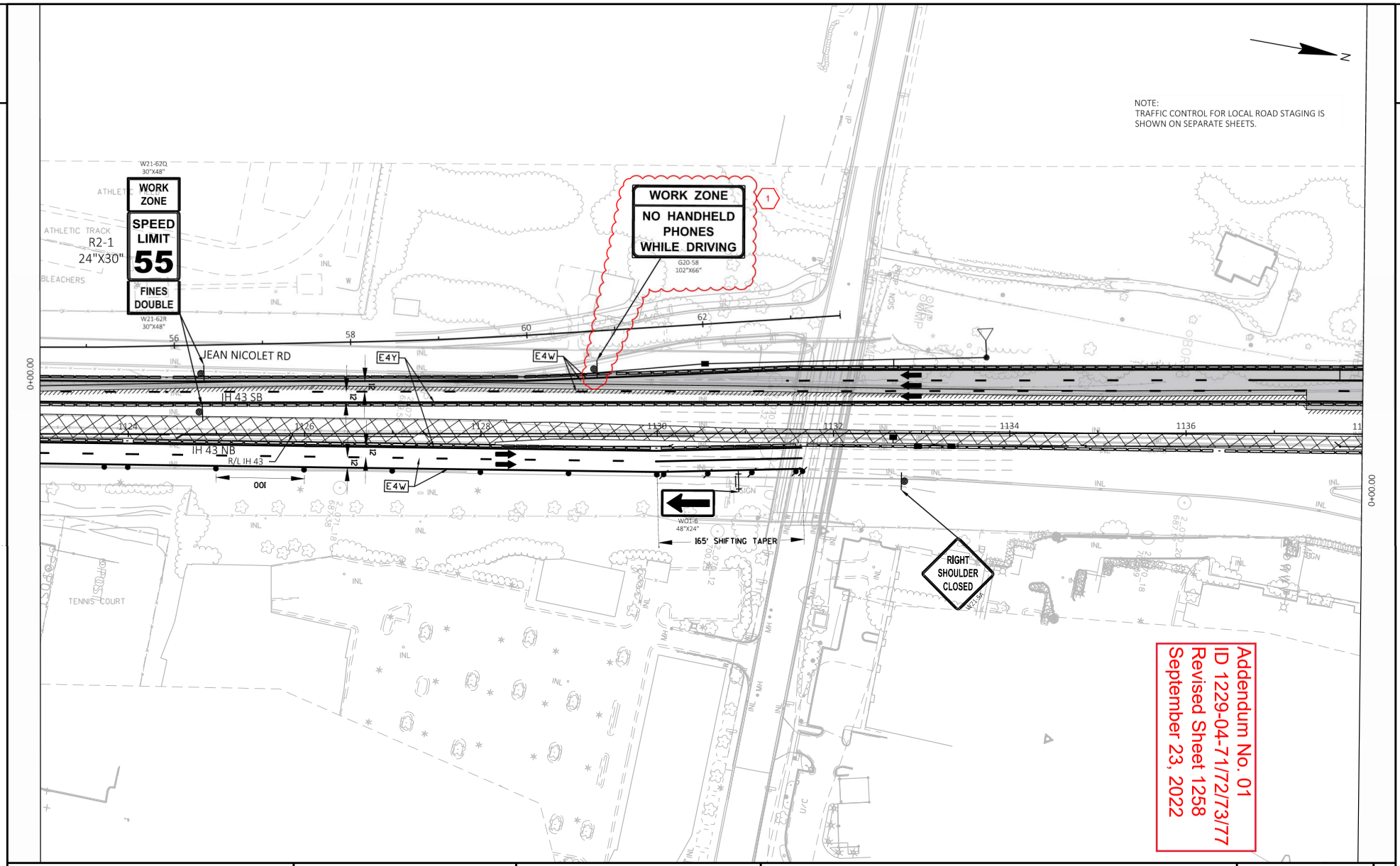
FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026106_TC1A.DWG
LAYOUT NAME - TC_4
PLOT DATE : 9/19/2022 1:51 PM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1232
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1A	SHEET 1232	E

FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026106_TC1A.DWG
LAYOUT NAME - TC_6
PLOT DATE : 9/19/2022 1:52 PM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



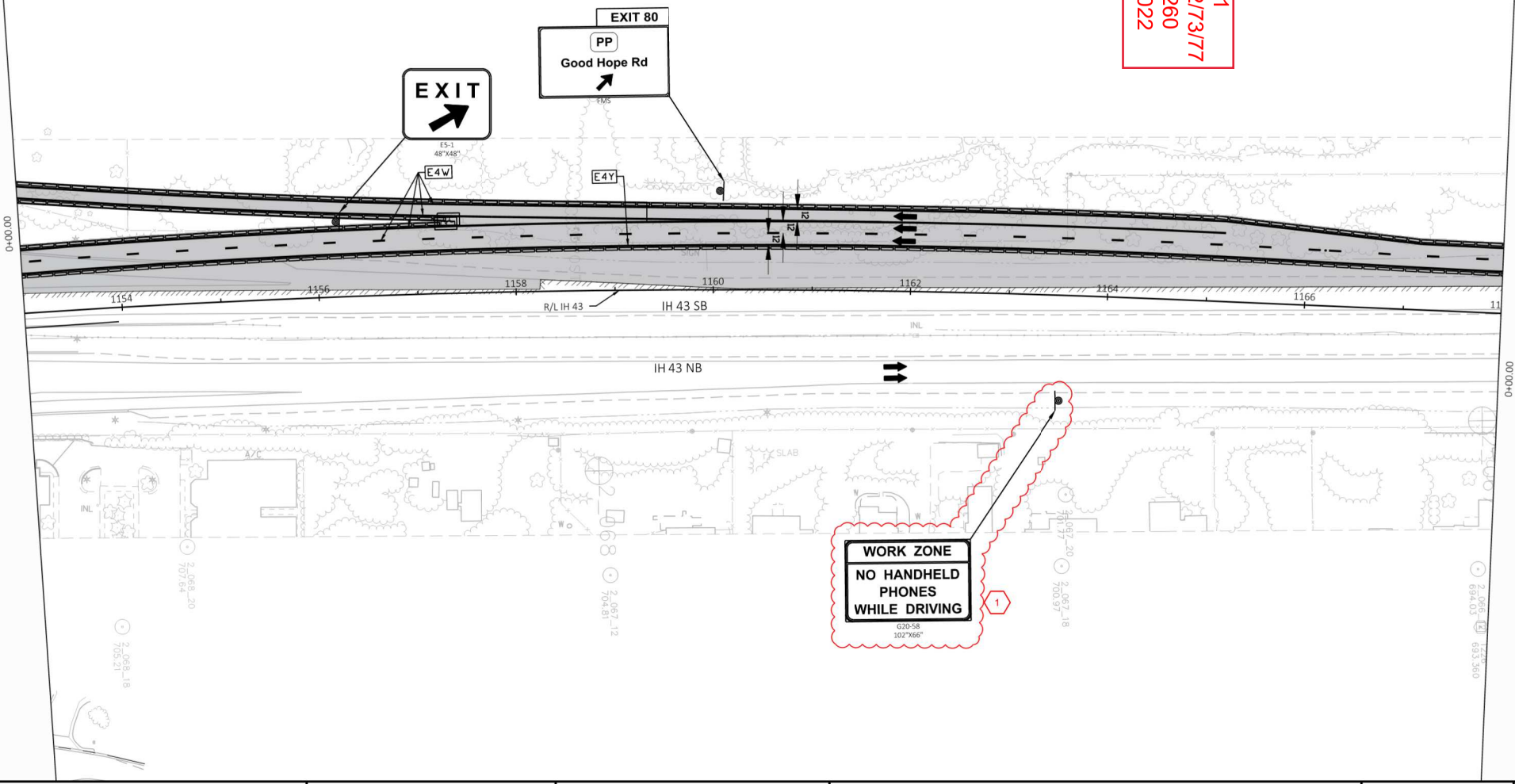
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1B	SHEET 1258	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026102-TC1B.DWG
LAYOUT NAME - Sheet - (5)
PLOT DATE : 9/16/2022 1:45 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1260
September 23, 2022

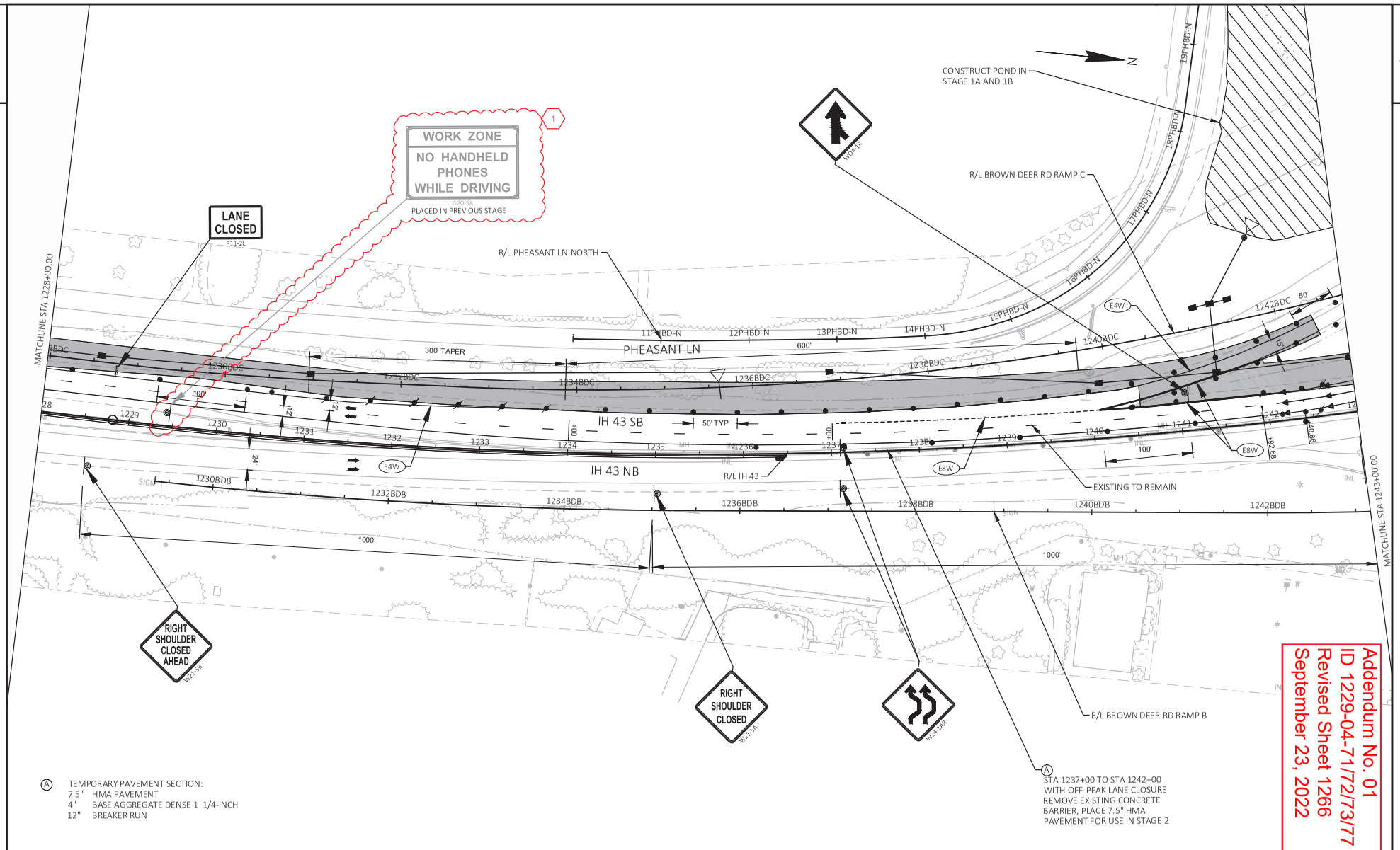
N

NOTE:
TRAFFIC CONTROL FOR LOCAL ROAD STAGING IS SHOWN ON SEPARATE SHEETS.



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1B	SHEET 1260	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026102-TC1B.DWG
LAYOUT NAME - Sheet - (7)
PLOT DATE : 9/16/2022 1:46 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



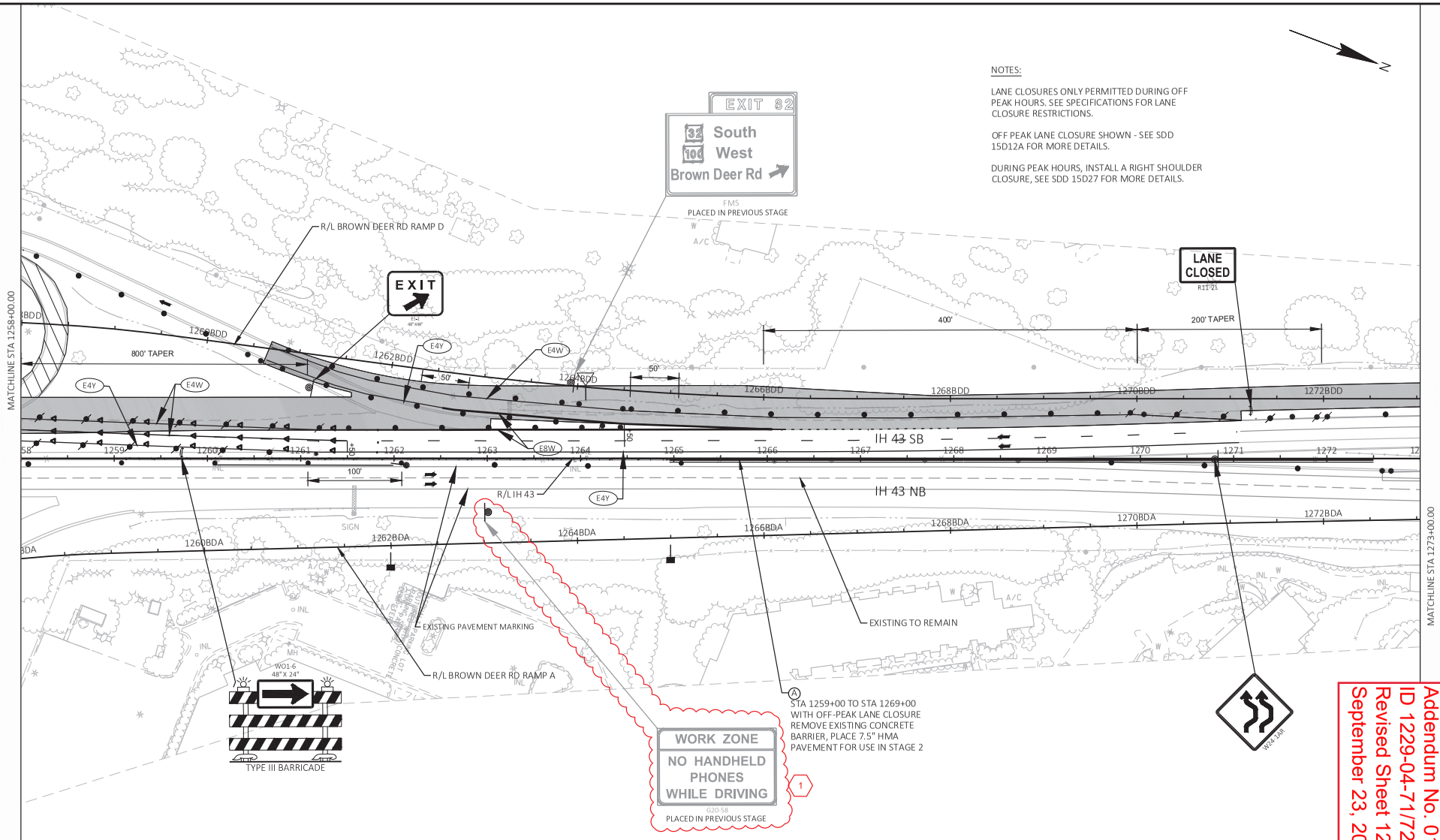
Ⓐ TEMPORARY PAVEMENT SECTION:
7.5" HMA PAVEMENT
4" BASE AGGREGATE DENSE 1 1/4-INCH
12" BREAKER RUN

Ⓐ STA 1237+00 TO STA 1242+00
WITH OFF-PEAK LANE CLOSURE
REMOVE EXISTING CONCRETE
BARRIER, PLACE 7.5" HMA
PAVEMENT FOR USE IN STAGE 2

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1266
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1B	SHEET 1266	E

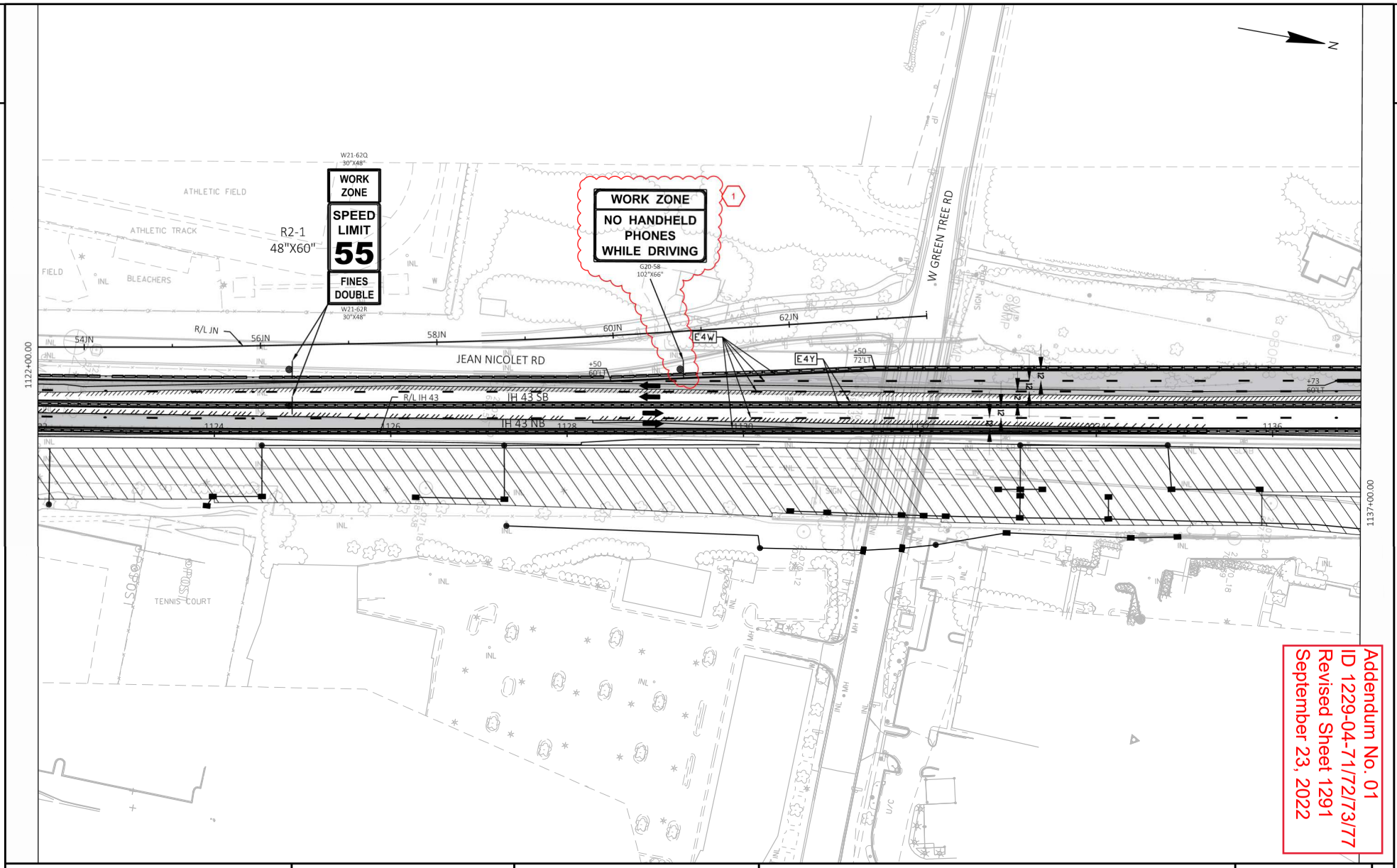
FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026110_TC1B.DWG
LAYOUT NAME - TC_4
PLOT DATE : 9/20/2022 8:30 AM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1268
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1B	SHEET 1268	E

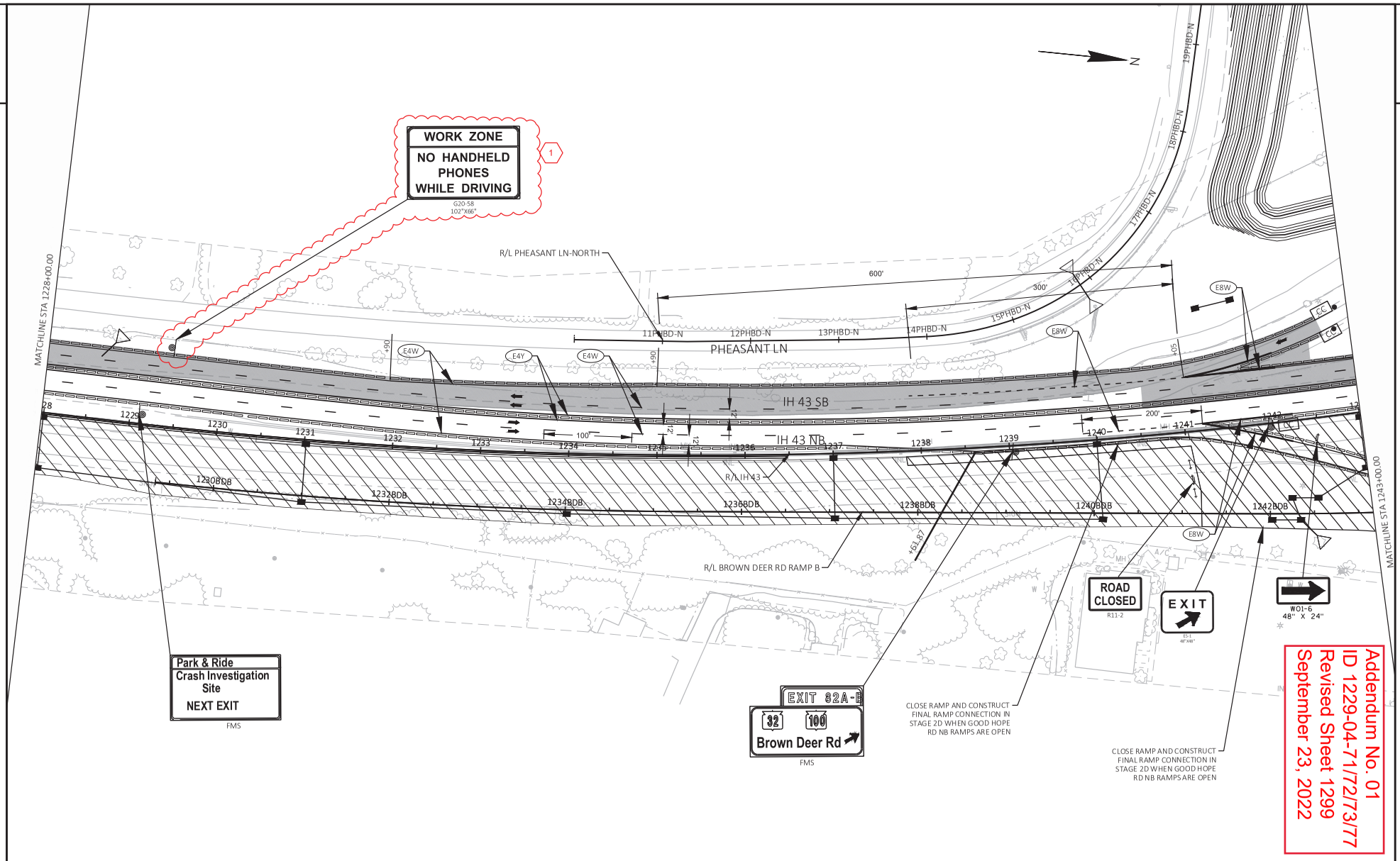
FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026110_TC1B.DWG
LAYOUT NAME - TC_6
PLOT DATE : 9/20/2022 8:31 AM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1291
September 23, 2022

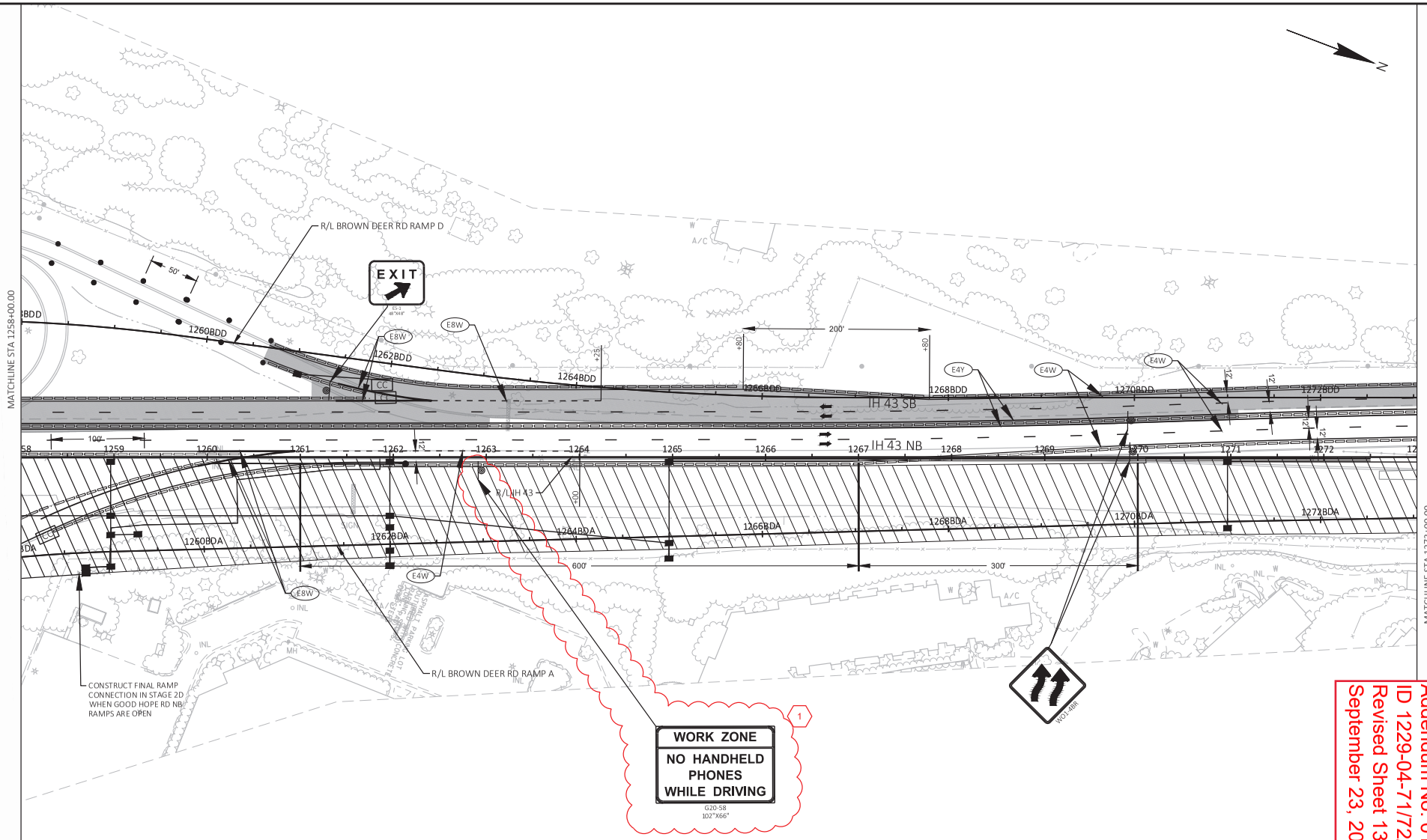
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2A	SHEET 1291	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026201-TC2A.DWG
LAYOUT NAME - Sheet - (5)
PLOT DATE : 9/16/2022 3:17 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 2 (A,B,C,D)	SHEET 1299	E

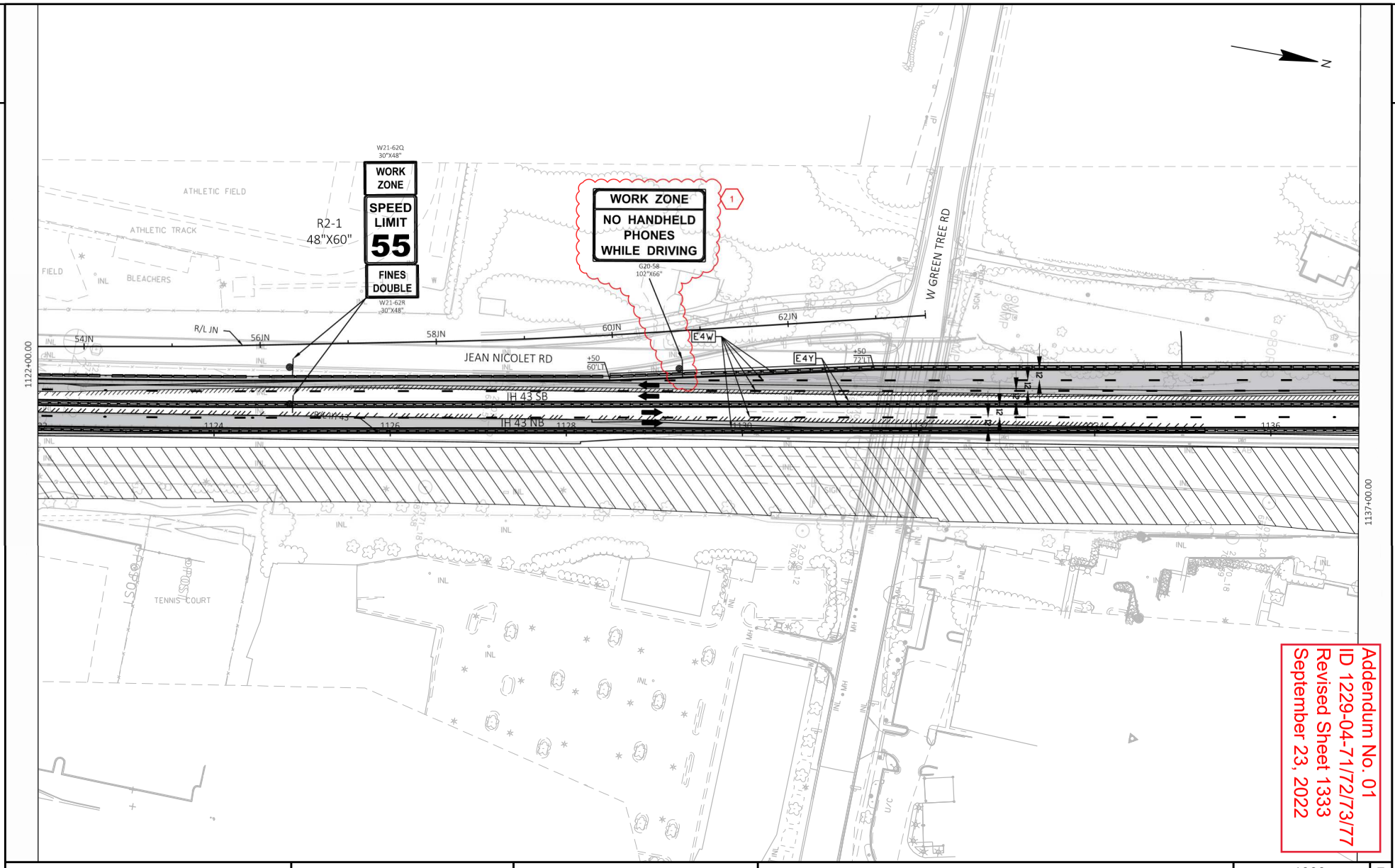
FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026215_TC2.DWG
LAYOUT NAME - TC_4
PLOT DATE : 9/19/2022 7:56 PM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1301
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 2 (A,B,C,D)	SHEET 1301	E

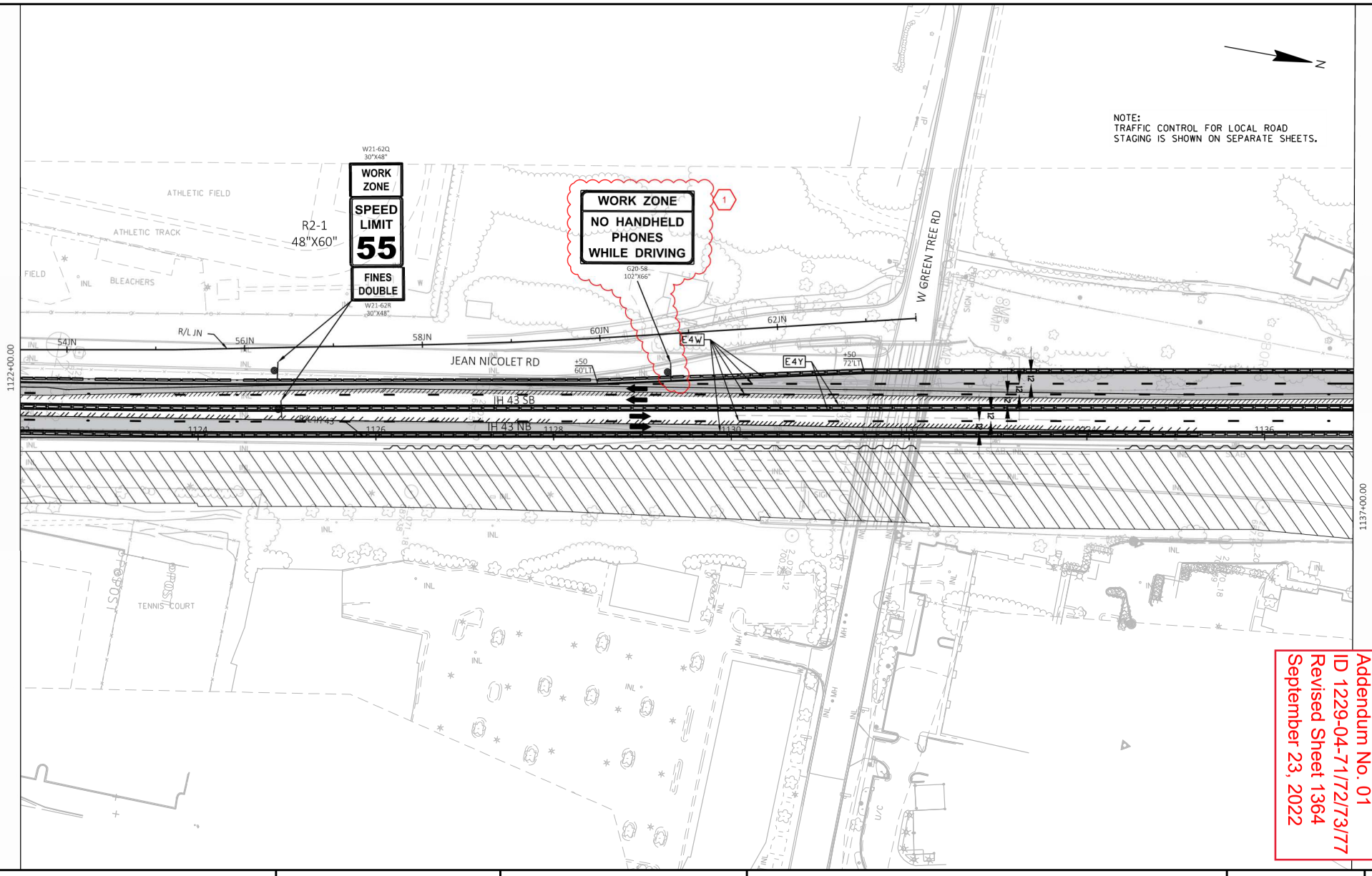
FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026215_TC2.DWG
LAYOUT NAME - TC_6
PLOT DATE : 9/19/2022 7:57 PM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1333
September 23, 2022

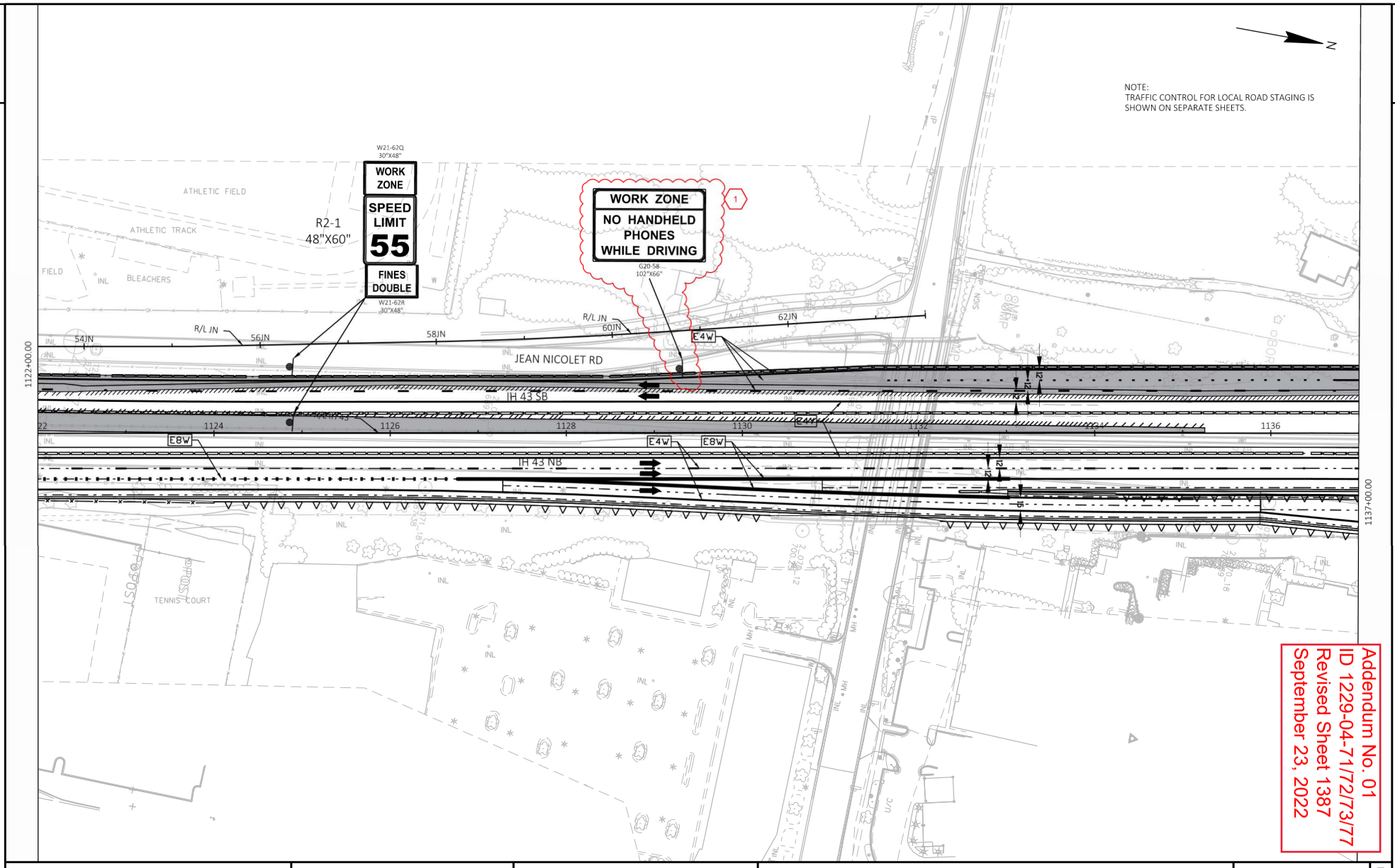
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2B	SHEET 1333	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026203-TC2B.DWG
LAYOUT NAME - Sheet - (5)
PLOT DATE : 9/16/2022 3:19 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



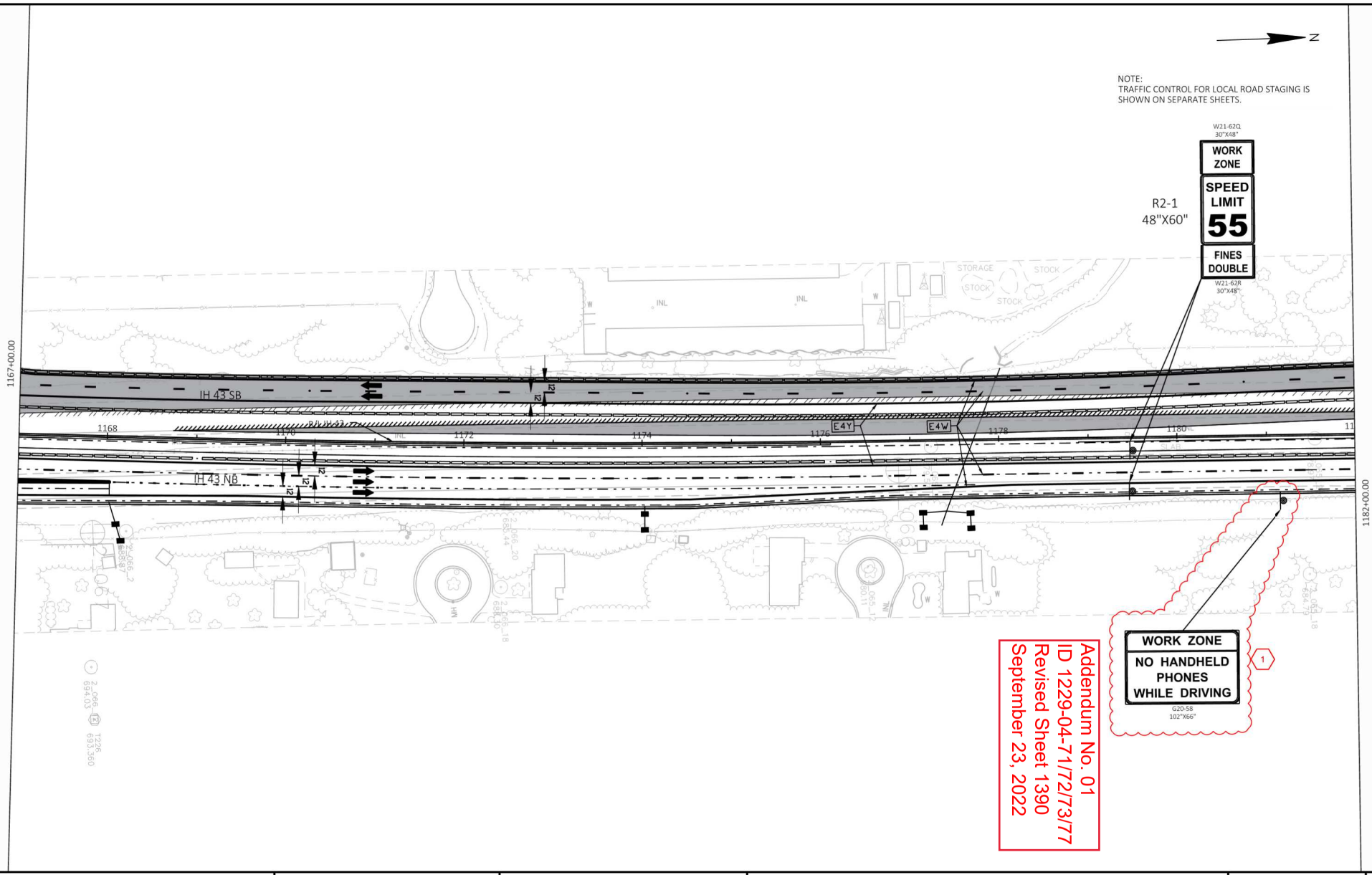
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2C	SHEET 1364	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026205-TC2C.DWG
LAYOUT NAME - Sheet - (5)
PLOT DATE : 9/16/2022 3:20 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2D	SHEET 1387	E

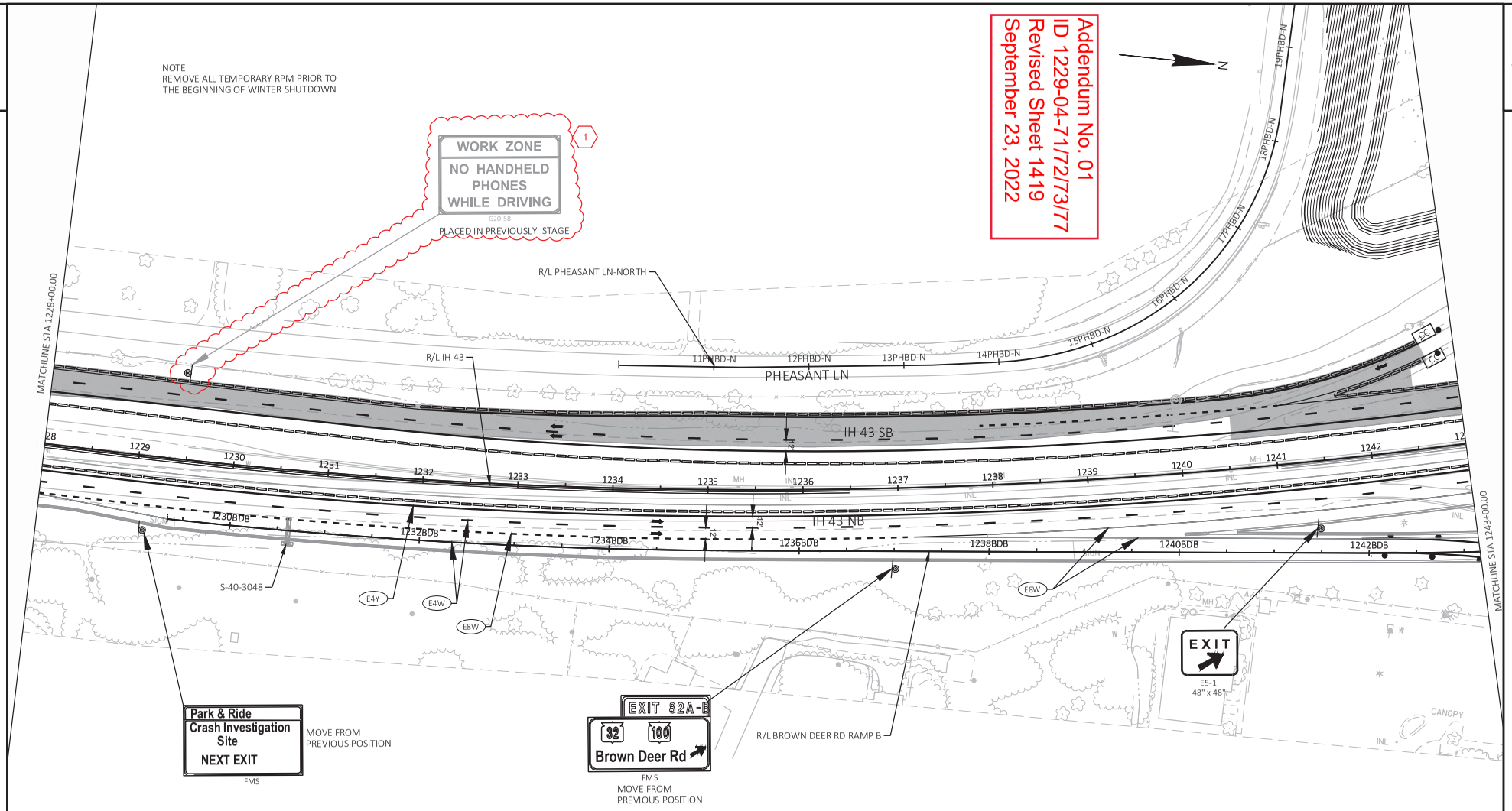
FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026207-TC2D.DWG
LAYOUT NAME - Sheet - (5)
PLOT DATE : 9/16/2022 3:25 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2D	SHEET 1390	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026207-TC2D.DWG
LAYOUT NAME - Sheet - (8)
PLOT DATE : 9/16/2022 3:26 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1419
September 23, 2022

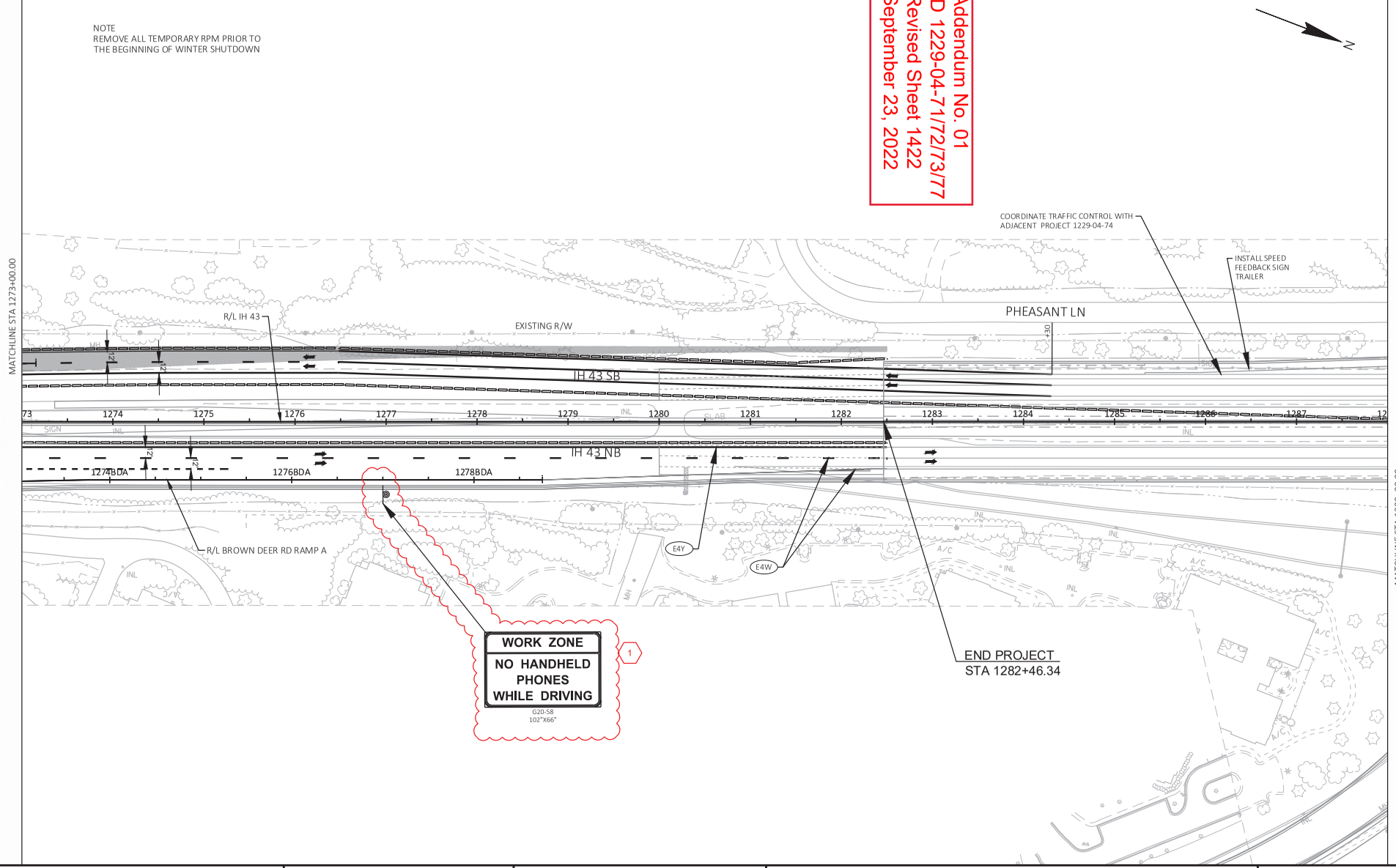


PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 2E	SHEET 1419	E

FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026210_TC2E.DWG
LAYOUT NAME - TC_4
PLOT DATE : 9/20/2022 9:26 AM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1422
September 23, 2022

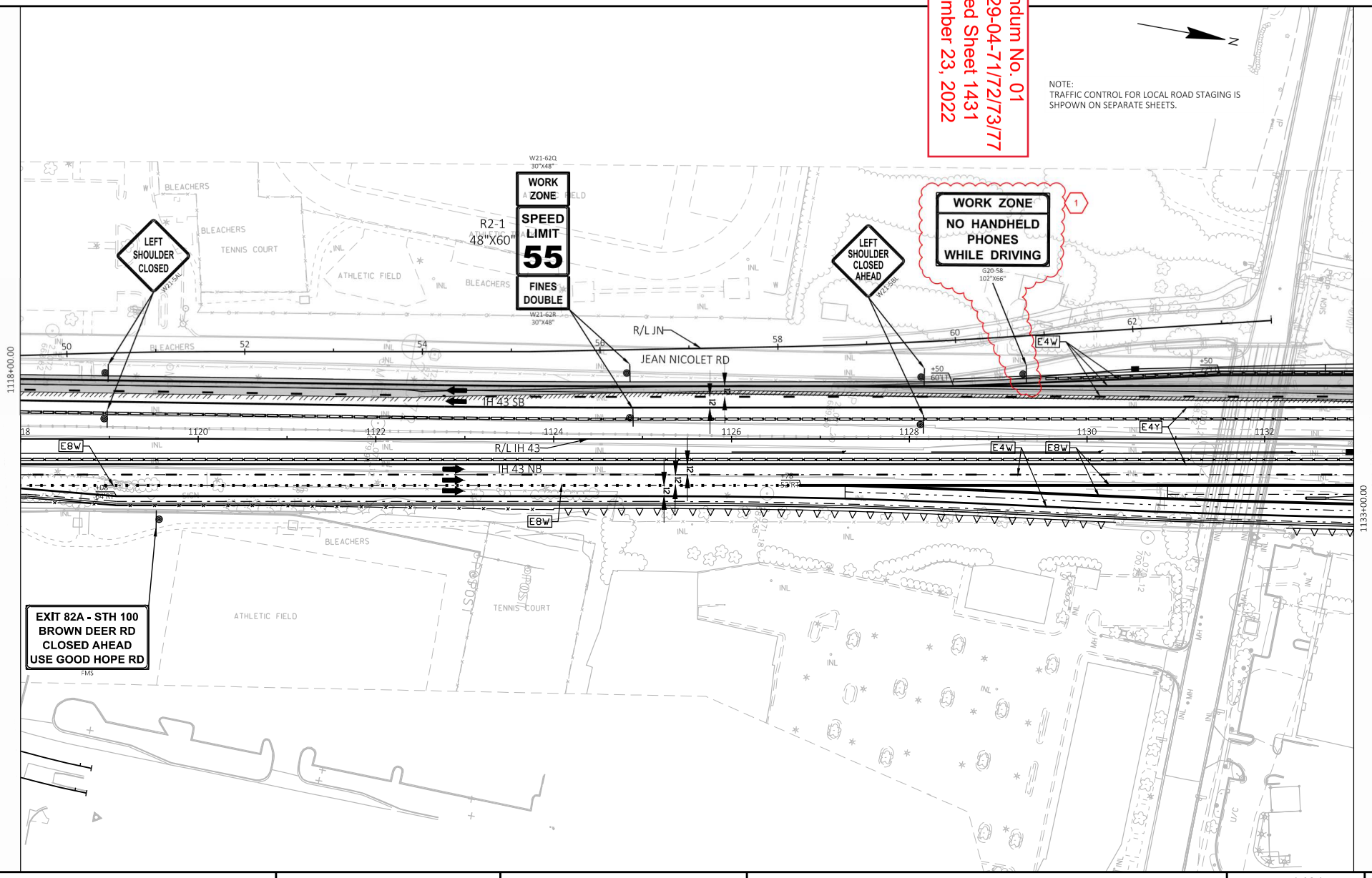
NOTE
REMOVE ALL TEMPORARY RPM PRIOR TO
THE BEGINNING OF WINTER SHUTDOWN



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 2E	SHEET 1422	E

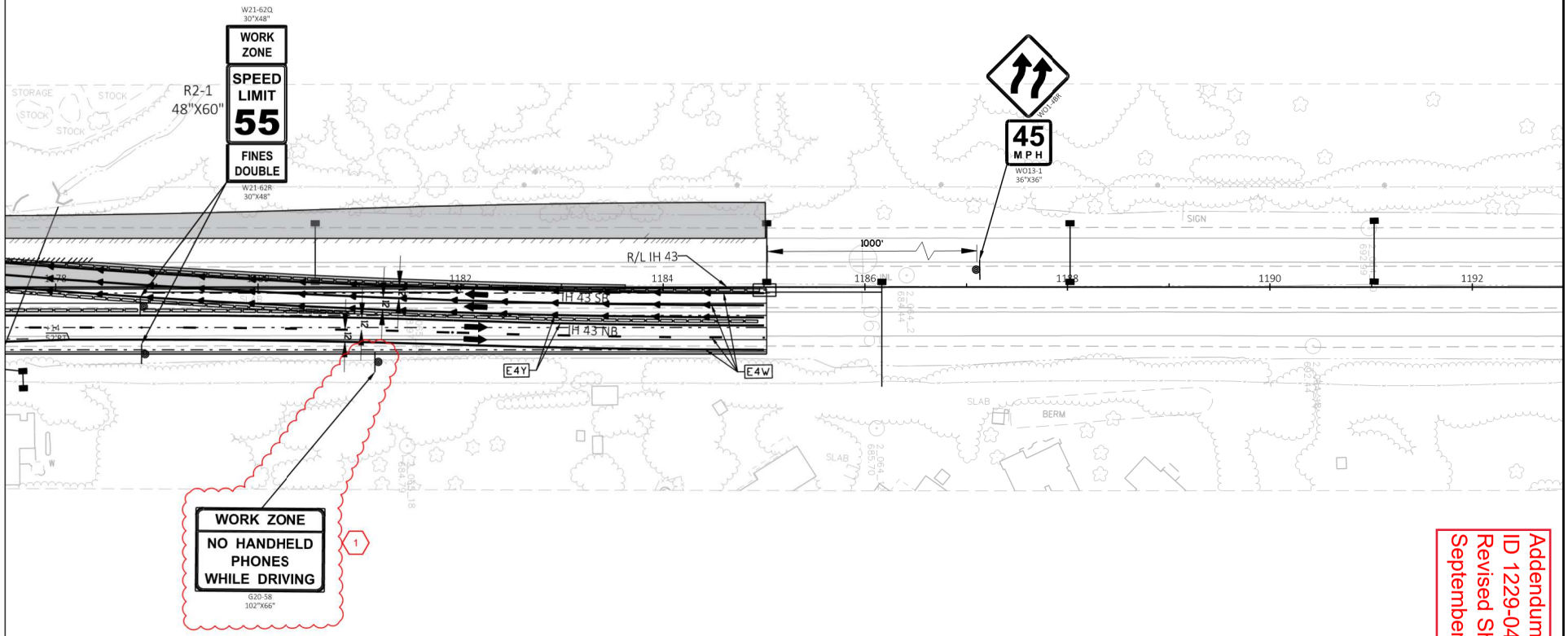
FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026210_TC2E.DWG
LAYOUT NAME - TC_7
PLOT DATE : 9/20/2022 9:33 AM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1431
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3A	SHEET 1431	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026301-TC3A.DWG
LAYOUT NAME - Sheet - (7)
PLOT DATE : 9/16/2022 3:46 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



NOTE:
TRAFFIC CONTROL FOR LOCAL ROAD STAGING IS SHPOWN ON SEPARATE SHEETS.

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1435
September 23, 2022

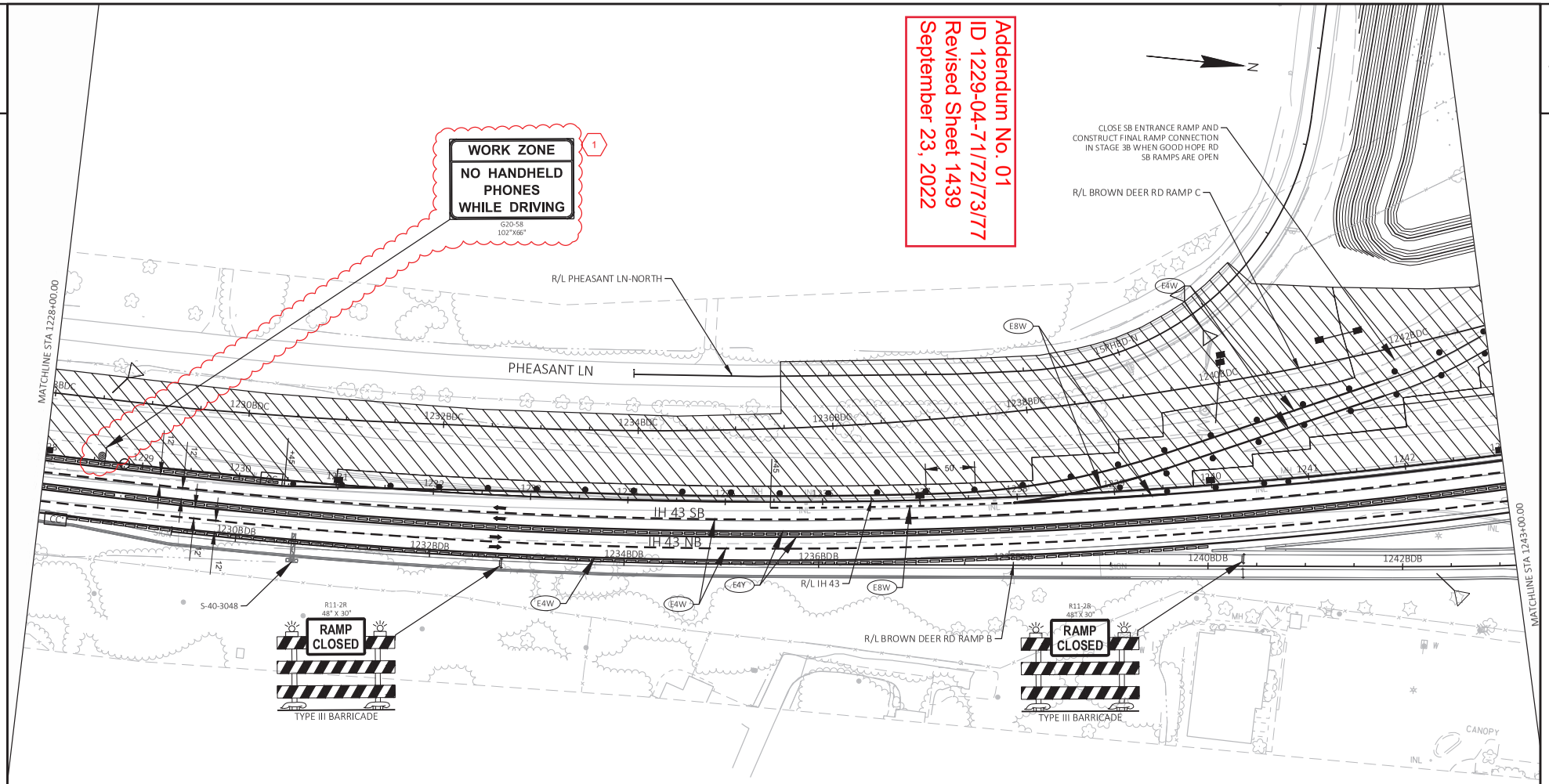
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3A	SHEET 1435	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026301-TC3A.DWG
LAYOUT NAME - Sheet - (10-1)
PLOT DATE : 9/16/2022 3:46 PM PLOT BY : DAN BAUMANN PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

2

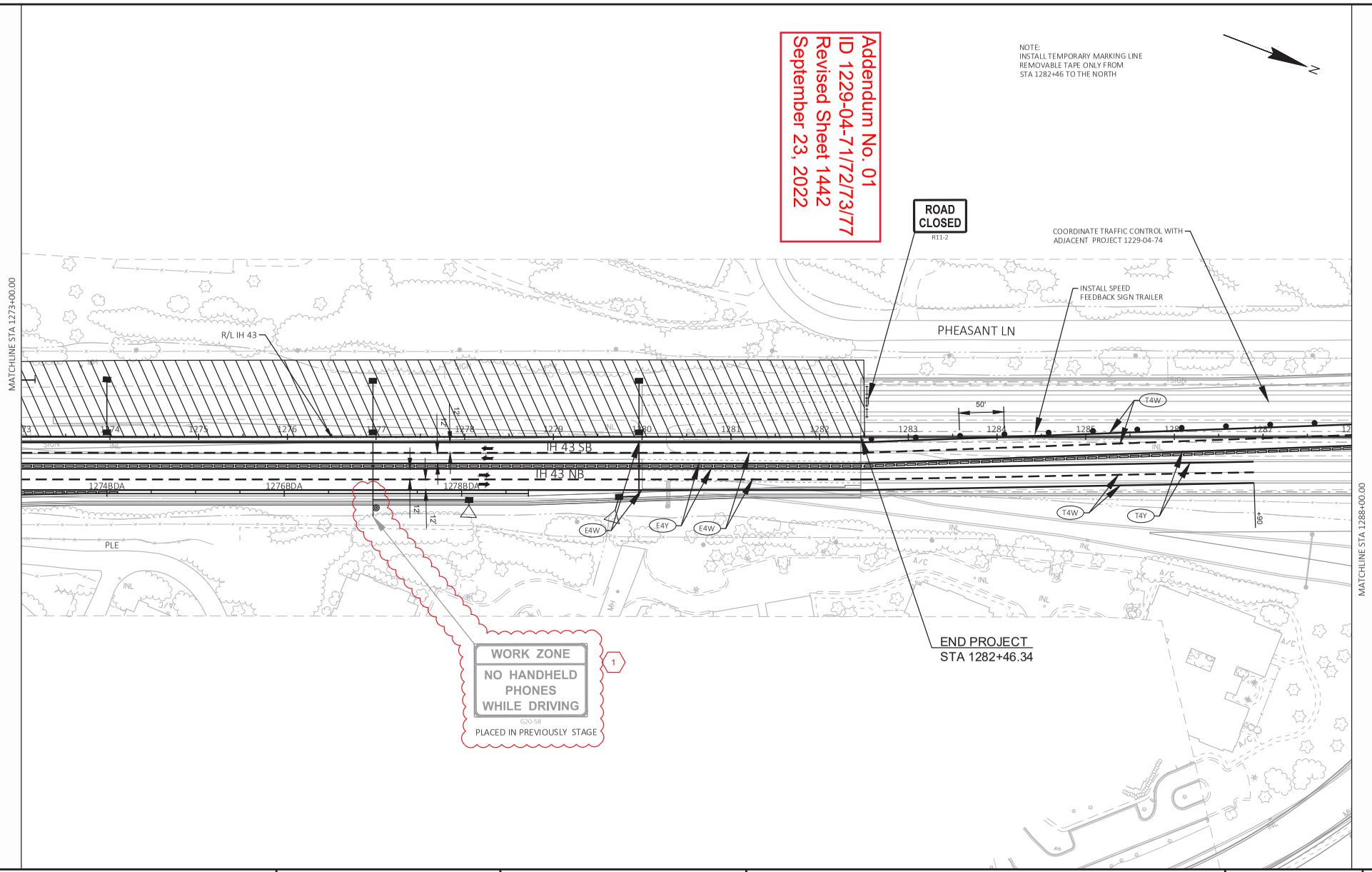
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1439
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 3	SHEET 1439	E

FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026306_TC3.DWG
LAYOUT NAME - TC_4
PLOT DATE : 9/20/2022 10:06 AM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

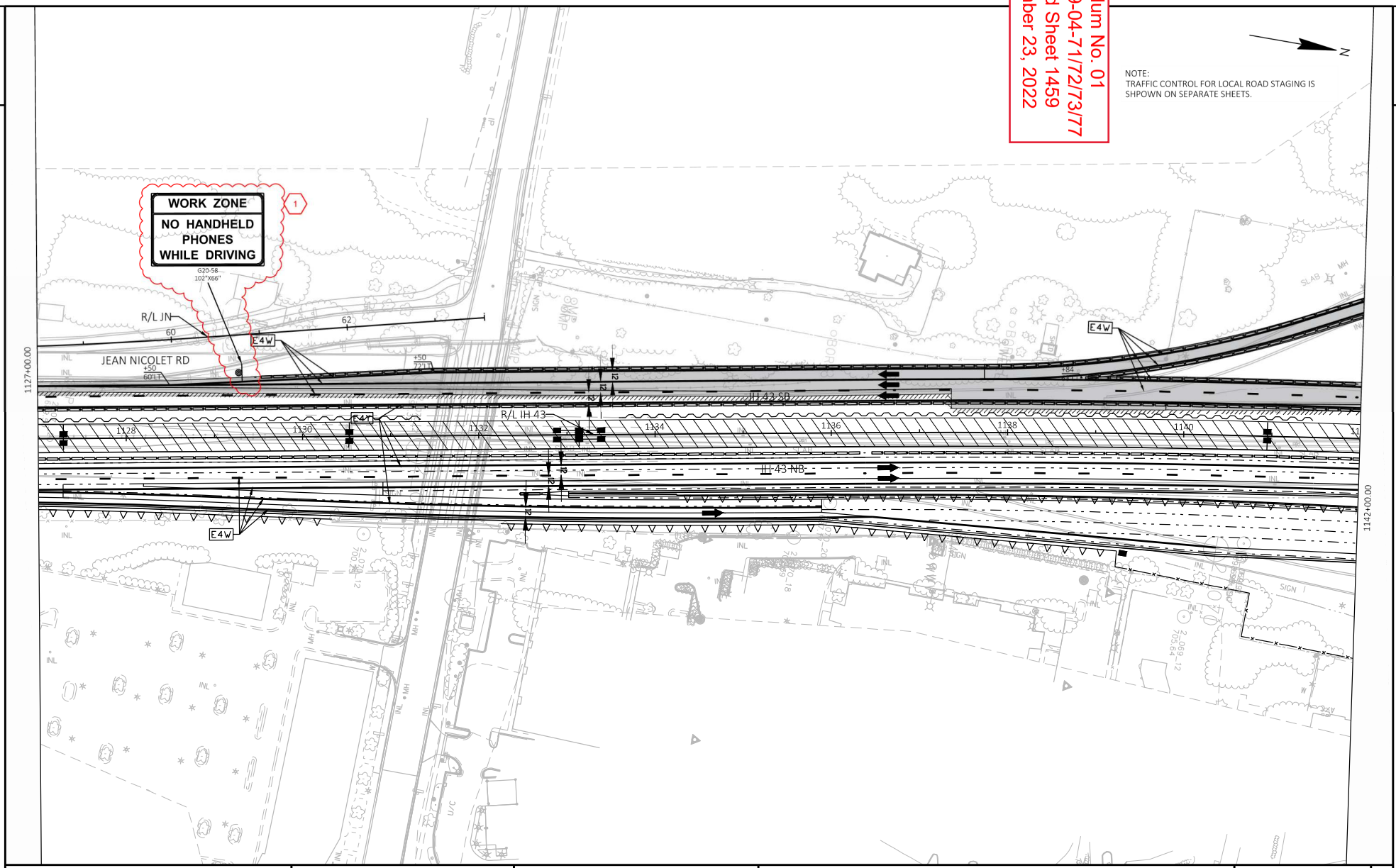
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1442
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 3	SHEET 1442	E

FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026306_TC3.DWG
LAYOUT NAME - TC_7
PLOT DATE : 9/20/2022 10:08 AM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1459
September 23, 2022

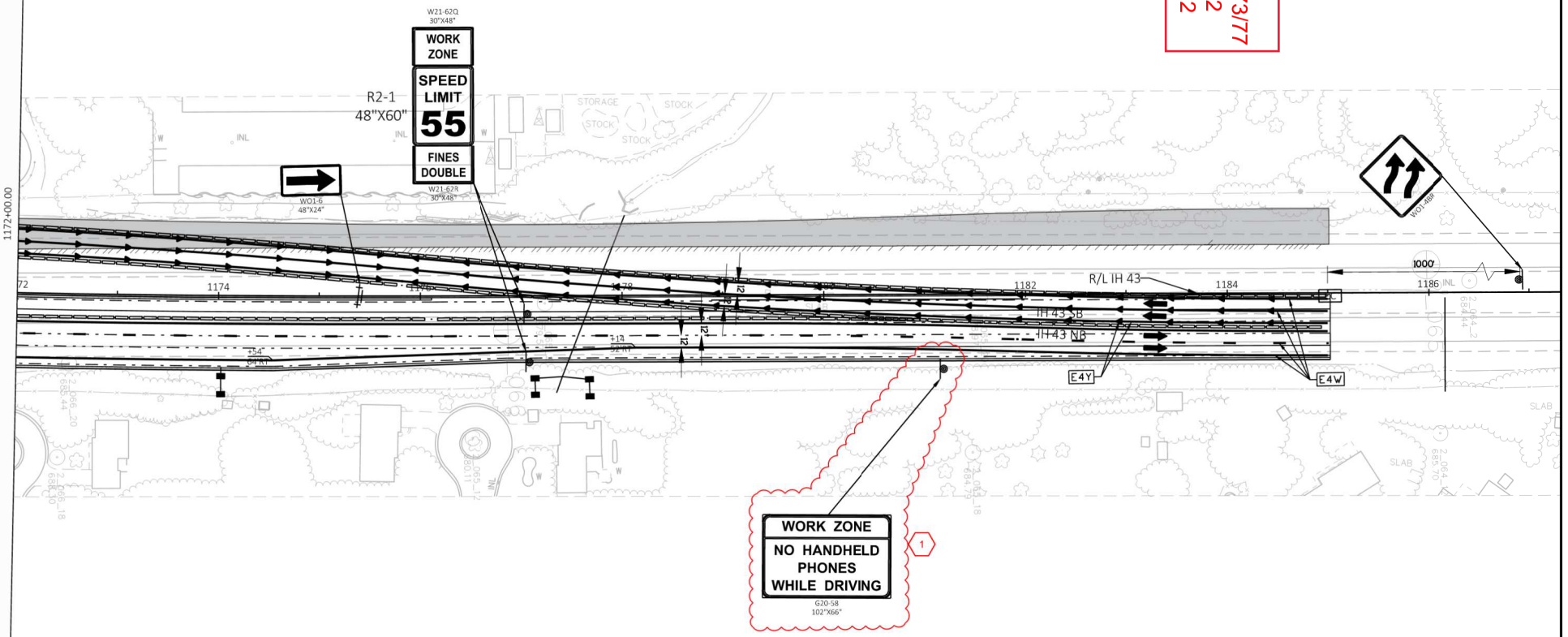


PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3B	SHEET 1459	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026302-TC3B.DWG
LAYOUT NAME - Sheet - (5)
PLOT DATE : 9/16/2022 4:00 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

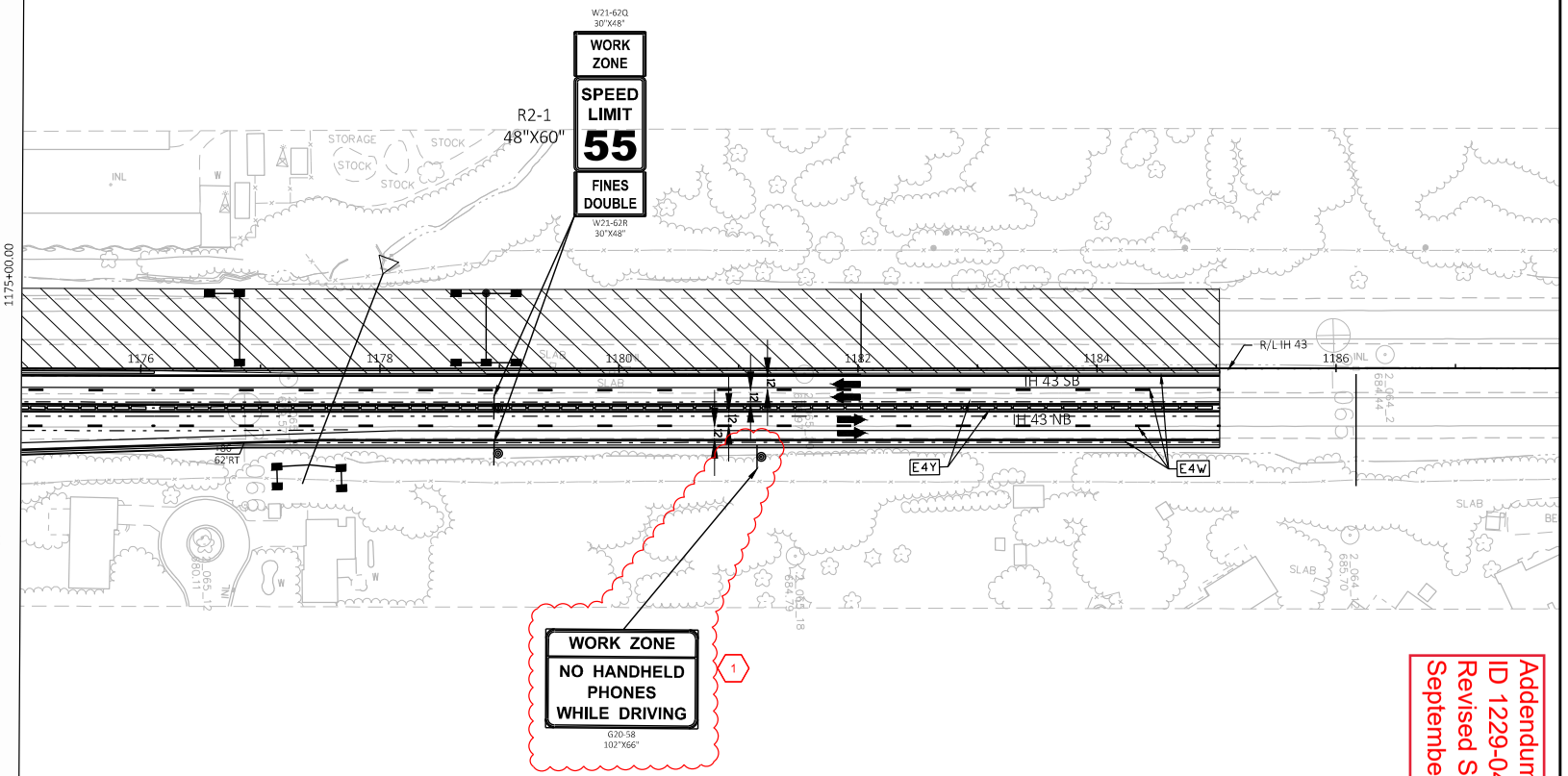
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1462
September 23, 2022

NOTE:
TRAFFIC CONTROL FOR LOCAL ROAD STAGING IS SHPOWN ON SEPARATE SHEETS.



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3B	SHEET 1462	E

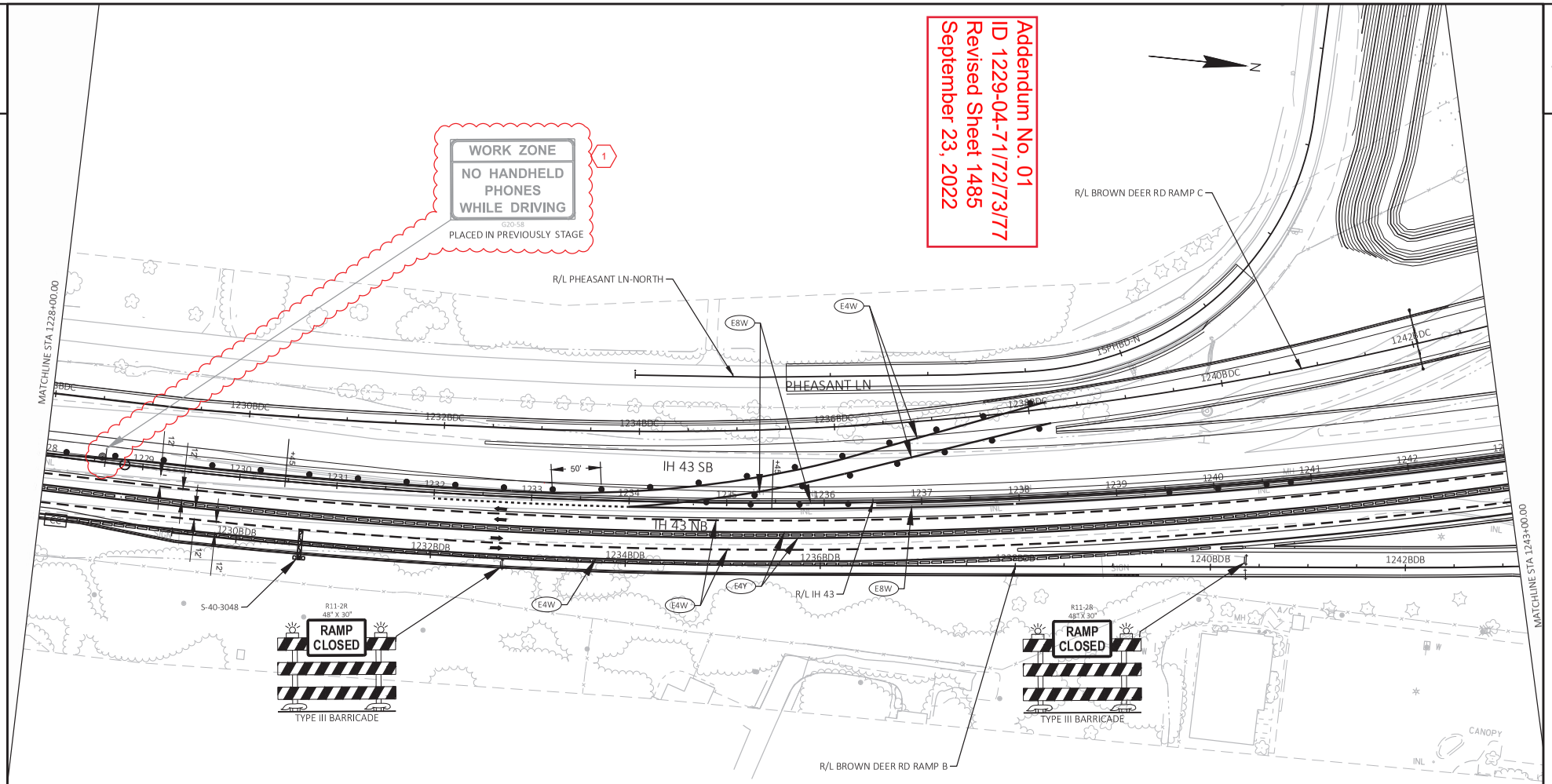
FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026302-TC3B.DWG
LAYOUT NAME - Sheet - (8)
PLOT DATE : 9/16/2022 4:01 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 4A	SHEET 1481	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026401-TC4A.DWG
LAYOUT NAME - Sheet - (11)
PLOT DATE : 9/16/2022 4:22 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

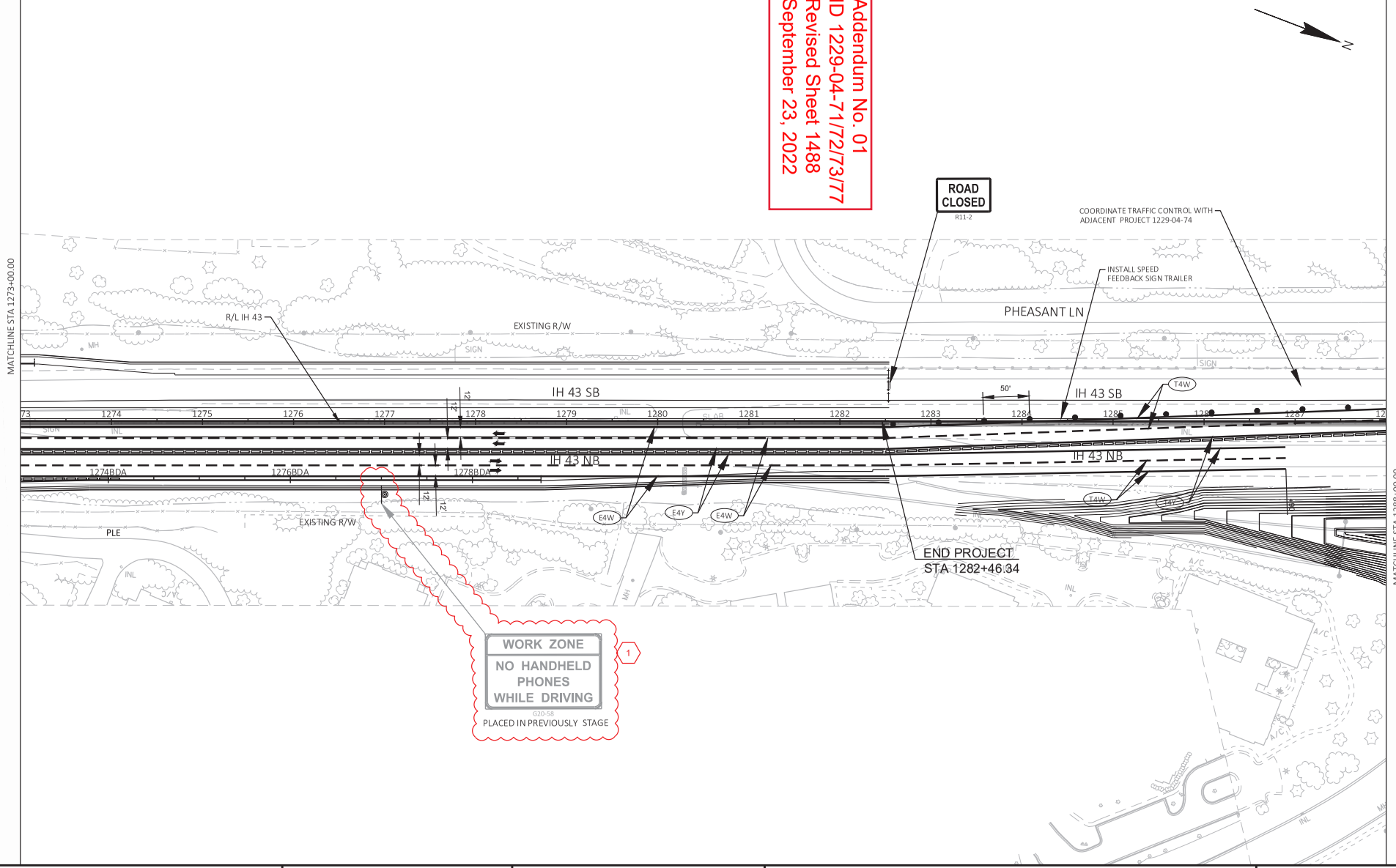
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1485
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 4A	SHEET 1485	E

FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026406_TC4A.DWG
LAYOUT NAME - TC_4
PLOT DATE : 9/20/2022 10:22 AM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

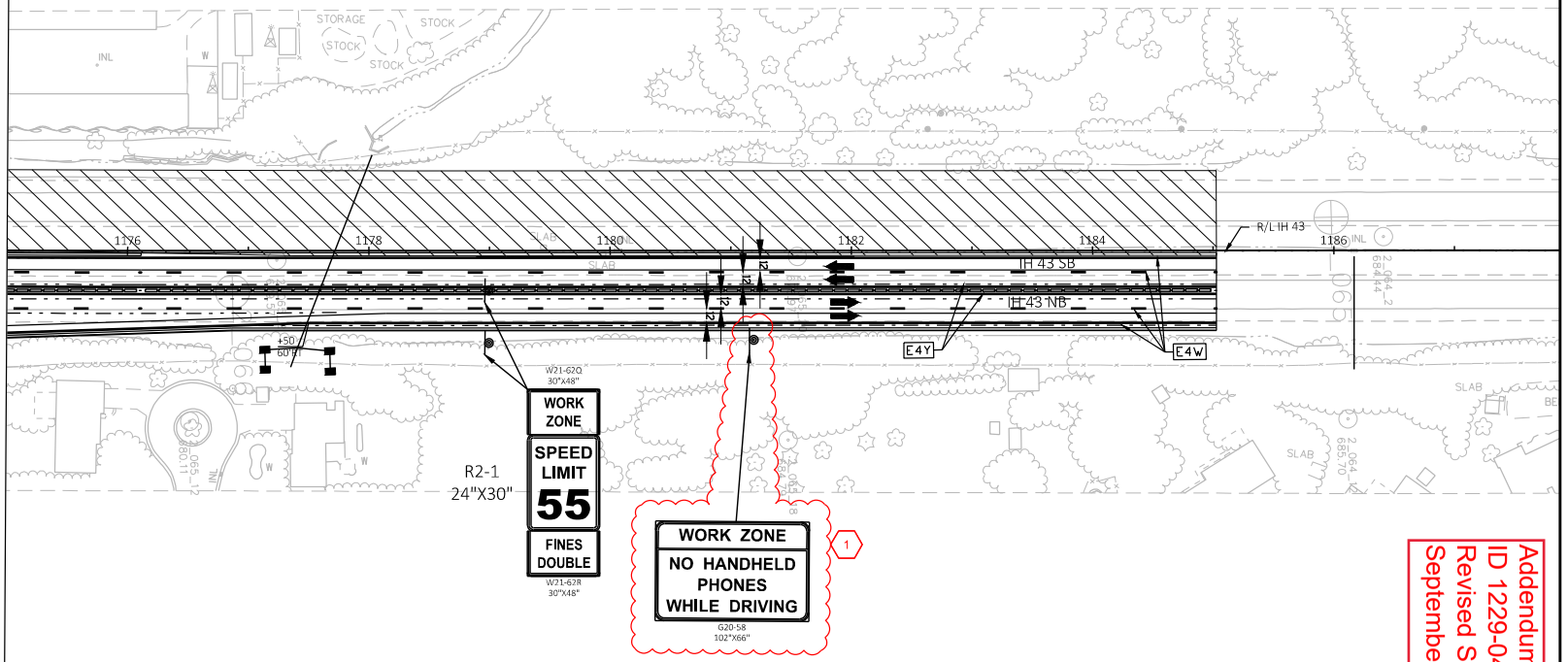
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1488
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 4A	SHEET 1488	E

FILE NAME : C:\CADDLIB\PW\HNTB_KIAN.CHAI\GREATLAKES\D0256213\026406_TC4A.DWG
LAYOUT NAME - TC_7
PLOT DATE : 9/20/2022 10:24 AM
PLOT BY : KIAN K. CHAI
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

NOTE:
TRAFFIC CONTROL FOR LOCAL ROAD STAGING IS SHOWN ON SEPARATE SHEETS.

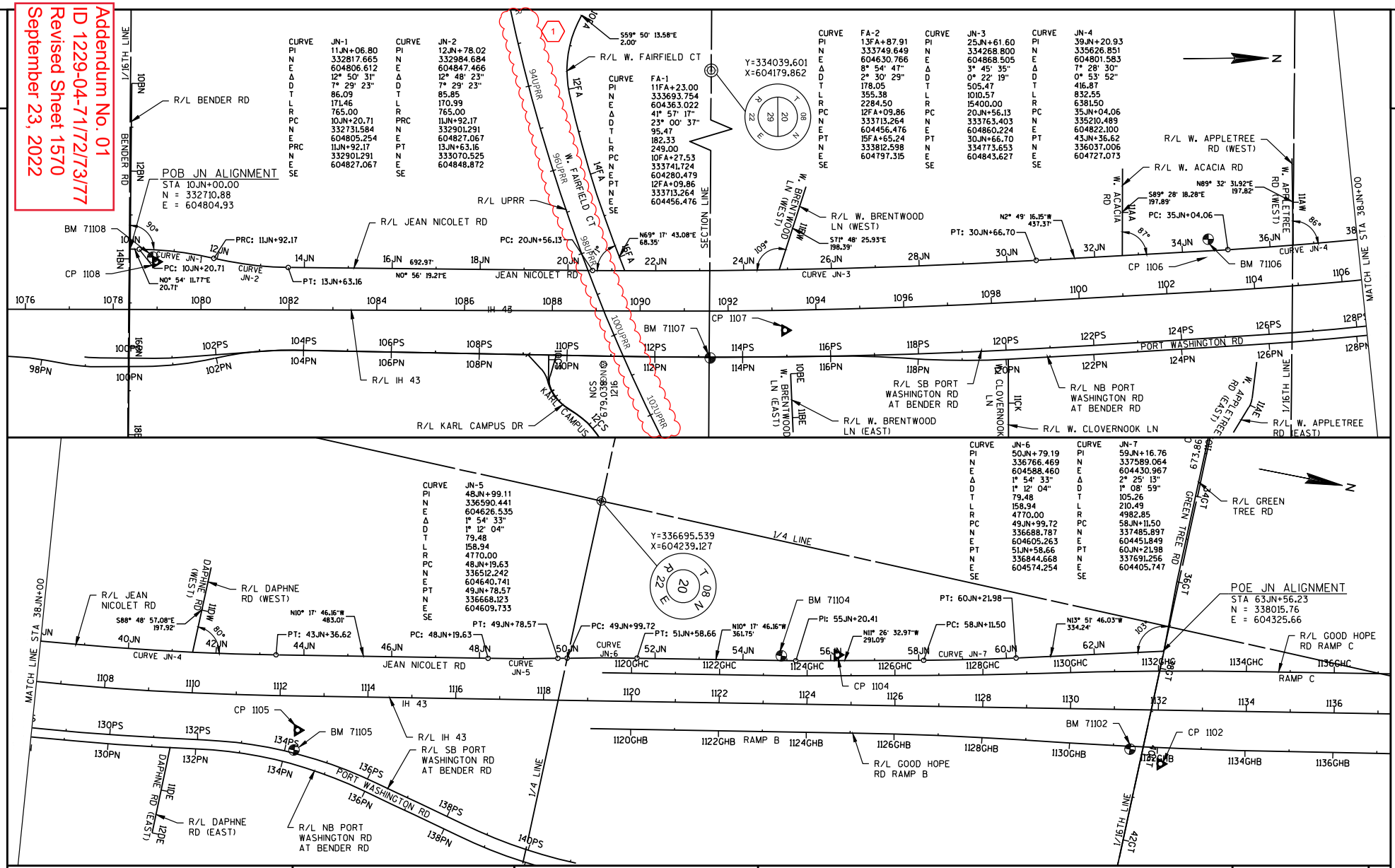


Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1514
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 4B	SHEET 1514	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026402-TC4B.DWG
LAYOUT NAME - Sheet - (11)
PLOT DATE : 9/16/2022 4:40 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1570
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	ALIGNMENT PLAN: JEAN NICOLET RD	SHEET 1570	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\027208_ALI_JN.DWG
LAYOUT NAME - JN
PLOT DATE : 9/19/2022 3:36 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1:200_XREF
WISDOT/CADDS SHEET 44

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1605
September 23, 2022

ABANDONING SEWER

CATEGORY	LOCATION	204.0291.S ABANDONING SEWER CY
1000	PORT WASHINGTON ROAD	10
	TOTAL	**10**

EXCAVATION, HAULING, AND DISPOSING OF PETROLEUM CONTAMINATED SOIL

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET		205.0501.S TON	COMMENTS
		LOCAL ROADS							
1000	2	BENDER RD	16BN+25	-	17BN+25	0' - 120'	LT	3.4	10' TO 16'+ BELOW GRADE
		STAGE 2 SUBTOTAL						3.4	
		TOTAL						**3.4**	

1

SAWING ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET		690.0150 SAWING ASPHALT LF	* CAT 1000 690.0250 SAWING CONCRETE LF	* CAT 1020 690.0250 SAWING CONCRETE LF
		LOCAL ROADS								
1000	1	N PORT WASHINGTON RD	96PN+67	-	99PN+63	3 - 21	LT	--	--	602
			100PN+20			0 -68	LT/RT	--	106	--
			100PN+36	-	101PN+05	9 - 16	LT	--	142	--
			100PN+20	-	110PN+70	0 -38	LT/RT	--	1,092	--
			108PN+39			46	RT	29	--	--
			111PN+70	-	115PN+37	0 - 32	LT	--	30	--
			103PN+88	-	104PN+23	6 - 29	LT	--	367	--
			136PN+71			0 -65	RT	--	67	--
			137PN+13	-	139PN+99	0 - 27	LT	--	586	--
1000	1	W BRENTWOOD LN	10BE+79			0 - 12	LT/RT	26	--	--
1000	1	W CLOVERNOOK LN	10CK+71			0 - 12	LT/RT	--	26	--
1000	1	W APPLE TREE RD	10AE+26			60	LT	15	--	--
			10AE+97			28	LT	17	--	--
			11AE+12			0 - 12	LT/RT	21	--	--
1000	1	W DAPHNE RD	10DE+86			30	RT	14	--	--
			11DE+25			0 - 12	LT/RT	22	--	--
		STAGE 1 SUBTOTAL						144	2,416	602
		LOCAL ROADS								
1000	2	W DEVON ST/W BENDER RD	16BN+90	-	17BN+36	0 - 20	LT/RT	--	87	--
1000	2	N PORT WASHINGTON RD	99PN+43			20 - 42	LT	--	22	--
			99PN+15	-	99PN+63	0 - 20	LT	--	81	--
			101PN+36	-	101PN+67	35	LT	32	--	--
			101PN+77	-	102PN+12	36	LT	35	--	--
			103PN+88	-	104PN+23	42	RT	35	--	--
			104PN+90	-	105PN+16	53	RT	25	--	--
			136PN+71			0 - 60	LT/RT	--	61	--
1000	2	KARL CAMPUS DRIVE	11CS+66			0 - 11	LT/RT	22	--	--
		STAGE 2 SUBTOTAL						149	164	--
		TOTALS						**293**	**2,580**	**602**

*ADDITIONAL QUANTITES SHOWN ELSEWHERE

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

STORM SEWER PIPES

LOCATION	FROM	TO	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT	608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH LF	608.0315 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH LF	608.0324 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	608.0336 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 36-INCH LF	608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH LF	608.0415 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 15-INCH LF	608.0418 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH LF	608.0424 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	608.0436 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 36-INCH LF	608.0536 SSPRC CLASS V 36-INCH LF	608.3012 STORM SEWER PIPE CLASS III-A 12-INCH LF	608.3015 STORM SEWER PIPE CLASS III-A 15-INCH LF	608.3018 STORM SEWER PIPE CLASS III-A 18-INCH LF	608.3036 STORM SEWER PIPE CLASS III-A 36-INCH LF	COMMENTS
1229-04-71 STAGE 1A																				
PN	204P-S1A	203P-S2A	642.84	642.69	0.0050	--	–	–	--	--	--	–	–	29	--	–	–	--	--	
PN	204P-S1A	EX INLET	642.84	642.78	0.0030	--	–	19	--	--	--	–	–	--	--	–	–	--	--	
PN	208P-S1A	210P-S1A	646.61	646.58	0.0030	--	–	–	--	--	--	–	–	--	--	–	11	--	--	
PN	210P-S1A	204P-S1A	644.81	642.84	0.0083	--	–	–	--	--	--	–	–	238	--	–	–	--	--	
PN	211P-S1A	213P-S1A	646.51	645.59	0.0062	1 --	–	–	--	--	--	–	–	--	--	–	–	--	148	
PN	211R-S1A	211P-S1A	646.61	646.51	0.0034	--	–	–	--	--	--	–	–	--	--	–	–	--	29 1	
PN	213P-S1A	210P-S1A	645.59	644.81	0.0062	--	–	–	--	--	--	–	–	--	--	–	–	--	126	
PN	214P-S1A	214K-S1A	651.01	649.85	0.0085	1 --	–	–	--	--	--	136	1 –	--	--	–	–	-- 1	--	
PN	214K-S1A	211R-S1A	647.13	646.61	0.0042	--	–	–	--	--	--	–	–	--	--	–	–	--	126	
PN	211Q-S1A	211R-S1A	648.12	648.08	0.0050	7	–	–	--	--	--	–	–	--	--	–	–	--	--	
PN	223P-S1A	286P-S1A	652.40	652.11	0.0117	--	–	–	--	--	--	–	–	--	--	–	–	25	--	
PN	227P-S1A	229P-S1A	657.51	657.36	0.0048	--	–	–	--	--	30	–	–	--	--	–	–	--	--	
PN	228A-S1A	RS_25	652.16	652.01	0.0097	--	–	–	--	--	--	–	–	15	--	–	–	--	--	
PN	228G-S1A	223P-S1A	653.77	652.46	0.0054	--	–	–	--	--	--	–	–	--	--	–	–	253	--	
PN	228P-S1A	228G-S1A	653.82	653.77	0.0047	--	–	–	--	--	--	–	–	--	--	–	–	11	--	
PN	229P-S1A	228P-S1A	657.36	656.79	0.0086	--	–	–	--	--	--	67	–	--	--	–	–	--	--	
PN	230P-S1A	228A-S1A	652.53	652.16	0.0056	--	–	–	--	--	--	–	–	--	64	–	–	--	--	
PN	231P-S1A	234P-S1A	665.80	665.69	0.0040	--	–	–	--	--	--	–	–	--	--	–	26	--	--	
PN	232L-S1A	232P-S1A	667.15	666.91	0.0049	--	–	–	--	--	--	–	–	--	--	–	49	--	--	
PN	232P-S1A	231P-S1A	665.93	665.80	0.0040	--	–	–	--	--	--	–	–	--	--	–	33	--	--	
PN	233A-S1A	233P-S1A	667.08	666.97	0.0057	--	–	–	--	--	--	–	–	--	--	–	22	--	--	
PN	233P-S1A	234P-S1A	665.59	663.20	0.0294	--	–	–	--	--	--	–	–	--	--	–	–	81	--	
PN	234P-S1A	229P-S1A	663.20	657.36	0.0281	--	–	–	--	--	--	207	–	--	--	–	–	--	--	
PN	235P-S1A	233P-S1A	669.51	669.35	0.0048	--	–	–	--	--	--	–	–	--	--	–	33	--	--	
PN	240P-S1A	242P-S1A	678.13	677.99	0.0048	--	–	–	--	--	--	–	–	--	--	–	30	--	--	
PN	242P-S1A	233P-S1A	675.25	665.59	0.0461	--	–	–	--	--	--	–	–	--	--	–	–	210	--	
PN	245P-S1A	248P-S1A	686.19	686.09	0.0034	--	–	–	--	--	--	–	–	--	--	–	30	--	--	
AE	247A-S1A	247B-S1A	688.18	687.96	0.0050	--	45	–	--	--	--	–	–	--	--	–	–	--	--	
AE	247B-S1A	247C-S1A	687.96	687.76	0.0040	--	51	–	--	--	--	–	–	--	--	–	–	--	--	
AE	247C-S1A	247P-S1A	687.76	687.50	0.0040	--	65	–	--	--	--	–	–	--	--	–	–	--	--	
PN	247P-S1A	248P-S1A	687.50	686.09	0.0163	--	–	–	--	--	--	–	–	--	--	–	87	--	--	
PN	248P-S1A	242P-S1A	685.84	675.25	0.0438	--	–	–	--	--	--	–	–	--	--	–	–	242	--	
PN	251P-S1A	252P-S1A	679.81	678.44	0.0075	--	–	–	--	--	--	–	183	--	--	–	–	--	--	
PN	252A-S1A	252J-S1A	679.18	678.80	0.0045	--	–	–	--	--	20	–	–	--	--	–	–	--	--	
PN	252J-S1A	252P-S1A	678.55	678.44	0.0035	--	–	–	--	--	--	30	–	--	--	–	–	--	--	
PN	252P-S1A	254P-S1A	678.44	678.05	0.0069	--	–	–	--	--	--	–	57	--	--	–	–	--	--	
PN	253A-S1A	253P-S1A	683.19	683.09	0.0050	--	20	–	--	--	--	–	–	--	--	–	–	--	--	
PN	253P-S1A	251P-S1A	683.09	682.95	0.0047	--	–	–	--	--	30	–	–	--	--	–	–	--	--	
PN	254P-S1A	EX INLET	678.05	677.95	0.0030	--	–	–	--	--	--	–	33	--	--	–	–	--	--	
PN	255F-S1A	255P-S1A	683.93	679.23	0.1460	--	–	–	--	--	32	–	–	--	--	–	–	--	--	
PN	255P-S1A	256P-S1A	679.23	679.14	0.0050	--	–	–	--	--	18	–	–	--	--	–	–	--	--	
PN	256P-S1A	254P-S1A	678.89	678.05	0.0139	--	–	–	--	--	--	60	–	--	--	–	–	--	--	
PN	257M-S1A	257P-S1A	679.63	679.46	0.0147		–	–	--	12	--	–	–	--	--	–	–	--	--	
PN	257P-S1A	256P-S1A	679.22	679.14	0.0050	--	–	–	--	--	16	–	–	--	--	–	–	--	--	
PN	EX 1 (26)	257M-S1A	680.24	679.63	0.0433	14	–	–	--	--	--	–	–	--	--	–	–	--	--	
PN	207P-S1B	208P-S1A	646.77	646.61	1 0.0030	--	–	–	--	--	--	–	–	--	--	–	53	1 --	--	
PN	209P-S1B	211P-S1A	648.53	648.27	0.0050	--	–	–	--	--	--	–	–	--	--	–	53	--	--	
PN	212P-S1B	214M-S1A	650.13	650.00	0.0050	--	–	–	--	--	--	–	–	--	--	–	27	--	--	
PN	RS_31	223P-S1A	653.24	1 652.65	0.0113	--	–	–	--	--	--	–	–	--	--	–	52	--	--	
PN	265P-S1A	254P-S1A	678.24	678.05	0.0030	--	–	–	--	--	--	–	63	--	--	–	–	--	--	
PN	214M-S1A	214N-S1A	647.74	647.24	0.0037	--	–	–	--	--	--	–	–	--	--	–	–	--	136	
PN	214N-S1A	214K-S1A	647.24	647.13	0.0040	--	–	–	--	--	--	–	–	--	--	–	–	--	27	
PN	285A-S1A	EX INLET	651.41	649.80	0.0265	--	–	–	--	--	--	61	–	--	--	–	–	--	--	

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1615
September 23, 2022

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET 1615	E

FILE NAME : C:\CADDLIB\PW\HNTB_ALMUELLER\GREATLAKES\D0229151\1229-04-71 - BLANK SHEET.DWG
LAYOUT NAME - _001
PLOT DATE : 3/22/2022 9:29 AM
PLOT BY : ALEX MUELLER
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

STORM SEWER PIPES

LOCATION	FROM	TO	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT	608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH LF	608.0315 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH LF	608.0324 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	608.0336 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 36-INCH LF	608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH LF	608.0415 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 15-INCH LF	608.0418 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH LF	608.0424 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	608.0436 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 36-INCH LF	608.0536 SSPRC CLASS V 36-INCH LF	608.3012 STORM SEWER PIPE CLASS III-A 12-INCH LF	608.3015 STORM SEWER PIPE CLASS III-A 15-INCH LF	608.3018 STORM SEWER PIPE CLASS III-A 18-INCH LF	608.3036 STORM SEWER PIPE CLASS III-A 36-INCH LF	COMMENTS
				STAGE 1A SUBTOTAL		21	181	19	0	12	146	561	336	282	64	0	506	822	592	
												1					1		1	
1229-04-71 STAGE 1B																				
PN	201P-S1B	202-S1B	642.24	641.86	0.0057	--	–	–	--	--	--	–	–	66	--	–	–	--	--	
BN	202A-S1B	202C-S1B	642.81	642.76	0.0050	--	–	–	--	--	--	8	–	--	--	–	–	--	--	
BN	202C-S1B	202E-S1B	641.26	641.08	0.0049	--	–	–	--	--	--	–	–	37	--	–	–	--	--	
BN	202E-S1B	201-S2A	641.08	640.82	0.0050	--	–	–	--	--	--	–	–	52	--	–	–	--	--	
PN	202P-S1B	201P-S1B	642.66	642.24	0.0108	--	–	–	--	--	--	–	–	38	--	–	–	--	--	
BN	202-S1B	202C-S1B	641.86	641.26	0.0050	--	–	–	--	--	--	–	–	119	--	–	–	--	--	
PN	264P-S1B	265P-S1A	678.31	678.24	0.0030	--	–	–	--	--	--	–	25	--	--	–	–	--	--	
PN	266P-S1B	264P-S1B	678.38	678.31	0.0030	--	–	–	--	--	--	–	25	--	--	–	–	--	--	
PN	268A-S1B	268P-S1B	678.54	678.46	0.0041	--	–	–	--	--	21	–	–	--	--	–	–	--	--	
PN	268P-S1B	264P-S1B	678.46	678.31	0.0048	--	–	–	--	--	30	–	–	--	--	–	–	--	--	
PN	269P-S1B	268P-S1B	678.58	678.46	0.0050	--	–	–	--	--	24	–	–	--	--	–	–	--	--	
PN	270P-S1B	268P-S1B	678.58	678.46	0.0050	--	–	–	--	--	24	–	–	--	--	–	–	--	--	
PN	271P-S1B	273P-S1B	678.99	678.84	0.0049	--	–	–	--	--	31	–	–	--	--	–	–	--	--	
PN	273P-S1B	266P-S1B	678.84	678.38	0.0030	--	–	–	--	--	--	–	149	--	--	–	–	--	--	
PN	276P-S1B	277P-S1B	680.70	680.50	0.0050	--	–	–	--	--	41	–	–	--	--	–	–	--	--	
PN	277P-S1B	273P-S1B	679.34	678.84	0.0030	--	–	–	--	--	--	–	167	--	--	–	–	--	--	
				STAGE 1B SUBTOTAL		0	0	0	0	0	171	8	366	312	0	0	0	0	0	
				1229-04-71 STAGE 1 TOTAL		21	181	19	0	12	317	569	702	594	64	0	506	822	592	
1229-04-71 STAGE 2A																				
PN	203P-S2A	202P-S1B	642.69	642.66	0.0050	--	–	–	--	--	--	–	–	7	--	–	–	--	--	
PN	204A-S2A	204B-S2A	643.52	643.45	0.0025	--	–	–	--	--	--	–	–	--	--	–	28	--	--	
PN	204B-S2A	204P-S1A	643.45	643.37	0.0039	--	–	–	--	--	--	–	–	--	--	–	21	--	--	
PN	225P-S2A	226P-S2A	657.69	657.54	0.0048	--	–	–	--	--	30	–	–	--	--	–	–	--	--	
PN	226P-S2A	227P-S1A	657.54	657.51	0.0061	--	–	–	--	--	6	–	–	--	--	–	–	--	--	
PN	236P-S2A	235P-S1A	669.55	669.51	0.0058	--	–	–	--	--	--	–	–	--	--	–	7	--	--	
PN	237P-S2A	236P-S2A	669.75	669.55	0.0049	--	–	–	--	--	--	–	–	--	--	–	41	--	--	
PN	238P-S2A	239P-S2A	678.37	678.21	0.0049	--	–	–	--	--	--	–	–	--	--	–	33	--	--	
PN	239P-S2A	240P-S1A	678.21	678.13	0.0052	--	–	–	--	--	--	–	–	--	--	–	15	--	--	
PN	243P-S2A	244P-S2A	686.36	686.26	0.0034	--	–	–	--	--	--	–	–	--	--	–	30	--	--	
PN	244P-S2A	245P-S1A	686.26	686.19	0.0037	--	–	–	--	--	--	–	–	--	--	–	18	--	--	
PN	249P-S2A	250P-S2A	683.19	683.05	0.0047	--	–	–	--	--	30	–	–	--	--	–	–	--	--	
PN	250P-S2A	251P-S1A	683.05	682.95	0.0056	--	–	–	--	--	18	–	–	--	--	–	–	--	--	
PN	252H-S2A	252P-S1A	678.51	678.44	0.0035	--	–	–	--	--	--	18	–	--	--	–	–	--	--	
PN	258P-S2A	261P-S2A	678.55	678.36	0.0048	--	–	–	--	--	41	–	–	--	--	–	–	--	--	
PN	259P-S2A	258P-S2A	678.68	678.55	0.0050	--	–	–	--	--	25	–	–	--	--	–	–	--	--	
PN	260P-S2A	258P-S2A	678.68	678.55	0.0050	--	–	–	--	--	26	–	–	--	--	–	–	--	--	
PN	261P-S2A	264P-S1B	678.36	678.31	0.0048	--	–	–	--	--	9	–	–	--	--	–	–	--	--	
PN	262P-S2A	261P-S2A	678.48	678.36	0.0050	--	–	–	--	--	25	–	–	--	--	–	–	--	--	
PN	263P-S2A	261P-S2A	678.48	678.36	0.0050	--	–	–	--	--	25	–	–	--	--	–	–	--	--	
PN	274P-S2A	273P-S1B	678.94	678.84	0.0054	--	–	–	--	--	18	–	–	--	--	–	–	--	--	
PN	275P-S2A	274P-S2A	679.10	678.94	0.0048	--	–	–	--	--	33	–	–	--	--	–	–	--	--	
PN	278P-S2A	277P-S1B	680.62	680.50	0.0050	--	–	–	--	--	25	–	–	--	--	–	–	--	--	
PN	RS_26	204A-S2A	645.19	644.30	0.0277	--	–	–	--	--	--	–	–	--	--	32	–	--	--	
PN	RS_27	204A-S2A	643.91	643.78	0.0166	--	–	–	--	--	--	–	–	--	--	8	–	--	--	
PN	RS_25	2049-S2A	652.01	651.45	0.0101	--	–	–	--	--	--	–	–	55	--	–	–	--	--	
PN	279P-S2A	278P-S2A	680.78	680.62	0.0050	--	–	–	--	--	30	–	–	--	--	–	–	--	--	
		1		STAGE 2A SUBTOTAL		0	0	0	0	0	341	18	0	62	0	40	193	0	0	
1229-04-71 STAGE 2C																				
PN	214C-S2C	214L-S2C	648.47	648.26	0.0043	1 --	–	–	--	--	--	–	–	--	--	–	–	--	51	1
PN	214D-S2C	214C-S2C	648.62	648.47	0.0058	--	–	–	--	--	--	1 –	–	--	--	–	–	--	25	
PN	214E-S2C	214F-S2C	651.66	651.59	0.0035	1 --	–	–	--	--	20	–	–	--	--	–	–	1 --	--	

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1616
September 23, 2022

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET 1616	E

FILE NAME : C:\CADDLIB\PW\HNTB_ALMUELLER\GREATLAKES\D0229151\1229-04-71 - BLANK SHEET.DWG
LAYOUT NAME - _001
PLOT DATE : 3/22/2022 9:29 AM PLOT BY : ALEX MUELLER PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

STORM SEWER PIPES

						608.0312	608.0315	608.0324	608.0336	608.0412	608.0415	608.0418	608.0424	608.0436	608.0536	608.3012	608.3015	608.3018	608.3036	
						STORM SEWER PIPE REINFORCED CONCRETE CLASS III				STORM SEWER PIPE REINFORCED CONCRETE CLASS IV					SSPRC CLASS V	STORM SEWER PIPE CLASS III-A				
			INLET	DISCHARGE	SLOPE	12-INCH	15-INCH	24-INCH	36-INCH	12-INCH	15-INCH	18-INCH	24-INCH	36-INCH	36-INCH	12-INCH	15-INCH	18-INCH	36-INCH	COMMENTS
LOCATION	FROM	TO	ELEVATION	ELEVATION	FT/FT	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	
PN	214F-S2C	214H-S2C	651.59	651.50	0.0035	--	--	--	--	--	23	--	--	--	--	--	--	--	--	1
PN	214G-S2C	214F-S2C	651.64	651.59	0.0035	1 --	--	--	--	--	15	1 --	--	--	--	--	--	--	--	
PN	214H-S2C	214P-S1A	651.50	651.26	0.0035	--	--	--	--	--	70	--	--	--	--	--	--	1 --	--	
PN	217P-S2C	214D-S2C	649.08	648.62	0.0036	--	--	--	--	--	--	--	--	129	--	--	--	--	--	
PN	221P-S2C	RS_31	653.29	653.24	0.0103	--	--	--	--	--	--	--	--	--	--	--	5	--	--	
PN	285P-S2C	290-S2C	650.29	649.93	0.0300	--	--	--	--	--	--	--	--	--	--	--	--	--	12	
PN	214L-S2C	214M-S1A	648.26	647.74	0.0036	--	--	--	--	--	--	--	--	--	--	--	--	--	142	1
PN	RS_32	214D-S2C	650.46	650.32	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	29	--	
PN	RS_33	217P-S2C	650.72	650.58	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	28	--	
PN	290-S2C	217P-S2C	649.93	649.08	0.0166	--	--	--	51	--	--	--	--	--	--	--	--	--	--	
				STAGE 2C SUBTOTAL		0	0	0	51	0	128	1 0	0	129	0	0	5	57	230	1
1229-04-71 STAGE 2D																				
PN	214B-S2D	RS_32	650.61	650.46	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	29	--	
PN	215P-S2D	RS_33	650.86	650.72	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	29	--	
				STAGE 2D SUBTOTAL		0	0	0	0	0	0	1 0	0	0	0	0	0	58	0	1
				1229-04-71 STAGE 2 TOTAL		0	0	0	51	0	469	18	0	191	0	40	1 198	115	230	
				1229-04-71 TOTAL		21	181	19	51	12	786	587	702	785	64	40	704	937	822	
											1									

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1617
September 23, 2022

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET 1617	E

FILE NAME : C:\CADDLIB\PW\HNTB_ALMUELLER\GREATLAKES\D0229151\1229-04-71 - BLANK SHEET.DWG
LAYOUT NAME - _001
PLOT DATE : 3/22/2022 9:29 AM PLOT BY : ALEX MUELLER PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1618
September 23, 2022

STORM SEWER STRUCTURES

LOCATION	STRUCTURE	STATION	OFFSET	RIM ELEVATION	INVERT ELEVATION	DEPTH FT	611.0530 MANHOLE COVERS TYPE J EACH	611.0535 MANHOLE COVERS TYPE J-SPECIAL EACH	611.0624 INLET COVERS TYPE H EACH	611.0642 INLET COVERS TYPE MS EACH	611.0654 INLET COVERS TYPE V EACH	611.1004 CATCH BASINS 4-FT DIAMETER EACH	611.1005 CATCH BASINS 5-FT DIAMETER EACH	611.1006 CATCH BASINS 6-FT DIAMETER EACH	611.2004 MANHOLES 4-FT DIAMETER EACH	611.2005 MANHOLES 5-FT DIAMETER EACH	611.2006 MANHOLES 6-FT DIAMETER EACH	611.2007 MANHOLES 7-FT DIAMETER EACH	611.2008 MANHOLES 8-FT DIAMETER EACH	611.3004 INLETS 4-FT DIAMETER EACH	611.3901 INLETS MEDIAN 1 GRATE EACH	611.3902 INLETS MEDIAN 2 GRATE EACH	COMMENTS
1229-04-71 STAGE 1A																							
PN	204P-S1A	100+60.92	26.50' RT	648.65	642.84	5.23	–	--	2	--	--	–	--	--	--	–	–	--	2	--	–	–	1A/2A
PN	208P-S1A	102+98.76	26.52' RT	650.96	646.61	3.35	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	210P-S1A	102+98.30	37.51' RT	652.10	644.81	6.29	–	--	1	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	211P-S1A	105+75.46	26.50' RT	653.58	646.51	6.06	–	--	1	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	211Q-S1A	106+04.33	33.53' RT	654.32	648.12	5.13	1	--	–	--	--	–	--	--	1	–	–	--	–	--	–	–	
PN	211R-S1A	106+04.15	26.50' RT	653.74	646.61	6.46	–	--	1	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	232L-S1A	120+14.86	100.08' RT	671.71	667.15	4.74	–	--	–	1	--	–	--	--	--	–	–	--	–	--	1	–	
PN	213P-S1A	104+27.90	26.50' RT	652.25	645.59	5.66	–	--	1	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	214P-S1A	108+66.49	26.50' RT	655.45	651.01	3.65	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	223P-S1A	114+33.60	28.50' RT	658.05	652.40	4.65	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	227P-S1A	117+63.71	1.50' LT	662.04	657.51	3.72	–	--	1	--	--	–	--	--	--	–	–	--	–	--	–	–	
PN	228A-S1A	117+11.24	2.14' LT	660.80	652.16	7.73	–	1	–	--	--	–	--	--	--	–	1	--	–	--	–	–	
PN	228G-S1A	116+87.55	28.50' RT	659.85	653.77	5.08	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	228P-S1A	116+97.22	33.80' RT	660.62	653.82	5.77	1	--	–	--	--	–	--	--	--	1	–	--	–	--	–	–	
PN	229P-S1A	117+65.11	28.50' RT	661.54	657.36	3.17	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	231P-S1A	119+87.10	50.77' RT	670.59	665.80	3.80	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	232P-S1A	120+18.97	46.89' RT	671.92	665.93	4.99	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	233A-S1A	120+47.47	48.00' RT	671.68	667.08	4.78	–	--	–	2	--	–	--	--	--	–	–	--	–	--	–	1	
PN	233P-S1A	120+50.38	28.50' RT	673.91	665.59	7.53	–	--	1	--	--	–	--	--	--	–	–	--	1	--	–	–	
PN	234P-S1A	119+69.64	31.36' RT	669.82	663.20	5.62	–	--	1	--	--	–	1	--	--	–	–	--	–	--	–	–	
PN	235P-S1A	120+62.65	1.69' LT	674.89	669.51	4.38	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	240P-S1A	122+60.11	1.50' LT	684.30	678.13	5.17	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	242P-S1A	122+59.82	28.50' RT	683.75	675.25	7.50	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	245P-S1A	125+01.40	1.50' LT	691.23	686.19	4.04	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
AE	247A-S1A	11+29.08	18.50' RT	695.70	688.18	7.71	–	--	–	1	--	–	--	--	--	–	–	--	–	--	1	–	
AE	247B-S1A	11+04.24	18.51' LT	695.47	687.96	7.70	–	--	–	1	--	–	--	--	--	–	–	--	–	--	1	–	
AE	247C-S1A	10+70.08	42.48' LT	692.96	687.76	4.39	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	247P-S1A	125+84.36	53.02' RT	692.57	687.50	4.26	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	248P-S1A	125+01.44	28.50' RT	690.69	685.84	3.85	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	251P-S1A	129+01.64	1.50' LT	687.61	679.81	6.80	–	--	1	--	--	1	1	--	--	–	–	--	–	--	–	–	
PN	252A-S1A	130+02.73	48.92' RT	684.32	679.18	5.32	–	--	–	2	--	–	--	--	--	–	–	--	–	--	–	1	
PN	252J-S1A	130+84.55	28.50' RT	683.42	678.55	3.87	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	252P-S1A	130+84.33	1.52' LT	683.99	678.44	4.55	–	--	1	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	253P-S1A	129+01.43	28.50' RT	687.08	683.09	2.98	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	253A-S1A	129+01.37	48.92' RT	686.64	683.19	3.64	–	--	–	2	--	–	--	--	--	–	–	--	–	--	–	1	
PN	254P-S1A	131+41.20	9.44' LT	683.19	678.05	4.15	1	--	–	--	--	–	--	--	--	–	–	--	1	--	–	–	
PN	255P-S1A	131+18.36	61.63' RT	684.25	679.10	4.34	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	256P-S1A	131+32.46	50.15' RT	683.19	678.89	3.27	1	--	–	--	--	–	--	--	--	–	1	--	–	--	–	–	
PN	214M-S1A	108+66.28	0.00' RT	655.65	647.74	7.00	–	1	–	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	214N-S1A	107+30.00	0.00' RT	654.97	647.24	6.82	–	1	–	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	214K-S1A	107+30.00	26.50' RT	654.44	647.13	6.40	–	--	1	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	257M-S1A	131+59.32	49.82' RT	682.00	679.63	2.54	–	--	–	2	--	–	--	--	--	–	–	--	–	--	–	1	
PN	257P-S1A	131+47.83	51.62' RT	683.42	679.22	3.20	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	265P-S1A	132+03.49	1.50' LT	683.13	678.24	3.89	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
					STAGE 1A SUBTOTAL		4	3	31	11	0	20	1	8	1	1	2	0	4	0	3	4	
1229-04-71 STAGE 1B																							
PN	201P-S1B	100+55.67	45.39' LT	648.25	642.24	5.35	–	--	1	--	--	–	--	--	--	–	–	--	1	--	–	–	
BN-SE	202A-S1B	14+81.56	21.59' RT	646.84	642.81	3.25	–	--	1	--	--	–	--	--	--	–	–	--	–	1	–	–	
BN-SE	202C-S1B	14+81.09	13.36' RT	646.99	641.26	4.82	–	1	–	--	--	–	--	--	--	–	–	1	–	--	–	–	
BN-SE	202E-S1B	14+70.91	21.74' LT	646.86	641.08	5.11	–	--	1	--	--	–	--	--	--	–	1	--	–	--	–	–	
PN	202P-S1B	100+50.17	7.47' LT	649.13	642.66	5.48	–	--	1	--	--	–	1	--	--	–	–	--	–	--	–	–	
BN-SE	202-S1B	16+00.45	12.19' RT	648.48	641.86	5.71	–	1	–	--	--	–	--	--	--	–	–	1	–	--	–	–	

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET 1618	E

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1619
September 23, 2022

STORM SEWER STRUCTURES

LOCATION	STRUCTURE	STATION	OFFSET	RIM ELEVATION	INVERT ELEVATION	DEPTH FT	611.0530 MANHOLE COVERS TYPE J EACH	611.0535 MANHOLE COVERS TYPE J-SPECIAL EACH	611.0624 INLET COVERS TYPE H EACH	611.0642 INLET COVERS TYPE MS EACH	611.0654 INLET COVERS TYPE V EACH	611.1004 CATCH BASINS 4-FT DIAMETER EACH	611.1005 CATCH BASINS 5-FT DIAMETER EACH	611.1006 CATCH BASINS 6-FT DIAMETER EACH	611.2004 MANHOLES 4-FT DIAMETER EACH	611.2005 MANHOLES 5-FT DIAMETER EACH	611.2006 MANHOLES 6-FT DIAMETER EACH	611.2007 MANHOLES 7-FT DIAMETER EACH	611.2008 MANHOLES 8-FT DIAMETER EACH	611.3004 INLETS 4-FT DIAMETER EACH	611.3901 INLETS MEDIAN 1 GRATE EACH	611.3902 INLETS MEDIAN 2 GRATE EACH	COMMENTS
PN	207P-S1B	103+05.26	26.49' LT	651.02	646.77	3.26	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	209P-S1B	105+75.18	26.50' LT	653.58	648.53	4.05	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	212P-S1B	108+66.07	26.50' LT	655.11	650.13	4.17	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	264P-S1B	132+28.15	1.48' LT	683.10	678.31	3.98	–	--	1	--	--	–	--	--	--	–	–	--	1	--	–	–	
PN	266P-S1B	132+52.68	1.50' LT	683.13	678.38	3.74	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	268A-S1B	132+28.40	50.00' RT	681.98	678.54	3.62	–	--	–	2	--	–	--	--	--	–	–	--	–	--	–	1	
PN	268P-S1B	132+28.38	28.51' RT	682.56	678.46	3.11	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	269P-S1B	132+03.42	28.50' RT	682.59	678.58	3.01	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	270P-S1B	132+52.87	28.50' RT	682.59	678.58	3.01	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	271P-S1B	134+04.38	29.21' RT	684.06	678.99	4.07	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	273P-S1B	134+01.18	1.50' LT	684.25	678.84	4.41	–	--	1	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	276P-S1B	135+68.25	39.59' RT	685.16	680.70	3.65	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	277P-S1B	135+67.82	1.50' LT	685.92	679.34	5.58	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
					STAGE 1B SUBTOTAL		0	2	16	2	0	10	1	1	0	0	1	2	2	1	0	1	
					1229-04-71 STAGE 1 TOTAL		4	5	47	13	0	30	2	9	1	1	3	2	6	1	3	5	
1229-04-71 STAGE 2A																							
PN	EX204B-S2A	99+78.00	40.86' RT	649.17	–	–	–	--	1	--	--	–	--	--	--	–	–	--	–	1	–	–	
PN	EX204C-S2A	99+56.94	21.61' RT	648.87	–	–	–	--	1	--	--	–	--	--	--	–	–	--	–	1	–	–	
PN	203P-S2A	100+50.01	0.75' LT	649.07	642.69	5.39	–	--	1	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	204A-S2A	100+22.90	51.00' RT	649.10	643.52	4.58	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	204B-S2A	100+41.03	30.44' RT	648.66	643.45	4.21	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	225P-S2A	117+63.28	37.18' LT	661.47	657.69	2.79	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	226P-S2A	117+63.28	7.03' LT	662.25	657.54	3.90	–	--	1	--	--	–	--	--	--	–	–	--	–	--	–	–	
PN	236P-S2A	120+62.08	8.50' LT	675.25	669.55	4.89	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	237P-S2A	120+62.13	49.50' LT	674.07	669.75	3.32	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	238P-S2A	122+60.57	49.50' LT	683.51	678.37	4.14	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	239P-S2A	122+60.26	16.69' LT	684.09	678.21	5.07	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	243P-S2A	125+01.72	49.50' LT	690.43	686.36	3.07	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	244P-S2A	125+01.49	19.50' LT	690.97	686.26	3.71	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	249P-S2A	129+01.62	49.50' LT	686.67	683.19	2.48	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	250P-S2A	129+01.55	19.50' LT	687.21	683.05	3.16	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	252H-S2A	130+81.37	19.20' LT	683.52	678.51	4.22	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	258P-S2A	132+33.15	49.89' LT	681.97	678.55	2.42	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	259P-S2A	132+08.96	49.52' LT	682.00	678.68	2.32	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	260P-S2A	132+57.58	50.32' LT	682.00	678.68	2.32	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	261P-S2A	132+33.82	8.90' LT	682.70	678.36	3.53	–	--	1	--	--	–	--	--	--	–	–	--	1	--	–	–	
PN	262P-S2A	132+09.23	8.52' LT	682.73	678.48	3.25	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	263P-S2A	132+58.27	9.33' LT	682.73	678.48	3.25	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	274P-S2A	134+01.49	19.95' LT	683.57	678.94	3.82	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	275P-S2A	134+01.72	52.97' LT	683.12	679.10	3.03	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	278P-S2A	135+68.03	26.24' LT	685.34	680.62	3.71	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	279P-S2A	135+68.65	56.26' LT	684.81	680.78	3.04	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
					STAGE 2A SUBTOTAL		0	0	26	0	0	21	0	1	0	0	0	1	0	2	0	0	
1229-04-71 STAGE 2C																							
PN	214C-S2C	110+50.00	28.50' RT	655.74	648.47	6.27	–	--	1	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	214D-S2C	110+75.00	28.50' RT	655.82	648.62	6.20	–	--	1	--	--	–	--	1	--	–	–	--	–	--	–	–	
PN	214E-S2C	109+77.29	48.95' RT	655.80	651.66	3.33	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	214F-S2C	109+57.47	43.76' RT	656.52	651.59	4.12	1	--	–	--	--	–	--	--	1	–	–	--	–	--	–	–	
PN	214G-S2C	109+55.83	28.50' RT	655.36	651.64	2.91	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	214H-S2C	109+34.10	43.70' RT	655.36	651.50	3.05	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	217P-S2C	112+03.30	28.50' RT	656.24	649.08	6.49	–	--	1	--	--	–	--	--	--	–	–	1	–	--	–	–	
PN	221P-S2C	114+33.36	28.50' LT	658.04	653.29	3.75	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	

STORM SEWER STRUCTURES

LOCATION	STRUCTURE	STATION	OFFSET	RIM ELEVATION	INVERT ELEVATION	DEPTH FT	611.0530 MANHOLE COVERS TYPE J EACH	611.0535 MANHOLE COVERS TYPE J-SPECIAL EACH	611.0624 INLET COVERS TYPE H EACH	611.0642 INLET COVERS TYPE MS EACH	611.0654 INLET COVERS TYPE V EACH	611.1004 CATCH BASINS 4-FT DIAMETER EACH	611.1005 CATCH BASINS 5-FT DIAMETER EACH	611.1006 CATCH BASINS 6-FT DIAMETER EACH	611.2004 MANHOLES 4-FT DIAMETER EACH	611.2005 MANHOLES 5-FT DIAMETER EACH	611.2006 MANHOLES 6-FT DIAMETER EACH	611.2007 MANHOLES 7-FT DIAMETER EACH	611.2008 MANHOLES 8-FT DIAMETER EACH	611.3004 INLETS 4-FT DIAMETER EACH	611.3901 INLETS MEDIAN 1 GRATE EACH	611.3902 INLETS MEDIAN 2 GRATE EACH	COMMENTS
PN	214L-S2C	110+08.17	0.00' RT	656.17	648.26	7.00	–	1	–	--	--	–	--	--	--	–	1	--	–	--	–	–	
PN	290-S2C	112+38.22	65.71' RT	654.78	649.93	3.91	1	--	–	--	--	–	--	--	--	–	–	--	1	--	–	–	
					STAGE 2C SUBTOTAL		2	1	7	0	0	4	0	2	1	0	1	1	1	0	0	0	
1229-04-71 STAGE 2D																							
PN	214B-S2D	110+74.79	28.50' LT	655.82	650.61	4.22	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
PN	215P-S2D	112+03.30	28.50' LT	656.24	650.86	4.59	–	--	1	--	--	1	--	--	--	–	–	--	–	--	–	–	
					STAGE 2D SUBTOTAL		0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	
					1229-04-71 STAGE 2 TOTAL		2	1	35	0	0	27	0	3	1	0	1	2	1	2	0	0	
					1229-04-71 TOTAL		6	6	82	13	0	57	2	12	2	1	4	4	7	3	3	5	

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1620
September 23, 2022

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET 1620	E

TEMPORARY STORM SEWER PLUG

STAGE	ROADWAY	STATION	OFFSET	SPV.0060.0107 TEMPORARY STORM SEWER PLUG	NOTES
1A					
	PN	114+33.38	23.46' LT	1	
	PN	117+63.71	1.50' LT	1	
	PN	120+62.65	1.68' LT	1	
	PN	122+60.11	1.50' LT	1	
	PN	125+01.40	1.50' LT	1	
	PN	129+01.64	1.50' LT	1	
	PN	130+84.33	1.50' LT	1	
	PN	132+03.49	1.50' LT	1	
STAGE 1A SUBTOTAL				8	
1B					
	PN	132+28.15	1.48' LT	1	
	PN	134+01.18	1.50' LT	1	
	PN	135+67.82	1.50' LT	1	
STAGE 1B SUBTOTAL				3	
2C					
	PN	110+74.90	0.00' RT	1	
	PN	112+03.30	0.00' RT	1	
STAGE 2C SUBTOTAL				2	
PROJECT 1229-04-71 TOTALS				13	

CONCRETE COLLAR FOR STRUCTURES

STAGE	ROADWAY	ID	SPV.0060.0108 CONCRETE COLLAR STRUCTURER STRUCTURES EACH
1A			
	PN	204P-S1A	2
	PN	203P-S1A	2
	PN	210P-S1A	2
	PN	213P-S1A	2
	PN	211P-S1A	2
	PN	214P-S1A	2
	PN	254P-S1A	2
	STAGE 1A SUBTOTAL		14
1B			
	43-RL	202P-S1B	2
	43-RL	201P-S1B	2
	43-RL	202-S1B	2
	43-RL	202C-S1B	2
	43-RL	202E-S1B	2
	STAGE 1B SUBTOTAL		10

CONCRETE COLLAR FOR STRUCTURES

STAGE	ROADWAY	ID	SPV.0060.0108 CONCRETE COLLAR STRUCTURER STRUCTURES EACH
2C			
	PN	214H-S2C	2
	PN	214F-S2C	2
	PN	214E-S2C	2
	PN	214C-S2C	2
	PN	214D-S2C	2
	PN	217P-S2C	2
	PN	290-S2C	2
	STAGE 2C SUBTOTAL		14
PROJECT 1229-04-71 TOTALS			38

RECONNECT STORM SEWER

STAGE	ROADWAY	STRUCTURE ID	STATION	OFFSET	SPV.0060.0110 RECONNECT STORM SEWER EACH	NOTES
1A						
	PN	EXIST	100+46.15	15.75' RT	1	
	PN	EXIST	113+20.51	5.00' LT	1	
	PN	RS_25	117+20.97	14.05' LT	2	CONSTRUCT IN STAGE 1A/2A
	PN	254A-S2A	131+49.54	41.45' LT	1	CONSTRUCT IN STAGE 1A/2A
	PN	257M-S1A	131+59.21	49.84' RT	1	
	PN	214P-S1A	108+58.87	26.06' RT	1	CONNECT TO EX PIPE FROM EAST
	PN	211Q-S1A	105+97.82	33.70' RT	1	
STAGE 1A SUBTOTAL					8	
1B						
	PN	202P-S1B	100+50.16	7.16' LT	2	CONSTRUCT IN STAGE 1B/2A
	PN	265P-S1A	132+03.49	1.50' RT	1	
STAGE 1B SUBTOTAL					3	
2A						
	PN	204P-S1A	100+60.92	26.50' RT	1	
	PN	RS_26	100+17.99	82.71' RT	1	
	PN	RS_27	100+15.09	49.09' RT	1	
	PN	227P-S1A	117+63.71	1.50' LT	1	
	PN	235P-S1A	120+62.65	1.68' LT	1	
	PN	240P-S1A	122+60.11	1.50' LT	1	
	PN	245P-S1A	125+01.40	1.50' RT	1	
	PN	251P-S1A	129+01.64	1.50' LT	1	
	PN	252P-S1A	130+84.33	1.52' LT	1	
	PN	264P-S1A	132+28.15	1.48' LT	1	
	PN	273P-S1B	134+01.18	1.50' LT	1	
	PN	277P-S1B	135+67.82	1.50' LT	1	
STAGE 2A SUBTOTAL					12	
2C						
	PN	214M-S1A	108+66.28	0.00' RT	1	
STAGE 2C SUBTOTAL					1 (1)	
2D						
	PN	RS_32	110+74.90	0.00' RT	1	
	PN	RS_33	112+03.30	0.00' RT	1	
	PN	RS_31	114+33.38	23.46' LT	1	
STAGE 2D SUBTOTAL					3 (1)	
PROJECT 1229-04-71 TOTALS					27	

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1622
September 23, 2022

EMERGENCY PAVEMENT REPAIR ITEMS

CATEGORY	STAGE	LOCATION	* 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	390.0203 BASE PATCHING ASPHALTIC SY	450.1100.S ASPHALTIC MIXTURE FOR EXTREME CONDITIONS TON	* 465.0125 ASPHALTIC SURFACE TEMPORARY TON	495.1000.S COLD PATCH TON	* 690.025 SAWING CONCRETE LF	1 SPV.0060.0935 EMERGENCY RESPONSE TO PAVEMENT REPAIR EACH	SPV.0195.0001 HMA LONGITUDINAL JOINT REPAIR TON	SPV.0195.0002 HMA TRANSVERSE JOINT REPAIR TON
1000	ALL	PROJECT 1229-04-73	50	1,000	50	50	10	2,000	5	25	10
		TOTALS	**50**	**1,000**	**50**	**50**	**10**	**2,000**	**5**	**25**	**10**

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1629
September 23, 2022

MAINTENANCE AND REPAIR OF HAUL ROADS (1229-04-71)

CATEGORY	STAGE	LOCATION	618.0100.0001 EACH
1000	ALL	PROJECT 1229-04-71	1
		TOTAL	**1**

FINISHING ROADWAY 1229-04-71

CATEGORY	STAGE	LOCATION	213.0100.0001 EACH
1000	ALL	PROJECT 1229-04-71	1
		TOTAL	**1**

MOBILIZATION

CATEGORY	STAGE	LOCATION	619.1000 EACH
1000	ALL	PROJECT 1229-04-71	0.13
		TOTAL	**0.13**

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

3

EMERGENCY RESPONSE TO TRAFFIC INCIDENT INVOLVING CONCRETE BARRIER TEMPORARY PRECAST (1)

CATEGORY	STAGE	LOCATION	SPV.0060.0940 EACH
1000	ALL		1
	TOTAL		1

EMERGENCY RESPONSE TO TRAFFIC INCIDENT INVOLVING CRASH CUSHION (1)

CATEGORY	STAGE	LOCATION	SPV.0060.0945 EACH
1000	ALL		1
	TOTAL		1

EXPOSING EXISTING INFRASTRUCTURE ITEMS

CATEGORY	LOCATION	SPV.0060.0950 EXPOSING EXISTING INFRASTRUCTURE PAVED AREA EACH	SPV.0060.0955 EXPOSING EXISTING INFRASTRUCTURE UNPAVED AREA EACH
1000	UNDISTRIBUTED	2	2
	PROJECT 1229-04-71 TOTAL	2	2

TRAFFIC CONTROL

CATEGORY	STAGE	LOCATION	643.5000 EACH
1000	ALL	PROJECT	0.15
	TOTAL		0.15

CONCRETE BARRIER & CRASH CUSHIONS TEMPORARY

CATEGORY	STAGE	ROADWAY	STA	STA	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	603.8500 ANCHORING CONCRETE BARRIER TEMPORARY PRECAST LF	614.0905 CRASH CUSHIONS TEMPORARY EACH	** BACK WIDTH	** OBJECT MARKING PATTERN	** CRASH TEST LEVEL	** TRAFFIC DIRECTION	** TRAFFIC LOCATION	** CRASH CUSHION SHIELDS
1000	1B	PORT WASHINGTON RD	107+72 - 108+22		50	50	50	--	--	--	--	--	--	--
			107+72		--	--	--	1	2	OM-3R	TL-3	BIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
			108+22		--	--	--	1	2	OM-3L	TL-3	BIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
	TOTALS				50	50	50	2						

** FOR INFORMATION ONLY

Addendum No. 01
ID 1229-04-71/72/73/77
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September 23, 2022

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\J_Roadway & Drainage\PSE\1229-04-73 South End Good Hope & Brown Deer\SheetsPlan\03 Estimate of Quantities\71_030209_MQ
PLOT DATE : 9/16/2022 10:18:58 AM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ1 PLOT SCALE : 1:1

2

CONCRETE BASES

SB NO	STATION	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH	654.0105 CONCRETE BASES TYPE 5 EACH	654.0110 CONCRETE BASES TYPE 10 EACH	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
CB1	120+39.5	51.4' RT	-	-	-	-	1
SB1	120+26.2	42.8' RT	1	-	-	-	-
SB2	119+66.4	34.2' RT	1	-	-	-	-
SB3	119+60.4	9.6' LT	1	-	-	-	-
SB4	119+64.9	53.0' LT	-	-	-	1	-
SB5	120+10.0	53.3' LT	1	-	-	-	-
SB6	120+45.5	53.3' LT	-	1	-	-	-
SB7	120+45.8	32.5' RT	-	-	-	1	-
LP1	119+42.5	9.7' LT	-	-	1	-	-
LP2	120+98.6	5.4' LT	-	-	1	-	-
		PROJECT TOTAL	4	1	2	2	1

LOOP DETECTOR WIRE SUMMARY

FROM	TO	TURNS #	655.0700 LOOP DETECTOR LEAD IN CABLE LF	655.0800 LOOP DETECTOR WIRE LF
CB1	PB1		10	-
PB1	LOOP 81	2	-	50
LOOP 81	LOOP 81	3	-	135
CB1	PB4		310	-
PB4	LOOP 61	2	-	30
LOOP 61	LOOP 61	4	-	220
CB1	PB9		330	-
PB9	LOOP 21	2	-	30
LOOP 21	LOOP 21	4	-	220
CB1	PB10		160	-
PB10	LOOP 51	2	-	20
LOOP 51	LOOP 51	3	-	165
PB10	LOOP 52	2	-	30
LOOP 52	LOOP 52	3	-	165
PB6	S1	4	195	172
PB5	S2	4	150	172
PB10	S3	4	95	172
PB11	S4	4	40	172
			1290	1753

QUANTITIES AR FOR PORT WASHINGTON RD & W. CLOVERNOOK LANE

FUNDING CATEGORY FOR THIS WORK IS: 1510

2

1

WISCONSIN
KEVIN K. RISCH
E-36446
KENOSHA WIS.
PROFESSIONAL ENGINEER

Aug. 1, 2022

TRAFFIC SIGNAL CONDUIT SUMMARY

FROM	TO	LENGTH	CONDUIT #	652.0225 CONDUIT RIGID NON METALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NON METALLIC SCHEDULE 40 3-INCH LF
CB1	PB1	10	3	-	30
PB1	PB2	55	3	-	165
PB2	PB3	35	2	-	70
PB3	PB4	210	1	210	-
PB3	PB5	40	2	-	80
PB5	PB6	50	2	-	100
PB6	PB7	70	2	-	140
PB7	PB8	65	2	-	130
PB8	PB9	195	1	195	-
PB8	PB10	55	2	-	110
PB10	PB11	45	2	-	90
PB11	PB12	25	2	-	50
PB12	CB1	10	3	-	30
PB1	SB1	15	1	15	-
PB3	SB2	15	1	15	-
PB5	SB3	10	1	10	-
PB6	SB4	10	1	-	10
PB7	SB5	20	1	20	-
PB7	SB6	20	1	20	-
PB11	SB7	15	1	-	15
PB5	LP1	15	1	15	-
PB10	LP2	25	1	25	-
				525	1020

TRAFFIC SIGNAL PULL BOX

PULL BOX NO.	STATION	LOCATION	653.0135 PULL BOXES STEEL 24X36-INCH EACH	653.0140 PULL BOXES STEEL 24X42-INCH EACH
PB1	120+31.8	52.5' RT	-	1
PB2	119+81.8	54.4' RT	-	1
PB3	119+56.0	33.5' RT	-	1
PB4	117+52.1	33.9' RT	1	-
PB5	119+52.2	6.3' LT	-	1
PB6	119+57.5	53.2' LT	-	1
PB7	120+28.4	55.4' LT	-	1
PB8	120+89.2	55.6' LT	-	1
PB9	122+83.2	52.9' LT	1	-
PB10	120+76.1	4.5' LT	-	1
PB11	120+57.7	33.0' RT	-	1
PB12	120+39.8	43.6' RT	-	1
		PROJECT TOTAL	2	10

TRAFFIC SIGNAL LIGHTING WIRE SUMMARY

FROM	TO	655.0320 CABLE TYPE UF 2-10 AWG GROUNDED LF	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG LF
CB1	LP1	155	-
LP1	LUMN	-	230
CB1	LP2	105	-
LP2	LUMN	-	230
		260	460

LOOP DETECTOR CONDUIT SUMMARY

FROM	TO	652.0800 CONDUIT LOOP DETECTOR LF
PB1	LOOP 81	70
PB4	LOOP 61	70
PB9	LOOP 21	70
PB10	LOOP 51	65
PB10	LOOP 52	70
PB6	S1	40
PB5	S2	40
PB10	S3	40
PB11	S4	40
		505

TRAFFIC SIGNAL FACES SUMMARY

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH EACH	658.0174 TRAFFIC SIGNAL FACE 4S 12-INCH EACH	658.0416 PEDESTRIAN SIGNAL FACE 16 - INCH EACH
1	SB2	1	-	-
2	SB7	1	-	-
3	SB7	1	-	-
4	SB6	1	-	-
5	SB4	1	-	-
6	SB4	1	-	-
7	SB2	-	1	-
8	SB3	-	1	-
9	SB1	1	-	-
10	SB6	1	-	-
11	SB5	1	-	-
12	SB6	-	-	1
13	SB5	-	-	1
14	SB1	-	-	1
15	SB2	-	-	1
		9	2	4

SUMMARY OF STATE FURNISHED MATERIALS - FOR INFORMATION ONLY

QUANTITY	UNIT	DESCRIPTIO
2	EACH	POLES TYPE 9
2	EACH	MONOTUBE ARMS 30-FT
1	EACH	ETHERNET SWITCHES
1	EACH	ETHERNET RADIO

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Revised Sheet 1654
September 23, 2022

PROJECT NO: 1229-04-71	HWY: N. PORT WASHINGTON RD.	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 1654	E

(CONTINUED FROM PREVIOUS PAGE)

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EARTHWORK SUMMARY (COTINUED)

STAGE	ROADWAY	STATION TO STATION	205.0100 COMMON EXCAVATION CUT CY	205.0100 COMMON EXCAVATION EBS EXCAVATION CY	* 310.0110 BREAKER RUN TON	SPV.0035.0001 ROADWAY EMBANKMENT CY
STAGE 3						
	STAGE 3A IH 43 - GOOD HOPE	1078+88 - 1095+90	4,218	0	0	2,295
	STAGE 3B IH 43 - GOOD HOPE	1078+88 - 1154+00	33,309	0	0	2,986
	STAGE 3 IH 43 - BROWN DEER	1185+00 - 1282+50	64,758	0	0	9,805
	STAGE 3 BROWN DEER RAMP C	1232+39 - 1249+73	13,099	0	0	25,087
	STAGE 3 BROWN DEER RAMP C-ES	300+00 - 304+46	2,071	0	0	13,677
	STAGE 3 BROWN DEER RAMP D	1252+87 - 1264+94	7,137	0	0	23,989
	STAGE 3 BROWN DEER RAMP D-SW	400+00 - 405+00	274	0	0	2,176
	STAGE 3 WB BROWN DEER ROAD - WEST	605+15 - 616+67	7,121	0	0	2,292
	STAGE 3 WB BROWN DEER ROAD - EAST	618+29 - 628+80	12,458	0	0	841
	STAGE 3 PHEASANT - SOUTH	101+50 - 103+50	407	0	0	211
	STAGE 3 PHEASANT - NORTH	12+00 - 16+50	844	0	0	31
	STAGE 3 SUBTOTAL		145,696	0	0	83,390
STAGE 4						
	STAGE 4A/4B IH 43	1078+88 - 1185+00	75,159	0	0	7,688
	STAGE 4A/4B RAMP GHC	1126+95 - 1144+50	28,814	0	0	2,686
	STAGE 4A/4B RAMP GHD	1146+50 - 1159+07	12,105	0	0	555
	STAGE 4A JEAN NICOLET ROAD	41+54 - 62+12	12,177	0	0	1,128
	STAGE 4B JEAN NICOLET ROAD	36+56 - 46+00	4,595	0	0	275 (1)
	STAGE 4B ACACIA ROAD	10+75 - 11+45	95	0	0	0
	STAGE 4B APPLETREE ROAD (WEST)	11+10 - 11+44	69	0	0	0
	STAGE 4B DAPHNE ROAD (WEST)	10+95 - 11+39	58	0	0	1
	STAGE 4 SUBTOTAL		133,072	0	0	12,333 (1)
UNDISTRIBUTED			0	5,000	9,000	0
GRAND TOTAL			**664,755**	**5,000**	**9,000**	**197,519**
		TOTAL COMMON EXC	**669,755**			(1)

NOTES:

(1) ALL EXISTING PAVEMENT SHALL BE REMOVED PER MODIFIED SPEC 205.3.2.5. CUT VOLUME INCLUDES CONCRETE AND ASPHALTIC SURFACE MATERIAL.

(2) EBS EXCAVATION TO BE BACKFILLED WITH BREAKER RUN. ALL EBS MATERIAL IS ASSUMED TO BE WASTED OFFSITE.

(3) ROADWAY EMBANKMENT = UNEXPANDED FILL

(4) ALL EXISTING PAVEMENTS SHALL BE REMOVED PER MODIFIED SPEC 205.3.2.5. EMBANKMENT VOLUME IS BASED ON THE EXISTING SURFACE AND DOES NOT ACCOUNT FOR REMOVAL OF EXISTING CONCRETE AND ASPHALTIC PAVEMENTS.

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1686
September 23, 2022

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\J_Roadway & Drainage\PSE\1229-04-73 South End Good Hope & Brown Deer\SheetsPlan\03 Estimate of Quantities\73_030201_MQ
PLOT DATE : 9/21/2022 8:04:15 PM PLOT BY : CECELIA TICHELAAR PLOT NAME : PLOT SCALE : 1:1

STORM SEWER PIPES

LOCATION	FROM	TO	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT	CAT 1000 522.0518 CULVERT PIPE REINFORCED CONCRETE CLASS V 18-INCH LF	CAT 1000 608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH LF	CAT 1000 608.0315 15-INCH LF	CAT 1000 608.0318 18-INCH LF	CAT 1000 608.0324 24-INCH LF	CAT 1000 608.0330 30-INCH LF	CAT 1000 608.0336 36-INCH LF	CAT 1000 608.0342 42-INCH LF	CAT 1030 608.0342 42-INCH LF	CAT 1000 608.0348 48-INCH LF	CAT 1000 608.0354 54-INCH LF	CAT 1030 608.0384 84-INCH LF
JN	245D-S4A	245J-S4A	668.22	667.38	0.0151	--	--	--	--	56	--	--	--	--	--	--	--
JN	245J-S4A	248J-S4A	667.38	665.69	0.0088	--	--	--	--	192	--	--	--	--	--	--	--
JN	246J-S4A	249J-S4A	664.86	663.47	0.0070	--	--	--	--	--	200	--	--	--	--	--	--
JN	248J-S4A	246J-S4A	665.69	665.36	0.0100	--	--	--	--	33	--	--	--	--	--	--	--
JN	249J-S4A	253J-S4A	663.47	662.43	0.0048	--	--	--	--	--	215	--	--	--	--	--	--
JN	251J-S4A	249J-S4A	664.88	664.72	0.0048	--	--	33	--	--	--	--	--	--	--	--	--
JN	254J-S4A	253J-S4A	663.84	663.68	0.0046	--	--	34	--	--	--	--	--	--	--	--	--
JN	255J-S4A	253J-S4A	661.21	660.33	0.0047	--	--	--	--	189	--	--	--	--	--	--	--
~~JN~~	~~256A-S4A~~	~~256J-S4A~~	~~662.43~~	~~662.34~~	~~0.0050~~	--	--	--	--	--	--	--	--	--	--	--	--
JN	256J-S4A	255J-S4A	661.34	661.21	0.0050	--	--	--	--	25	--	--	--	--	--	--	--
JN	257J-S4A	256J-S4A	661.46	661.34	0.0050	--	--	--	--	25	--	--	--	--	--	--	--
JN	258A-S4A	258J-S4A	662.17	662.00	0.0050	--	--	--	--	--	--	--	--	--	--	--	--
43-RL	258B-S4A	258A-S4A	662.52	662.17	0.0050	--	--	--	--	--	--	--	--	--	--	--	--
JN	258J-S4A	257J-S4A	662.00	661.46	0.0050	--	--	--	--	108	--	--	--	--	--	--	--
JN	259J-S4A	260J-S4A	662.88	662.75	0.0052	--	--	25	--	--	--	--	--	--	--	--	--
JN	260J-S4A	256J-S4A	662.50	662.34	0.0048	--	--	--	33	--	--	--	--	--	--	--	--
JN	261J-S4A	260J-S4A	662.88	662.75	0.0052	--	--	25	--	--	--	--	--	--	--	--	--
JN	262J-S4A	258J-S4A	664.97	662.00	0.0216	--	--	--	--	137	--	--	--	--	--	--	--
43-RL	2313A-S2A	2313B-S2A	705.26	705.15	0.0050	--	--	--	--	25	--	--	--	--	--	--	--
43-RL	2313A-S2A	2308-S4A	705.26	695.14	0.0440	--	--	--	--	229	--	--	--	--	--	--	--
43-RL	RS_50	258B-S4A	671.00	670.60	0.0150	--	--	--	27	--	--	--	--	--	--	--	--
JN	264J-S4A	262J-S4A	665.88	665.72	0.0048	--	--	33	--	--	--	--	--	--	--	--	--
JN	265J-S4A	262J-S4A	671.57	664.97	0.0322	--	--	--	--	205	--	--	--	--	--	--	--
JN	267J-S4A	265J-S4A	672.48	672.32	0.0048	--	--	33	--	--	--	--	--	--	--	--	--
JN	268J-S4A	265J-S4A	684.80	671.57	0.0415	--	--	--	--	319	--	--	--	--	--	--	--
JN	270J-S4A	268J-S4A	685.71	685.55	0.0049	--	--	32	--	--	--	--	--	--	--	--	--
43-RL	2199-S4A	2373-S4A	698.31	697.94	0.0050	--	--	--	73	--	--	--	--	--	--	--	--
43-RL	2204-S4A	2372-S4A	696.68	696.36	0.0050	--	--	--	66	--	--	--	--	--	--	--	--
43-RL	2211-S4A	2371-S4A	692.01	691.68	0.0050	--	--	--	66	--	--	--	--	--	--	--	--
43-RL	2216-S4A	2369-S4A	686.37	685.99	0.0058	--	--	--	66	--	--	--	--	--	--	--	--
43-RL	2369-S4A	2218-S2A	685.99	685.93	0.0058	--	--	--	10	--	--	--	--	--	--	--	--
43-RL	2371-S4A	2213-S2A	691.68	691.63	0.0050	--	--	--	10	--	--	--	--	--	--	--	--
43-RL	2372-S4A	2206-S2A	696.36	696.30	0.0050	--	--	--	10	--	--	--	--	--	--	--	--
43-RL	2373-S4A	2201-S2A	697.94	697.89	0.0050	--	--	--	10	--	--	--	--	--	--	--	--
43-RL	2001-S4A	RS_13	659.96	659.79	0.0030	--	--	--	--	--	--	--	--	--	--	--	--
43-RL	2011-S4A	RS_6	647.12	646.85	0.0050	--	--	--	53	--	--	--	--	--	--	--	--
43-RL	2022-S4A	2023-S4A	648.70	648.62	0.0030	--	--	--	--	25	--	--	--	--	--	--	--
43-RL	2023-S4A	RS_20	684.60	648.36	0.0050	--	--	--	--	48	--	--	--	--	--	--	--
43-RL	2031-S4A	RS_8	647.38	647.13	0.0050	--	--	--	50	--	--	--	--	--	--	--	--
43-RL	2035-S4A	RS_14	649.58	649.42	0.0034	--	--	--	47	--	--	--	--	--	--	--	--
43-RL	2040-S4A	RS_11	650.60	650.37	0.0050	--	--	--	48	--	--	--	--	--	--	--	--
43-RL	2045-S4A	2045A-S3B	655.00	654.80	0.0050	--	--	--	40	--	--	--	--	--	--	--	--
43-RL	2050-S4A	RS_15	660.99	660.75	0.0050	--	--	--	47	--	--	--	--	--	--	--	--
43-RL	2055-S4A	RS_16	667.53	667.30	0.0050	--	--	--	47	--	--	--	--	--	--	--	--
43-RL	2060-S4A	RS_17	673.74	673.50	0.0050	--	--	--	47	--	--	--	--	--	--	--	--
43-RL	2065-S4A	RS_21	675.05	674.81	0.0050	--	--	--	47	--	--	--	--	--	--	--	--
43-RL	2070-S4A	2071-S4A	674.84	674.74	0.0035	--	--	--	--	--	--	--	--	--	--	--	--
FA	2071-S4A	2072-S4A	674.74	674.63	0.0035	--	--	--	--	--	--	--	--	--	--	--	--
43-RL	2072-S4A	RS_18	674.63	674.47	0.0035	--	--	--	45	--	--	--	--	--	--	--	--
43-RL	2084-S4A	RS_19	676.10	675.87	0.0052	--	--	--	45	--	--	--	--	--	--	--	--
43-RL	2231-S4A	2367-S4A	675.55	675.26	0.0050	--	--	--	--	--	--	58	--	--	--	--	--
43-RL	2237A-S4A	2240-S4A	674.13	673.84	0.0050	--	--	--	--	58	--	--	--	--	--	--	--

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1739
September 23, 2022

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1740
September 23, 2022

STORM SEWER PIPES

LOCATION	FROM	TO	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT	CAT 1000 608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH LF	15-INCH LF	18-INCH LF	24-INCH LF	30-INCH LF	36-INCH LF	42-INCH LF	48-INCH LF	54-INCH LF	72-INCH LF	CAT 1000 608.0512 STORM SEWER PIPE REINFORCED CONCRETE CLASS V 12-INCH LF	18-INCH LF	24-INCH LF	36-INCH LF	CAT 1000 608.6008 STORM SEWER PIPE COMPOSITE 8-INCH LF	COMMENTS
JN	245D-S4A	245J-S4A	668.22	667.38	0.0151	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	245J-S4A	248J-S4A	667.38	665.69	0.0088	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	246J-S4A	249J-S4A	664.86	663.47	0.0070	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	248J-S4A	246J-S4A	665.69	665.36	0.0100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	249J-S4A	253J-S4A	663.47	662.43	0.0048	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	251J-S4A	249J-S4A	664.88	664.72	0.0048	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	254J-S4A	253J-S4A	663.84	663.68	0.0046	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	255J-S4A	253J-S4A	661.21 (1)	660.33	0.0047	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
~~JN~~	~~256A-S4A~~	~~256J-S4A~~	~~662.43~~	~~662.34~~	~~0.0050~~	--	--	~~0~~	--	--	--	--	--	--	--	--	--	--	--	--	
JN	256J-S4A	255J-S4A	661.34	661.21	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	257J-S4A	256J-S4A	661.46	661.34	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	258A-S4A	258J-S4A	662.17	662.00	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	32	--	--	
43-RL	258B-S4A	258A-S4A	662.52	662.17	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	71	--	--	
JN	258J-S4A	257J-S4A	662.00	661.46	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	259J-S4A	260J-S4A	662.88	662.75	0.0052	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	260J-S4A	256J-S4A	662.50	662.34	0.0048	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	261J-S4A	260J-S4A	662.88	662.75	0.0052	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	262J-S4A	258J-S4A	664.97	662.00	0.0216	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2313A-S2A	2313B-S2A	705.26	705.15	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2313A-S2A	2308-S4A	705.26	695.14	0.0440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	RS_50	258B-S4A	671.00	670.60	0.0150	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	264J-S4A	262J-S4A	665.88	665.72	0.0048	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	265J-S4A	262J-S4A	671.57	664.97	0.0322	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	267J-S4A	265J-S4A	672.48	672.32	0.0048	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	268J-S4A	265J-S4A	684.80	671.57	0.0415	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JN	270J-S4A	268J-S4A	685.71	685.55	0.0049	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2199-S4A	2373-S4A	698.31	697.94	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2204-S4A	2372-S4A	696.68	696.36	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2211-S4A	2371-S4A	692.01	691.68	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2216-S4A	2369-S4A	686.37	685.99	0.0058	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2369-S4A	2218-S2A	685.99	685.93	0.0058	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2371-S4A	2213-S2A	691.68	691.63	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2372-S4A	2206-S2A	696.36	696.30	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2373-S4A	2201-S2A	697.94	697.89	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2001-S4A	RS_13	659.96	659.79	0.0030	--	--	57	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2011-S4A	RS_6	647.12	646.85	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2022-S4A	2023-S4A	648.70	648.62	0.0030	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2023-S4A	RS_20	684.60	648.36	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2031-S4A	RS_8	647.38	647.13	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2035-S4A	RS_14	649.58	649.42	0.0034	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2040-S4A	RS_11	650.60	650.37	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2045-S4A	2045A-S3B	655.00	654.80	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2050-S4A	RS_15	660.99	660.75	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2055-S4A	RS_16	667.53	667.30	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2060-S4A	RS_17	673.74	673.50	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2065-S4A	RS_21	675.05	674.81	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2070-S4A	2071-S4A	674.84	674.74	0.0035	--	--	30	--	--	--	--	--	--	--	--	--	--	--	--	
FA	2071-S4A	2072-S4A	674.74	674.63	0.0035	--	--	30	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2072-S4A	RS_18	674.63	674.47	0.0035	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2084-S4A	RS_19	676.10	675.87	0.0052	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2231-S4A	2367-S4A	675.55	675.26	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
43-RL	2237A-S4A	2240-S4A	674.13	673.84	0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

STORM SEWER PIPES

						CAT 1000 608.0412	CAT 1000 608.0415	CAT 1000 608.0418	CAT 1000 608.0424	CAT 1000 608.0430	CAT 1000 608.0436	CAT 1000 608.0442	CAT 1000 608.0448	CAT 1000 608.0454	CAT 1000 608.0472	CAT 1000 608.0512	CAT 1000 608.0518	CAT 1000 608.0524	CAT 1000 608.0536	CAT 1000 608.6008	
						STORM SEWER PIPE REINFORCED CONCRETE CLASS IV										STORM SEWER PIPE REINFORCED CONCRETE CLASS V				STORM SEWER PIPE COMPOSITE	
			INLET	DISCHARGE	SLOPE	12-INCH	15-INCH	18-INCH	24-INCH	30-INCH	36-INCH	42-INCH	48-INCH	54-INCH	72-INCH	12-INCH	18-INCH	24-INCH	36-INCH	8-INCH	
LOCATION	FROM	TO	ELEVATION	ELEVATION	FT/FT	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	COMMENTS
43-RL	2367-S4A	2233-S2A	675.26	675.21	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
43-RL	2240-S4A	2244-S2A	673.84	673.79	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
43-RL	2236-S4A	2237A-S4A	674.75	674.63	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
43-RL	2238-S4A	2237A-S4A	674.75	674.63	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
43-RL	2231A-S4A	2231-S4A	676.18	676.05	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
43-RL	2368-S4A	2228-S2A	677.03	676.98	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
43-RL	2226-S4A	2368-S4A	677.32	677.03	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
43-RL	2370-S4A	2223-S2A	681.70	681.66	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
43-RL	2221-S4A	2370-S4A	681.99	681.70	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
43-RL	2235C-S2A	2198A-S4A	668.70	668.31	0.0040	--	–	--	1	--	–	--	–	--	98	–	--	–	--	–	
43-RL	2100-S4A	2101A-S3B	677.92	677.63	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
				STAGE 4A SUBTOTAL		0	0	372	66	0	0	0	0	0	98	0	0	103	0	0	
1229-04-73 STAGE 4B																					
JN	240J-S4B	242J-S4A	673.41	673.25	0.0050	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	243J-S4B	245J-S4A	668.29	668.13	0.0048	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	225J-S4B	227J-S4B	655.60	655.44	0.0049	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	227J-S4B	224J-S2A	653.88	649.67	0.0169	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	228J-S4B	230J-S4B	660.95	660.79	0.0049	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	230J-S4B	227J-S4B	658.50	653.88	0.0209	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	231J-S4B	233J-S4B	666.74	666.58	0.0049	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	233J-S4B	230J-S4B	664.68	658.50	0.0211	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	234J-S4B	236J-S4B	671.01	670.85	0.0049	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	236J-S4B	233J-S4B	669.51	664.68	0.0259	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	237J-S4B	239J-S4B	674.78	674.68	0.0030	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
JN	239J-S4B	236J-S4B	674.00	669.51	0.0217	--	–	--	--	–	--	–	--	–	--	–	--	–	--	–	
				STAGE 4B SUBTOTAL		0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
				1229-04-73 STAGE 4 TOTAL		0	0	372	66	0	0	0	0	0	98	0	0	103	0	0	
				1229-04-73 TOTAL		273	185	3575	988	655	806	293	1192	900	189	28	13	103	86	7	

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1742
September 23, 2022

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1771
September 23, 2022

STORM SEWER STRUCTURES

LOCATION	STRUCTURE	STATION	OFFSET	RIM ELEVATION	INVERT ELEVATION	DEPTH FT	MANHOLE COVERS: TYPE J EACH	MANHOLE COVERS: TYPE J-SPECIAL EACH	MANHOLE COVERS: 10'x10' FT BOX EACH	MANHOLE COVERS: 10'x10' FT BOX EACH	MANHOLE COVERS: 10'x10' FT OUTLET CONTROL MH EACH	INLET COVERS: TYPE BW EACH	INLET COVERS: TYPE C EACH	INLET COVERS: TYPE F EACH	INLET COVERS: TYPE H EACH	INLET COVERS: TYPE MS EACH	INLET COVERS: TYPE W EACH	INLET COVERS: TYPE Z EACH	CATCH BASINS: 4-FT DIAMETER EACH	CATCH BASINS: 5-FT DIAMETER EACH	CATCH BASINS: 6-FT DIAMETER EACH
							CAT 1000 611.0530	CAT 1000 611.0535	CAT 1000 SPV.0060.0208	CAT 1030 SPV.0060.0208	CAT 1030 SPV.0060.0701	CAT 1000 611.0610	CAT 1000 611.0612	CAT 1000 611.0615	CAT 1000 611.0624	CAT 1000 611.0642	CAT 1000 611.0657	CAT 1000 611.0666	CAT 1000 611.1004	CAT 1000 611.1005	CAT 1000 611.1006
43-RL	2216-S4A	1168+03.15	71.00' LT	692.39	686.37	4.89	--	--	--	--	--	1	–	--	–	--	--	–	--	–	–
43-RL	2369-S4A	1168+03.16	5.00' LT	692.71	685.93	5.66	--	--	--	--	--	1	–	--	–	--	--	–	--	–	–
43-RL	2371-S4A	1165+03.16	5.00' LT	697.84	691.68	5.04	--	--	--	--	--	1	–	--	–	--	--	–	--	–	–
43-RL	2372-S4A	1161+97.84	4.99' LT	701.80 (1)	696.36	4.32	--	--	--	--	--	1	–	--	–	--	--	–	--	–	–
~~JN-GH~~	~~256A-S4A~~	~~52+28.96~~	~~33.51' LT~~	~~666.11~~	~~662.43~~	~~3.89~~	–	–	–	–	–	–	–	–	–	~~0~~	–	–	–	–	–
43-RL	2373-S4A	1159+02.34	5.00' LT	704.08	697.94	5.02	--	--	--	--	--	1	–	--	–	--	--	–	--	–	–
JN-GH	242J-S4A	41+05.83	16.00' RT	678.07	671.94	5.04	--	--	--	--	--	1	–	--	–	--	--	–	--	–	–
JN-GH	245D-S4A	43+52.34	16.00' RT	674.32	668.22	5.02	--	--	--	--	--	1	–	--	–	--	--	–	--	–	–
JN-GH	245J-S4A	44+07.89	16.50' RT	673.43	667.38	5.30	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	246J-S4A	45+99.64	16.50' LT	670.77	664.86	5.20	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	248J-S4A	45+99.59	16.50' RT	670.77	665.69	4.33	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	249J-S4A	47+99.35	16.50' LT	669.52	663.47	5.34	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	251J-S4A	47+99.74	16.50' RT	669.52	664.88	3.83	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	253J-S4A	50+15.23	16.63' LT	668.45	657.83	9.95	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	254J-S4A	50+24.69	16.50' RT	668.41	663.84	3.76	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	255J-S4A	52+03.96	16.50' LT	667.56	661.21	5.60	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	256J-S4A	52+28.96	16.50' LT	667.53	661.34	5.44	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	257J-S4A	52+53.96	16.50' LT	667.56	661.46	5.35	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	258A-S4A	53+61.86	16.50' RT	668.35	662.17	5.39	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	258J-S4A	53+62.19	15.92' LT	668.33	662.00	5.34	--	--	--	--	--	--	–	--	–	--	--	–	--	–	–
JN-GH	259J-S4A	52+03.96	16.50' RT	667.56	662.88	3.87	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	260J-S4A	52+28.96	16.50' RT	667.53	662.50	4.24	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	261J-S4A	52+53.96	16.50' RT	667.56	662.88	3.87	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	262J-S4A	54+99.59	16.50' LT	670.89	664.97	5.17	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	264J-S4A	54+99.59	16.50' RT	670.89	665.88	4.20	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	265J-S4A	57+04.87	16.57' LT	677.92	671.57	5.60	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	267J-S4A	57+05.26	16.52' RT	677.94	672.48	4.65	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	268J-S4A	60+24.44	16.50' LT	692.17	684.80	6.62	--	--	--	--	--	--	–	--	1	--	(1)	–	--	–	–
JN-GH	270J-S4A	60+24.50	16.00' RT	692.21	685.71	5.35	--	--	--	--	--	1	–	--	–	--	--	–	--	–	–
					STAGE 4A SUBTOTAL		0	0	0	0	0	72	0	0	21	4	0	0	0	0	0
1229-04-73 STAGE 4B																					
JN-GH	225J-S4B	27+99.91	16.50' LT	660.36	655.60	3.43	--	--	--	--	--	1	–	--	–	--	--	–	1	–	–
JN-GH	227J-S4B	27+99.93	16.00' RT	660.40	653.88	5.19	--	--	--	--	--	1	–	--	–	--	--	–	--	1	–
JN-GH	228J-S4B	30+19.99	16.50' LT	665.25	660.95	3.30	--	--	--	--	--	--	–	--	1	--	--	–	1	–	–
JN-GH	230J-S4B	30+20.62	16.00' RT	665.30	658.50	5.47	--	--	--	--	--	1	–	--	–	--	--	–	--	1	–
JN-GH	231J-S4B	33+14.05	16.50' LT	671.82	666.74	4.08	--	--	--	--	--	--	–	--	1	--	--	–	1	–	–
JN-GH	233J-S4B	33+14.02	16.00' RT	671.86	664.68	6.10	--	--	--	--	--	1	–	--	–	--	--	–	--	1	–
JN-GH	234J-S4B	34+99.95	16.50' LT	675.97	671.01	3.96	--	--	--	--	--	--	–	--	1	--	--	–	1	–	–
JN-GH	236J-S4B	34+99.90	16.00' RT	676.01	669.51	5.17	--	--	--	--	--	1	–	--	–	--	--	–	--	1	–
JN-GH	237J-S4B	37+06.48	16.50' LT	679.26	674.78	3.48	--	--	--	--	--	--	–	--	1	--	--	–	1	–	–
JN-GH	239J-S4B	37+06.52	15.99' RT	679.30	674.00	3.96	--	--	--	--	--	1	–	--	–	--	--	–	--	1	–
JN-GH	240J-S4B	41+06.91	16.51' LT	678.01	673.41	3.79	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
JN-GH	243J-S4B	44+07.79	16.50' LT	673.43	668.29	4.33	--	--	--	--	--	--	–	--	1	--	--	–	--	–	–
					STAGE 4B SUBTOTAL		0	0	0	0	0	6	0	0	6	0	0	0	5	5	0
					1229-04-73 STAGE 4 TOTAL		0	0	0	0	0	78	0	0	27	4	0	0	5	5	0
																(1)	(1)				
					1229-04-73 TOTAL		21	44	1	8	6	461	1	7	120	89	27	7	16	5	3

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET 1771	E

FILE NAME : C:\CADDLIB\PW\HNTB_ALMUELLER\GREATLAKES\D0229151\1229-04-73 - BLANK SHEET.DWG
LAYOUT NAME - _001
PLOT DATE : 3/22/2022 9:57 AM PLOT BY : ALEX MUELLER PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

STORM SEWER STRUCTURES

LOCATION	STRUCTURE	STATION	OFFSET	RIM ELEVATION	INVERT ELEVATION	DEPTH FT	CAT 1000 611.2004 MANHOLES 4-FT DIAMETER EACH	CAT 1000 611.2005 MANHOLES 5-FT DIAMETER EACH	CAT 1000 611.2006 MANHOLES 6-FT DIAMETER EACH	CAT 1000 611.2007 MANHOLES 7-FT DIAMETER EACH	CAT 1000 611.2008 MANHOLES 8-FT DIAMETER EACH	CAT 1000 611.3004 INLETS 4-FT DIAMETER EACH	CAT 1000 611.3901 INLETS MEDIAN 1 GRATE EACH	CAT 1000 611.3902 INLETS MEDIAN 2 GRATE EACH	COMMENTS
43-RL	2216-S4A	1168+03.15	71.00' LT	692.39	686.37	4.89	–	--	--	–	–	1	–	–	
43-RL	2369-S4A	1168+03.16	5.00' LT	692.71	685.93	5.66	–	--	--	–	–	1	–	–	
43-RL	2371-S4A	1165+03.16	5.00' LT	697.84	691.68	5.04	–	--	--	–	–	1	–	–	
43-RL	2372-S4A	1161+97.84	4.99' LT	701.80 (1)	696.36	4.32	–	--	--	–	–	1	–	–	
~~JN-GH~~	~~256A-S4A~~	~~52+28.96~~	~~33.51' LT~~	~~666.11~~	~~662.43~~	~~3.89~~	–	–	–	–	–	–	–	~~0~~	
43-RL	2373-S4A	1159+02.34	5.00' LT	704.08	697.94	5.02	–	--	--	–	–	1	–	–	
JN-GH	242J-S4A	41+05.83	16.00' RT	678.07	671.94	5.04	–	1	--	–	–	–	–	–	
JN-GH	245D-S4A	43+52.34	16.00' RT	674.32	668.22	5.02	–	1	--	–	–	–	–	–	
JN-GH	245J-S4A	44+07.89	16.50' RT	673.43	667.38	5.30	–	1	--	–	–	–	–	–	
JN-GH	246J-S4A	45+99.64	16.50' LT	670.77	664.86	5.20	–	--	1	–	–	–	–	–	
JN-GH	248J-S4A	45+99.59	16.50' RT	670.77	665.69	4.33	–	1	--	–	–	–	–	–	
JN-GH	249J-S4A	47+99.35	16.50' LT	669.52	663.47	5.34	–	1	--	–	–	–	–	–	
JN-GH	251J-S4A	47+99.74	16.50' RT	669.52	664.88	3.83	–	--	--	–	–	1	–	–	
JN-GH	253J-S4A	50+15.23	16.63' LT	668.45	657.83	9.95	–	--	--	–	1	–	–	–	
JN-GH	254J-S4A	50+24.69	16.50' RT	668.41	663.84	3.76	–	--	--	–	–	1	–	–	
JN-GH	255J-S4A	52+03.96	16.50' LT	667.56	661.21	5.60	–	--	--	–	–	1	–	–	
JN-GH	256J-S4A	52+28.96	16.50' LT	667.53	661.34	5.44	–	--	--	–	–	1	–	–	
JN-GH	257J-S4A	52+53.96	16.50' LT	667.56	661.46	5.35	–	--	--	–	–	1	–	–	
JN-GH	258A-S4A	53+61.86	16.50' RT	668.35	662.17	5.39	–	--	--	–	–	1	–	–	
JN-GH	258J-S4A	53+62.19	15.92' LT	668.33	662.00	5.34	–	--	1	–	–	–	–	–	
JN-GH	259J-S4A	52+03.96	16.50' RT	667.56	662.88	3.87	–	--	--	–	–	1	–	–	
JN-GH	260J-S4A	52+28.96	16.50' RT	667.53	662.50	4.24	–	--	--	–	–	1	–	–	
JN-GH	261J-S4A	52+53.96	16.50' RT	667.56	662.88	3.87	–	--	--	–	–	1	–	–	
JN-GH	262J-S4A	54+99.59	16.50' LT	670.89	664.97	5.17	–	--	--	–	–	1	–	–	
JN-GH	264J-S4A	54+99.59	16.50' RT	670.89	665.88	4.20	–	--	--	–	–	1	–	–	
JN-GH	265J-S4A	57+04.87	16.57' LT	677.92	671.57	5.60	–	--	--	–	–	1	–	–	
JN-GH	267J-S4A	57+05.26	16.52' RT	677.94	672.48	4.65	–	--	--	–	–	1	–	–	
JN-GH	268J-S4A	60+24.44	16.50' LT	692.17	684.80	6.62	–	--	--	–	–	1	–	– (1)	
JN-GH	270J-S4A	60+24.50	16.00' RT	692.21	685.71	5.35	–	--	--	–	–	1	–	–	
						STAGE 4A SUBTOTAL	0	10	3	1	1	79	0	2	
1229-04-73 STAGE 4B															
JN-GH	225J-S4B	27+99.91	16.50' LT	660.36	655.60	3.43	–	--	--	–	–	–	–	–	
JN-GH	227J-S4B	27+99.93	16.00' RT	660.40	653.88	5.19	–	--	--	–	–	–	–	–	
JN-GH	228J-S4B	30+19.99	16.50' LT	665.25	660.95	3.30	–	--	--	–	–	–	–	–	
JN-GH	230J-S4B	30+20.62	16.00' RT	665.30	658.50	5.47	–	--	--	–	–	–	–	–	
JN-GH	231J-S4B	33+14.05	16.50' LT	671.82	666.74	4.08	–	--	--	–	–	–	–	–	
JN-GH	233J-S4B	33+14.02	16.00' RT	671.86	664.68	6.10	–	--	--	–	–	–	–	–	
JN-GH	234J-S4B	34+99.95	16.50' LT	675.97	671.01	3.96	–	--	--	–	–	–	–	–	
JN-GH	236J-S4B	34+99.90	16.00' RT	676.01	669.51	5.17	–	--	--	–	–	–	–	–	
JN-GH	237J-S4B	37+06.48	16.50' LT	679.26	674.78	3.48	–	--	--	–	–	–	–	–	
JN-GH	239J-S4B	37+06.52	15.99' RT	679.30	674.00	3.96	–	--	--	–	–	–	–	–	
JN-GH	240J-S4B	41+06.91	16.51' LT	678.01	673.41	3.79	–	--	--	–	–	1	–	–	
JN-GH	243J-S4B	44+07.79	16.50' LT	673.43	668.29	4.33	–	--	--	–	–	1	–	–	
						STAGE 4B SUBTOTAL	0	0	0	0	0	2	0	0	
						1229-04-73 STAGE 4 TOTAL	0	10	3	1	1	81	0	2 (1)	
						1229-04-73 TOTAL	8	89	52	26	34	444	9	40	

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1772
September 23, 2022

FENCING ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	616.0206 FENCE CHAIN LINK 6-FT LF	616.0329.0001 GATES CHAIN LINK 4-FT EACH	616.0329 GATES CHAIN LINK 8-FT EACH	616.0329 GATES CHAIN LINK 12-FT EACH	616.0700.S FENCE SAFETY LF	SPV.0090.0004 SALVAGE AND REINSTALL FENCE LF	SPV.0090.0008 TEMPORARY FENCE CHAIN LINK 4-FT LF	SPV.0090.0300 FENCE CHAIN LINK POLYMER-COATED 4-FT ROAD BARRIER LF
		MAINLINE												
1000	2	IH 43 NB	1095+90	-	1097+03		113	--	--	--	--	--	--	--
			1109+50	-	1124+69		1,555	--	--	1	--	--	--	1 --
		RAMPS												
1000	2	RAMP A	1145GHA+97	-	1152GHA+58		685	--	--	--	--	--	--	--
			1153GHA+50	-	1155GHA+43		199	--	--	--	--	--	--	--
1000	2	RAMP B	1124GHB+70	-	131GHB+28		657	--	--	--	--	--	--	--
			1132GHB+03	-	1139GHB+38		--	--	--	--	--	--	785	-- 1
			1139GHB+25	-	1144GHB+37		648	--	--	--	--	--	--	--
		LOCAL ROADS												
1000	2	GOOD HOPE ROAD	29GHE+50	-	30GHE+15		--	--	--	--	--	65	--	10
		STAGE 2 SUBTOTAL					3,856	0	0	1	0	65	785	10
		MAINLINE												
1000	3	IH 43 NB	1086+13	-	1095+90		963	--	--	--	--	--	--	--
		STAGE 3 SUBTOTAL					963	0	0	0	0	0	0	0
		MAINLINE												
1000	4	IH 43 SB	1079+97	-	1080+24		169	--	--	1	--	--	--	--
			1080+24	-	1088+79		856	--	--	--	--	--	--	--
			1088+99	-	1089+17		18	--	--	--	--	--	--	--
			1111+61	-	1111+61		5	--	--	--	--	--	--	--
			1168+23	-	1185+00		1,711	--	--	--	--	--	--	--
		RAMPS												
1000	4	RAMP C	1132GHC+64	-	1144GHC+55		1,178	--	--	--	--	--	--	--
1000	4	RAMP D	1146GHD+20	-	1168GHD+23		2,242 1	--	--	--	--	--	--	--
		STAGE 4 SUBTOTAL					6,180	0	0	1	0	0	0	0
		MAINLINE												
1000		IH 43 NB/SB	1185+00	-	1215+91	LT	3,099	--	--	--	--	--	--	--
			1185+00	-	1282+50	RT	--	--	--	--	10,000	--	--	--
			1215+30	-	1215+46	RT	16	1	--	--	--	--	--	--
			1216+58	-	1216+71	RT	13	1	--	--	--	--	--	--
			1216+99	-	1235+57	LT	1,860	--	--	1	--	--	--	--
			1239+61	-	1249+21	RT	1,065	--	1	--	--	--	--	--
			1239+98	-	1251+89	LT	1,453	--	--	1	--	--	--	--
			1250+95	-	1260+91	RT	1,179	--	--	1	--	--	--	--
			1254+60	-	1282+50	LT	2,851	--	--	--	--	--	--	--
		BROWN DEER SEGMENT SUBTOTAL					11,536	2	1	3	10,000	0	0	0
		UNDISTRIBUTED					0	0	0	0	50,000 1	0	0	0
		TOTALS					**22,536** 1	**2**	**1**	**5**	**60,000**	**65**	**785**	**10**

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1805
September 23, 2022

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\J_Roadway & Drainage\PSE\1229-04-73 South End Good Hope & Brown Deer\SheetsPlan\03 Estimate of Quantities\73_030206_MQ

PLOT DATE : 9/16/2022 9:35:45 AM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ16 PLOT SCALE : 1:1

3

MAINTENANCE AND REPAIR OF HAUL ROADS (1229-04-73)

CATEGORY	STAGE	LOCATION	618.0100.0003 EACH
1000	ALL	PROJECT 1229-04-73	1
		TOTAL	**1**

SECTION CORNER MONUMENTS SPECIAL

CATEGORY	ROADWAY	LOCATION	OFFSET	SPV.0060.0125 EACH
1000	IH 43	1171+88	105' RT	1
		1198+32	100' RT	1
		124981	522.2' RT	1
	GOOD HOPE ROAD	27GHE+49	18.6' LT	1
	BROWN DEER ROAD	623BDE+47	29.9' LT	1
		TOTAL		**5**

MOBILIZATION

CATEGORY	STAGE	LOCATION	619.1000 EACH
1000	ALL	PROJECT 1229-04-73	0.70
		TOTAL	**0.70**

SALVAGE AND REINSTALL RAMP GATE

CATEGORY	STAGE	ROADWAY	STATION	OFFSET	SPV.0060.0130 SALVAGE AND REINSTALL RAMP GATE 24-FT EACH	SPV.0060.0131 SALVAGE AND REINSTALL RAMP GATE 28-FT EACH	SPV.0060.0132 SALVAGE AND REINSTALL RAMP GATE 32-FT EACH	SPV.0060.0133 SALVAGE AND REINSTALL RAMP GATE 37-FT EACH
		RAMPS						
1000	1	GOOD HOPE RAMPS	-	-	1	1	4	2
		LOCAL ROADS						
1000	1	BROWN DEER ROAD	615BD+10	LT	--	--	1	--
	STAGE 1 SUBTOTAL				1	1	5	2
		LOCAL ROADS						
1000	2	BROWN DEER ROAD	613BD+26	RT	--	--	1	--
			620BD+30	RT	--	1	--	--
	STAGE 2 SUBTOTAL				--	1	1	--
		LOCAL ROADS						
1000	3	BROWN DEER ROAD	621BD+27	LT	--	--	1	--
	STAGE 3 SUBTOTAL				--	--	1	--
		TOTAL			**1**	**2**	**7**	**2**

EMERGENCY PAVEMENT REPAIR ITEMS

CATEGORY	STAGE	LOCATION	* 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	390.0203 BASE PATCHING ASPHALTIC SY	450.1100.S ASPHALTIC MIXTURE FOR EXTREME CONDITIONS TON	* 465.0125 ASPHALTIC SURFACE TEMPORARY TON	495.1000.S COLD PATCH TON	* 690.025 SAWING CONCRETE LF	(1) SPV.0060.0935 EMERGENCY RESPONSE TO PAVEMENT REPAIR EACH	SPV.0195.0001 HMA LONGITUDINAL JOINT REPAIR TON	SPV.0195.0002 HMA TRANSVERSE JOINT REPAIR TON
1000	ALL	PROJECT 1229-04-73	250	6,500	125	250	50	20,000	25	125	50
		TOTALS	**250**	**6,500**	**125**	**250**	**50**	**20,000**	**25**	**125**	**50**

* ADDITIONAL QUANTITIES SHOWN ELSEWHWERE

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1806
September 23, 2022

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PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 1806	E

(CONTINUED FROM PREVIOUS PAGE)

EROSION CONTROL ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINENANCE LF	628.1530.S HEAVY DUTY SILT FENCE MAINTENANCE LF	628.1535.S HEAVY DUTY SILT FENCE MAINTENANCE LF	628.2002 EROSION MAT CLASS I TYPE A SY	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.2023 EROSION MAT CLASS II TYPE B SY	628.6505 SOIL STABILIZER TYPE A ACRE	628.6510 SOIL STABILIZER TYPE B ACRE
		MAINLINE														
1000	3	IH 43 NB	1078+78	-	1097+03	RT	--	--	--	--	1,695	--	--	--	--	0
			1076+50	-	1077+00	RT	--	--	--	--	83	--	--	--	--	0
	3	IH 43 NB/SB	1185+00	-	1251+00		5,263	5,263	1,156	1,156	34,251	--	--	--	--	--
			1253+00	-	1282+46		835	835	2,191	2,191	16,303	--	--	--	--	--
		LOCAL ROADS														
1000	3	BROWN DEER ROAD	605BD+15	-	616BD+54	RT	706	706	--	--	570	--	--	--	--	--
			618BD+58	-	628BD+98	RT	570	570	233	233	1,132	--	--	--	--	--
		STAGE 3 SUBTOTAL					7,374	7,374	3,580	3,580	54,034	--	--	--	--	0
		MAINLINE														
1000	4	IH 43 SB	1078+60	-	1088+40	LT	--	--	--	--	1,674	--	--	--	--	0
			1132+36	-	1144+90	LT	--	--	--	--	5,103	--	--	--	--	1
			1157+83	-	1185+00	LT	--	--	--	--	8,213	--	--	--	--	2
	4	IH 43 NB/SB	1185+00	-	1251+00	RL	--	--	--	--	--	2,693	--	--	--	--
			1185+00	-	1261+00	RL	--	--	--	--	--	54,251	--	--	--	--
			1237+80	-	1251+00	RL	--	--	--	--	--	33,612	--	--	--	--
			1253+00	-	1282+46	RL	--	--	--	--	--	3,569	--	--	--	--
		RAMPS														
1000	4	GOOD HOPE RAMP C	1133GHC+23	-	1144GHC+35	LT	205	205	--	--	2,182	--	--	--	--	0
	4	GOOD HOPE RAMP D	1146GHD+73	-	1157GHD+75	LT	--	--	--	--	2,286	--	--	--	--	0
			1155GHD+33	-	1157GHD+75	LT	248	248	--	--	--	--	--	--	--	--
		LOCAL ROADS														
1000	3	BROWN DEER ROAD	605BD+15	-	616BD+54	RT	--	--	--	--	1,530	--	--	--	--	--
			618BD+58	-	628BD+98	RT	--	--	--	--	--	752	--	--	--	--
	4	JEAN NICOLET ROAD	25JN+50	-	28JN+60	LT	319	319	--	--	--	406	--	--	--	0
			28JN+69	-	30JN+91	LT	564	564	--	--	--	254	--	--	--	0
			31JN+24	-	32JN+52	LT	144	144	--	--	--	190	--	--	--	0
			32JN+81	-	36JN+42	LT	391	391	--	--	--	434	--	--	--	0
			36JN+73	-	38JN+77	LT	223	223	--	--	--	199	--	--	--	0
			38JN+89	-	41JN+46	LT	287	287	--	--	--	346	--	--	--	0
			41JN+72	-	44JN+32	LT	309	309	--	--	--	427	--	--	--	0
			43JN+73	-	57JN+97	RT	--	--	--	--	--	1,303	--	--	--	0
			44JN+71	-	45JN+07	LT	--	--	--	--	--	48	--	--	--	0
			45JN+44	-	50JN+86	LT	2,020	2,020	--	--	--	656	--	--	--	0
			51JN+31	-	57JN+16	LT	712	712	--	--	--	1,554	--	--	--	0
			58JN+25	-	62JN+12	LT	399	399	--	--	--	704	--	--	--	0
	4	BROWN DEER ROAD		-			--	--	--	--	--	--	--	--	--	--
		STAGE 4 SUBTOTAL					5,821	5,821	--	--	20,988	101,398	--	--	--	5
		UNDISTRIBUTED					3,620	3,620	1,000	1,000	20,100	10,600	500	--	5	2
		TOTALS					**39,829**	**39,829**	**11,315**	**11,315**	**221,943**	**116,895**	**5,049**	**--**	**5**	**21**

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Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1814
September 23, 2022

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 1814	E

(CONTINUED FROM PREVIOUS PAGE)

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RESTORATION ITEMS (CONTINUED)

CATEGORY	STAGE	ROADWAY	STATION		TO STATION	OFFSET	SPV.0180.0001 TOPSOIL SPECIAL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	SPV.0085.0003 SEEDING MIXTURE NO. 30 SPECIAL LB	SPV.0085.0004 NATIVE POLLINATOR SEEDING MIXTURE NO. 90A LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL
		MAINLINE											
1000	4	IH 43 SB	1078+60	-	1088+40	LT	1,674	--	1.1	52	2	--	--
			1132+36	-	1144+90	LT	5,103	--	3.2	100	7	--	--
			1146+10	-	1156+60	LT	6,606	--	4.2	143	8	--	--
			1157+83	-	1185+00	LT	6,689	--	4.2	179	7	--	--
1000	4	IH 43 NB/SB	1185+00	-	1251+00	RL	2,693	--	1.7	48	--	72	--
			1185+00	-	1261+00	RL	0	--	34.2	0	114	--	--
			1237+80	-	1251+00	RL	0	--	21.2	0	--	--	--
			1253+00	-	1282+46	RL	3,569	--	2.2	64	--	96	--
		RAMPS											
1000	4	GOOD HOPE RAMP C	1133GHC+23	-	1144GHC+35	LT	2,144	--	1.4	67	2	--	--
	4	GOOD HOPE RAMP D	1146GHD+73	-	1157GHD+75	LT	2,337	--	1.5	66	2	--	--
		LOCAL ROADS											
1000	4	BROWN DEER ROAD	601BD+00	-	616BD+54	RL	2,047	--	1.3	0	--	56	--
			618BD+58	-	628BD+98	RL	752	--	0.5	0	--	21	--
	4	JEAN NICOLET ROAD	25JN+50	-	28JN+60	LT	300	--	0.2	14	--	--	--
			28JN+69	-	30JN+91	LT	254	--	0.2	11	--	--	--
			31JN+24	-	32JN+52	LT	154	--	0.1	7	--	--	--
			32JN+81	-	36JN+42	LT	437	--	0.3	20	--	--	--
			36JN+73	-	38JN+77	LT	199	--	0.1	9	--	--	--
			38JN+89	-	41JN+46	LT	346	--	0.2	16	--	--	--
			41JN+72	-	44JN+32	LT	427	--	0.3	19	--	--	--
			43JN+73	-	57JN+97	RT	1,303	--	0.8	59	--	--	--
			44JN+71	-	45JN+07	LT	48	--	0.0	2	--	--	--
			45JN+44	-	50JN+86	LT	656	--	0.4	30	--	--	--
			51JN+31	-	57JN+16	LT	1,554	--	1.0	70	--	--	--
			58JN+25	-	62JN+12	LT	704	--	0.4	32	--	--	--
		STAGE 4 SUBTOTAL					39,995	0	80.6	1,008	142.0	245	0
		UNDISTRIBUTED	PROJECT				22,100	25,000	19.5	420	10	430	2,200
		TOTALS					**243,298**	**25,000**	**214.4**	**4,637**	**152**	**4,702**	**2,200**

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Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1820
September 23, 2022

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\J_Roadway & Drainage\PSE\1229-04-73 South End Good Hope & Brown Deer\SheetsPlan\03 Estimate of Quantities\73_030207_MQ
PLOT DATE : 9/19/2022 3:05:38 PM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ11 PLOT SCALE : 1:1

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1822
September 23, 2022

3

3

PAVEMENT MARKING ITEMS

CATEGORY	ROADWAY	STATION TO STATION	646.1020 MARKING LINE EPOXY 4-INCH WHITE LF	646.1020 MARKING LINE EPOXY 4-INCH YELLOW LF	646.1020 MARKING LINE EPOXY 4-INCH DOUBLE YELLOW LF	646.1020 MARKING LINE EPOXY 4-INCH 3-FT LINE 9-FT SKIP WHITE LF	646.1020 MARKING LINE EPOXY 4-INCH 12.5-FT LINE 37.5-FT SKIP WHITE LF	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH WHITE LF	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH YELLOW LF	646.1545 MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH 3-FT LINE 9-FT SKIP WHITE LF	646.1555 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH 12.5-FT LINE 37.5-FT SKIP WHITE LF	646.3020 MARKING LINE EPOXY 8-INCH WHITE LF	646.3020 MARKING LINE EPOXY 8-INCH YELLOW LF	646.3020 MARKING LINE EPOXY 8-INCH 3-FT LINE 9-FT SKIP WHITE LF	646.3555 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH WHITE LF	646.3555 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH 3-FT LINE 9-FT SKIP WHITE LF
	MAINLINE															
1000	IH 43 NB	1050+00 - 1075+00	--	--	--	--	--	2,521	2,505	--	1,257	--	--	--	--	--
		1075+00 1100+00	--	--	--	--	--	2,503	2,501	--	1,251	--	--	--	--	--
		1100+00 1125+00	--	--	--	--	--	1,915	2,502	--	1,252	--	--	--	--	--
		1125+00 1150+00	--	--	--	--	--	1,691	2,498	--	1,248	--	--	--	--	--
		1150+00 - 1185+00	--	--	--	--	--	2,180	3,501	--	1,750	--	--	--	--	--
		1185+00 - 1282+46	--	--	--	--	--	8,399	9,750	--	4,879	--	--	--	2,790	310
		1282+46 - 1360+06	--	--	--	--	--	--	7,752	--	7,775	--	--	--	--	--
1000	IH 43 SB	1050+00 - 1075+00	--	--	--	--	--	2,477	2,494	--	1,243	--	--	--	--	--
		1075+00 1100+00	--	--	--	--	--	2,497	2,499	--	1,249	--	--	--	--	--
		1100+00 1125+00	--	--	--	--	--	1,926	2,498	--	1,248	--	--	--	--	--
		1125+00 1150+00	--	--	--	--	--	1,660	2,502	--	1,252	--	--	--	--	--
		1150+00 - 1185+00	--	--	--	--	--	2,273	3,504	--	1,753	--	--	--	--	--
		1185+00 - 1285+46	--	--	--	--	--	8,611	9,738	--	4,865	--	--	--	2,425	312
		1282+46 - 1360+06	--	--	--	--	--	--	7,769	--	7,746	--	--	--	--	--
	RAMPS															
1000	GOOD HOPE RAMP A	1145GHA+70 - 1174GHA+51	--	--	--	--	--	2,751	1,427	--	169	278	--	--	1,380	211
1000	GOOD HOPE RAMP B	1119GHB+08 - 1144GHB+95	--	--	--	--	--	2,529	1,160	--	208	--	--	--	1,786	317
1000	GOOD HOPE RAMP C	1119GHC+32 - 1145GHC+00	--	--	--	--	--	2,505	1,117	--	305	--	--	--	1,807	75
1000	GOOD HOPE RAMP D	1145GHD+54 - 1168GHD+23	--	--	--	--	--	2,153	938	--	63	--	--	--	1,254	297
1000	BROWN DEER RAMP A	-	--	--	--	--	--	2,565	1,193	--	115	122	--	--	104	--
1000	BROWN DEER RAMP B	-	--	--	--	--	--	1,373	957	--	--	--	--	10	983	87
1000	BROWN DEER RAMP C	-	207	--	58	--	--	2,555	1,336	--	357	303	--	--	--	--
1000	BROWN DEER RAMP D	-	753	--	--	--	--	1,726	950	--	--	623	--	--	138	75

(CONTINUED ON NEXT PAGE)

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

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PLOT DATE : 9/16/2022 8:59:47 AM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ1 PLOT SCALE : 1:1

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1823
September 23, 2022

(CONTINUED FROM PREVIOUS PAGE)

3

3

PAVEMENT MARKING ITEMS (CONTINUED)

CATEGORY	ROADWAY	STATION	TO	STATION	646.1020 MARKING LINE EPOXY 4-INCH WHITE LF	646.1020 MARKING LINE EPOXY 4-INCH YELLOW LF	646.1020 MARKING LINE EPOXY 4-INCH DOUBLE YELLOW LF	646.1020 MARKING LINE EPOXY 4-INCH 3-FT LINE 9-FT SKIP WHITE LF	646.1020 MARKING LINE EPOXY 4-INCH 12.5-FT LINE 37.5-FT SKIP WHITE LF	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH WHITE LF	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH YELLOW LF	646.1545 MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH 3-FT LINE 9-FT SKIP WHITE LF	646.1555 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH 12.5-FT LINE 37.5-FT SKIP WHITE LF	646.3020 MARKING LINE EPOXY 8-INCH WHITE LF	646.3020 MARKING LINE EPOXY 8-INCH YELLOW LF	646.3020 MARKING LINE EPOXY 8-INCH 3-FT LINE 9-FT SKIP WHITE LF	646.3555 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH WHITE LF	646.3555 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH 3-FT LINE 9-FT SKIP WHITE LF
	LOCAL ROADS																	
1000	JEAN NICOLET ROAD	10JN+00	-	21JN+00	1,886	--	2,110	38	--	--	--	--	--	107	--	38	--	--
		21JN+00	-	32JN+50	2,006	--	2,300	25	--	--	--	--	--	--	--	--	--	--
		32JN+50		41JN+50	1,497	--	1,800	25	--	--	--	--	--	--	--	--	--	--
		41JN+50		51JN+00	1,795	--	1,900	13	--	--	--	--	--	--	--	--	--	--
		51JN+00		63JN+00	2,223	--	2,224	--	--	--	--	--	--	--	--	--	--	--
1000	BROWN DEER ROAD	605BD+15	-	617BD+46	1,383	1,007	--	80	554	--	--	80	--	103	--	25	--	--
		605BD+15	-	617BD+84	609	766	--	--	423	--	--	60	--	633	--	--	--	--
		617BD+46	-	628BD+68	967	832	--	148	167	--	--	70	--	897	--	55	--	--
		617BD+84	-	628BD+80	1,571	769	--	104	282	--	--	70	--	198	--	26	--	--
1000	W BENDER RD	13BN+00	-	17BN+50	--	--	448	--	--	--	--	--	--	241	--	--	--	--
1000	W GOOD HOPE RD	15GHW+00	-	36GHW+00	1,462	66	--	17	591	--	--	--	--	338	--	28	--	--
		15GHE+00	-	36GHE+00	1,021	67	--	352	88	--	--	--	--	2,067	--	39	--	--
1000	N PORT WASHINGTON RD	198PNGH+00	-	210PNGH+00	1,903	437	--	--	238	--	--	--	--	546	--	--	--	--
		198PSGH+00	-	210PSGH+00	544	428	--	--	304	--	--	--	--	107	--	--	--	--
	UNDISTRIBUTED					--	--	--	--	--	--	--	--	--	--	--	--	--
	TOTALS						**38,487**			**127,901**		**280**	**39,985**		**6,784**		**14,351**	

(CONTINUED ON NEXT PAGE)

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 1823	E

pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\J_Roadway & Drainage\PSE\1229-04-73 South End Good Hope & Brown Deer\SheetsPlan\03 Estimate of Quantities\73_030208_MQ
PLOT DATE : 9/16/2022 8:59:47 AM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ2 PLOT SCALE : 1:1

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	STAGE DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH**	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH**	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0500 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS EACH	643.0600 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH**	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH*	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAYS	643.0800 TRAFFIC CONTOL ARROW BOARDS EACH**	643.0800 TRAFFIC CONTOL ARROW BOARDS DAYS	* 643.0900 TRAFFIC CONTROL SIGNS EACH**	643.0900 TRAFFIC CONTROL SIGNS DAYS
1000	PRE-STAGE 1	96														
	IH 43 (BROWN DEER SEGMENT		105	10,080	2	192	--	--	4	384	--	--	--	--	26	2,496
	PRE-STAGE 1 SUBTOTAL			10,080		192	0	0		384		0		0		2,496
1000	STAGE 1A	96														
	IH 43 (GOOD HOPE SEGMENT)		494	47,424	7	672	--	--	14	1,344	--	--	--	--	28	2,688
	IH 43 (BROWN DEER SEGMENT		475	45,600	20	1,920	--	--	40	3,840	40	3,840	4	384	106	10,176
	JEAN NICOLET		--	--	20	1,920	--	--	40	3,840	--	--	--	--	12	1,152
	BROWN DEER ROAD		105	10,080	2	192	--	--	4	384	--	--	--	--	24	2,304
	STAGE 1A SUBTOTAL			103,104		4,704	0	0		9,408		3,840		384		16,320
	STAGE 1B	54														
	IH 43 (GOOD HOPE SEGMENT)		124	6,696	4	216	--	--	8	432	17	918	2	108	44	2,376
	IH 43 (BROWN DEER SEGMENT)		465	25,110	15	810	--	--	30	1,620	90	4,860	4	216	106	5,724
	PORT WASHINGTON -GH		60	3,240	7	378	--	--	14	756	10	540	1	54	28	1,512
	GOOD HOPE		72	3,888	7	378	--	--	14	756	13	702	1	54	24	1,296
	STAGE 1B SUBTOTAL			38,934		1,782	0	0		3,564		7,020		432		10,908
	STAGE 2A	103														
	IH 43		47	4,841	2	206	--	--	4	412	18	1,854	2	206	33	3,399
	JEAN NICOLET		--	--	13	1,339	--	--	26	2,678	--	--	--	--	8	824
	PORT WASHINGTON -GH		41	4,223	8	824	3	3	16	1,648	26	2,678	--	--	22	2,266
	GOOD HOPE		53	5,459	25	2,575	52	52	50	5,150	24	2,472	--	--	31	3,193
	STAGE 2A SUBTOTAL			14,523		4,944	55	55		9,888		7,004		206		9,682
	STAGE 2B	26														
	IH 43		47	1,222	2	52	--	--	4	104	18	468	2	52	34	884
	JEAN NICOLET		--	--	11	286	--	--	22	572	--	--	--	--	8	208
	PORT WASHINGTON -GH		49	1,274	14	364	19	19	28	728	38	988	--	--	22	572
	GOOD HOPE		75	1,950	16	416	50	50	32	832	21	546	1	26	32	832
	STAGE 2B SUBTOTAL			4,446		1,118	69	69		2,236		2,002		78		2,496
	STAGE 2C	31														
	IH 43		47	1,457	2	62	--	--	4	124	14	434	2	62	34	1,054
	PORT WASHINGTON -GH		74	2,294	11	341	19	19	22	682	38	1,178	--	--	26	806
	GOOD HOPE		46	1,426	7	217	61	61	14	434	10	310	1	31	26	806
	STAGE 2C SUBTOTAL			5,177		620	80	80		1,240		1,922		93		2,666
	STAGE 2D	15														
	IH 43		47	705	2	30	--	--	4	60	14	210	2	30	40	600
	PORT WASHINGTON -GH		41	615	6	90	--	--	12	180	--	--	--	--	23	345
	GOOD HOPE		86	1,290	--	--	--	--	--	--	10	150	1	15	19	285
	STAGE 2D SUBTOTAL			2,610		120	0	0		240		360		45		1,230
	STAGE 2 (A, B, C, D)	175														
	IH 43 (BROWN DEER SEGMENT)		375	65,625	40	7,000	50	50	80	14,000	40	7,000	2	350	146	25,550
	STAGE 2 (A, B, C, D) SUBTOTAL			65,625		7,000	50	50		14,000		7,000		350		25,550

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* ADDITIONAL QUANTITIES SHOWN ELSEWHERE
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ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\J_Roadway & Drainage\PSE\1229-04-73 South End Good Hope & Brown Deer\SheetsPlan\03 Estimate of Quantities\73_030209_MQ
PLOT DATE : 9/16/2022 10:43:49 AM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ1 PLOT SCALE : 1:1

(CONTINUED FROM PREVIOUS PAGE)

TRAFFIC CONTROL ITEMS (CONTINUED)

CATEGORY	LOCATION	STAGE DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH**	643.0300 DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH**	643.0420 DAYS	643.0500 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS EACH	643.0600 BASES EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH**	643.0705 DAYS	643.0715 TYPE C EACH*	643.0715 DAYS	643.0800 TRAFFIC CONTOL ARROW BOARDS EACH**	643.0800 DAYS	* 643.0900 TRAFFIC CONTROL SIGNS EACH**	643.0900 DAYS
	STAGE 2E	108														
	IH 43		52	5,616	1	108	--	--	2	216	14	1,512	2	216	40	4,320
	BROWN DEER ROAD		250	27,000	40	4,320	50	50	80	8,640	40	4,320	2	216	145	15,660
	STAGE 2E SUBTOTAL			32,616		4,428	50	50		8,856		5,832		432		19,980
1000	STAGE 3A	61														
	IH 43		132	8,052	4	244	--	--	8	488	32	1,952	3	183	51	3,111
	STAGE 3A SUBTOTAL			8,052		244	0	0		488		1,952		183		3,111
	STAGE 3B	42														
	IH 43		44	1,848	4	168	--	--	8	336	9	378	--	--	38	1,596
	STAGE 3B SUBTOTAL			1,848		168	0	0		336		378		0		1,596
	STAGE 3	180														
	IH 43 (BROWN DEER SEGMENT)		275	49,500	25	4,500	50	50	50	9,000	30	5,400	2	360	126	22,680
	STAGE 3 SUBTOTAL			49,500		4,500	50	50		9,000		5,400		360		22,680
	STAGE 4A	77														
	IH 43 (GOOD HOPE SEGMENT)		38	2,926	1	77	--	--	2	154	14	1,078	1	77	32	2,464
	IH 43 (BROWN DEER SEGMENT)		425	32,725	10	770	--	--	20	1,540	20	1,540	2	154	126	9,702
	JEAN NICOLET		20	1,540	12	924	--	--	24	1,848	6	462	--	--	7	539
	GOOD HOPE		32	2,464	9	693	--	--	18	1,386	--	--	--	--	11	847
	STAGE 4A SUBTOTAL			39,655		2,464	0	0		4,928		3,080		231		13,552
	STAGE 4A	90														
	IH 43 (BROWN DEER SEGMENT)		225	20,250	18	1,620	--	--	36	3,240	50	4,500	4	360	91	8,190
	STAGE 4A SUBTOTAL			20,250		1,620	0	0		3,240		4,500		360		8,190
	STAGE 4B	75														
	IH 43 (GOOD HOPE SEGMENT)		38	2,850	1	75	--	--	2	150	14	1,050	1	75	30	2,250
	IH 43 (BROWN DEER SEMENT)		310	23,250	10	750	--	--	20	1,500	--	--	--	--	61	4,575
	JEAN NICOLET		--	--	12	900	--	--	24	1,800	--	--	--	--	23	1,725
	GOOD HOPE		32	2,400	9	675	--	--	18	1,350	--	--	--	--	11	825
	STAGE 4B SUBTOTAL			28,500		2,400	0	0		4,800		1,050		75		9,375
	STAGE 5	10														
	TPO B-40-1026 & B-40-1027		85	850	2	20	--	--	4	40	25	250	3	30	15	150
	STAGE 5 SUBTOTAL			850		20	0	0		40		250		30		150
	UNDISTRIBUTED			43,021		4,108	0	0		8,215		5,859		347		15,717
	TOTALS			**468,791**		**40,432**	**354**	**354**		**80,863**		**57,449**		**3,606**		**165,699**

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ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

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PLOT DATE : 9/16/2022 10:43:49 AM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ2 PLOT SCALE : 1:1

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EMERGENCY RESPONSE TO TRAFFIC INCIDENT INVOLVING CONCRETE BARRIER TEMPORARY PRECAST (1)

CATEGORY	STAGE	LOCATION	SPV.0060.0940 EACH
1000	ALL	IH 43	10
	TOTAL		10

EMERGENCY RESPONSE TO TRAFFIC INCIDENT INVOLVING CRASH CUSHION (1)

CATEGORY	STAGE	LOCATION	SPV.0060.0945 EACH
1000	ALL	IH 43	5
	TOTAL		5

TRAFFIC CONTROL

CATEGORY	STAGE	LOCATION	643.5000 EACH
1000	ALL	PROJECT	0.82
	TOTAL		0.82

CONTRACTOR STAGING AREA

CATEGORY	STAGE	LOCATION	SPV.0060.0960 CONTRACTOR ON-SITE STAGING AREA EACH
1000	ALL	BROWN DEER ROAD PARK AND RIDE LOT	1
	TOTAL		1

TEMPORARY WATER DIVERSION

CATEGORY	LOCATION	SPV.0060.7010 TEMPORARY WATER DIVERSION INDIAN CREEK EACH
1000	1216+50	1
TOTAL		1

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ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

FTMS PULL BOXES AND VAULTS

CATEGORY	ROADWAY	ITEM ID.	LOCATION STATION	LOCATION OFFSET	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH	653.0140 PULL BOXES STEEL 24 X 42 - INCH EACH	673.0105 COMMUNICATION VAULT TYPE 1 EACH	673.0200 TRACER WIRE MARKER POSTS EACH	678.0200 FIBER OPTIC SPLICE ENCLOSURE EACH	678.0300 FIBER OPTIC SPLICE EACH	SPV.0060.2024 LOOP DETECTOR PROTECTION EACH
1300	IH 43										
		EXCV1078SB	--		1	--	--	1	1	74	--
		PB1078SB	1077SB+62	65' LT	--	1	--	--	--	--	--
		CV1078NB	1077NB+94	58' RT	--	--	1	--	--	--	--
		CV1079NB	1079NB+40	53' RT	--	--	1	--	--	--	--
		CV1088NB	1088NB+42	53' RT	--	--	1	--	--	--	--
		CV1097NB	1096NB+82	58' RT	--	--	1				--
		CV1112NB	1112NB+27	58' RT	--	--	1	--	--	--	--
		PB1114NB	1113NB+46	69' RT	--	1	--	--	--	--	--
		CV1127NB	1123NB+27	64' RT	--	--	1	--	--	--	--
		CV1140GHB	1139GHB+67	82' RT	--	--	1	1	1	78	--
		CV1146GHA	1146GHA+42	92' RT	--	--	1	--	--	--	--
		PB29GHW	29GHW+00	64' RT	--	1	--	--	--	--	--
		PB1149GHA	1146GHA+75	116' RT	--	1	--	--	--	--	--
		PB1148GHA	1146GHA+63	69' RT	--	1	--	--	--	--	--
		PB1147GHA	1146GHA+32	21' RT	--	1	--	--	--	--	--
		PB1150GHA	1150GHA+19	33' RT	--	1	--	--	--	--	--
		PB1152GHA	1152GHA+38	36' RT	--	1	--	--	--	--	--
		PB1153GHA	1153GHA+55	35' RT	--	1	--	--	--	--	--
		PB1156GHA	1156GHA+57	36' RT	--	1	--	--	--	--	--
		CV1157GHA	1156GHA+68	28' RT	--	--	1	--	--	--	--
		PB1159GHA	1159GHA+32	18' RT	--	1	--	--	--	--	--
		PB1162GHA	1162GHA+05	15' RT	--	1	--	--	--	--	--
		CV1166GHA	1166GHA+17	17' RT	--	--	1	--	--	--	--
		CV1156GHD	1156GHD+24	17' LT	--	--	1	--	--	--	--
		CV1147GHD	1147GHD+12	26' LT	--	--	1	--	--	--	--
		CV1145GHC	1145GHC+82	67' LT	--	--	1	1	--	--	--
		CV12GHW	--		--	--	--	--	--	--	--
		EXCV12GHW	--		--	--	--	--	--	--	--
		PB1143GHC	1143GHC+47	45' LT	--	1	--	--	--	--	--
		PB1144GHC	1145GHC+41	36' LT	--	1	--	--	--	--	--
		PB1145GHC	1145GHC+10	31' RT	--	1	--	--	--	--	--
		PB1145SB	1144SB+80	70' LT	--	1	--	--	--	--	--
		PB1142GHC	1142GHC+12	37' LT	--	1	--	--	--	--	--
		PB1139GHC	1138GHC+76	36' LT	--	1	--	--	--	--	--
		PB1138GHC	1138GHC+34	37' LT	--	1	--	--	--	--	--
		PB1140GHC	1138GHC+72	25' RT	--	1	--	--	--	--	--
		PB1135GHC	1135GHC+48	28' LT	--	1	--	--	--	--	--
		PB1133GHC	1133GHC+03	24' LT	--	1	--	--	--	--	--
		CV1181NB	1181NB+18	58' RT	--	--	1	--	--	--	--
		CV1198NB	1198NB+04	60' RT	--	--	1	1	1	4	--
		PB1198NB	1198NB+67	88' RT	--	1	--	--	--	--	--
		CV1204NB	1204NB+69	57' RT	--	--	1	--	--	--	--
		PB1204NB	1204NB+54	64' RT	--	1	--	--	--	--	--
		CV1214NB	1214NB+03	76' RT	--	--	1	--	--	--	--
		CV1219NB	1219NB+26	79' RT	--	--	1	--	--	--	--
		CV1228NB	1228NB+32	63' RT	--	--	1	--	--	--	--
		CV1241BDB	1241BDB+18	22' RT	--	--	1	--	--	--	--
		CV1249BDB	1248BDB+80	60' RT	--	--	1	1	1	76	--
		PB1249NB	1239NB+34	60' RT	--	--	--	--	--	--	--
		PB1250NB	1250NB+28	61' RT	--	1	--	--	--	--	--
		SUBTOTALS			1	25	21	5	4	32	0

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FTMS PULL BOXES AND VAULTS (CONTINUED)

CATEGORY	ROADWAY	ITEM ID.	LOCATION STATION	LOCATION OFFSET	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH	653.0140 PULL BOXES STEEL 24 X 42 - INCH EACH	673.0105 COMMUNICATION VAULT TYPE 1 EACH	673.0200 TRACER WIRE MARKER POSTS EACH	678.0200 FIBER OPTIC SPLICE ENCLOSURE EACH	678.0300 FIBER OPTIC SPLICE EACH	SPV.0060.2024 LOOP DETECTOR PROTECTION EACH
1300	IH 43										
		PB1251BDA	1251BDA+33	10' RT	--	1	--	--	--	--	1
		PB1256BDA	1256BDA+31	30' RT	--	1	--	--	--	--	2
		PB1259BDA	1258BDA+94	27' RT	--	1	--	--	--	--	4
		PB1266BDD	1265BDD+39	15' LT	--	1	--	--	--	--	--
		PB1262BDD	1262BDD+33	16' LT	--	1	--	--	--	--	--
		PB1259BDD	1259BDD+36	24' LT	--	1	--	--	--	--	--
		PB1256BDD	1256BDD+54	37' LT	--	1	--	--	--	--	--
		PB1254BDD	1254BDD+42	173' LT	--	1	--	--	--	--	--
		PB1253BDC	1250BDC+66	166' LT	--	1	--	--	--	--	--
		PB1254BDC	1250BDC+83	160' LT	--	1	--	--	--	--	--
		PB1255BDC	1251BDC+47	16' LT	--	1	--	--	--	--	--
		PB1249BDC	1249BDC+14	35' LT	--	1	--	--	--	--	--
		PB1248BDC	1249BDC+11	184' LT	--	1	--	--	--	--	--
		PB1250BDC	1249BDC+09	29' LT	--	1	--	--	--	--	--
		PB1249SB	1249SB+37	61' LT	--	1	--	--	--	--	--
		PB1252BDA	1252BDA+01	89' RT	--	1	--	--	--	--	1
		PB1247BDC	1247SB+00	28' RT	--	1	--	--	--	--	--
		PB1243BDC	1242BDC+56	24' RT	--	1	--	--	--	--	--
		PB1242BDC	1242BDC+52	38' LT	--	1	--	--	--	--	--
		PB1241BDC	1242BDC+07	39' LT	--	1	--	--	--	--	--
		PB1239BDC	1239BDC+43	31' LT	--	1	--	--	--	--	--
		PB1236BDC	1236BDC+41	24' LT	--	1	--	--	--	--	--
		PB1233BDC	1232BDC+95	15' LT	--	1	--	--	--	--	--
		CV1253BDA	1252BDA+89	44' RT	--	--	1	--	--	--	--
		CV1276BDA	1275BDA+80	18' RT	--	--	1	--	--	--	--
		EXCV1283NB	--		1	--	--	1	1	74	--
		PB1283NB	1282NB+63	84' RT	--	--	--	--	--	--	--
		SUBTOTALS			1	23	2	1	1	74	8
		TOTALS			2	48	23	6	5	306	8

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FTMS CONDUIT AND WIRE

CATEGORY	ROADWAY	ITEM ID	LINEAR DISTANCE	652.0125 CONDUIT RIGID METALLIC 2-INCH LF	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF	655.0250 CABLE TRAFFIC SIGNAL 9-14 AWG LF	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG LF	655.0635 ELECTRICAL WIRE LIGHTING 2 AWG LF	655.0700 LOOP DETECTOR LEAD IN CABLE LF	671.0132 CONDUIT HDPE 3-DUCT 2-INCH LF	671.0232 CONDUIT HDPE DIRECTIONAL BORE 3-DUCT 2-INCH LF	674.0200 CABLE MICROWAVE DETECTOR LF	678.0006 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT LF	678.0072 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 72-CT LF
1300	IH 43															
		CCTV-40-0238 - PB1078SB	10	10	20	--	--	10	30	--	--	--	--	--	10	--
		MBCCTV400238 - PB1078SB	20	--	20	--	--	--	60	--	--	--	--	--	--	--
		EXCV1078SB - PB1078SB	35	--	70	--	--	35	--	--	--	--	--	--	35	--
		EXCV1078SB	--	--	--	--	--	--	--	--	--	--	--	--	100	100
		EXCV1078SB - CV1078NB	175	--	--	--	--	175	--	--	--	175	--	--	--	175
		CV1078NB	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1078SB - CV1079NB	135	--	--	--	--	135	--	--	--	135	--	--	--	135
		CV1079NB	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1079NB - CV1088NB	890	--	--	--	--	890	--	--	--	890	--	--	--	890
		CV1088NB	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1088NB - CV1097NB	830	--	--	--	--	830	--	--	--	830	--	--	--	830
		CV1097NB	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1097NB - CV1112NB	1,540	--	--	--	--	1,540	--	--	--	1,540	--	--	--	1,540
		CV1112NB	--	--	--	--	--	--	--	--	--	--	--	--	100	100
		CV1112NB - PB1114NB	125	--	250	--	--	125	--	--	--	--	--	--	125	--
		PB1114NB - CCTV-40-0079	10	--	20	--	--	10	--	--	--	--	--	--	10	--
		MBCCTV400079 - CCTV-40-0079	25	25	--	--	--	--	75	--	--	--	--	--	--	--
		CV1112NB - CV1127GHB	1,490	--	--	--	--	1,490	--	--	--	1,490	--	--	--	1,490
		CV1127GHB	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1127GHB - CV1140GHB	1,660	--	--	--	--	1,660	--	--	--	1,660	--	--	--	1,660
		CV1140GHB	--	--	--	--	--	--	--	--	--	--	--	--	100	100
		CV1140GHB - CV1146GHA	655	--	--	--	--	655	--	--	--	655	--	--	655	655
		CV1146GHA	25	25	--	--	--	--	75	--	--	--	--	--	100	100
		CV1146GHA - PB1149GHA	35	--	70	--	--	35	--	--	--	--	--	--	70	--
		MBRM400141 - CB-RM-40-0141	25	25	--	--	--	--	75	--	--	--	--	--	--	--
		PB1149GHA - CB-RM-40-0141	10	--	60	10	10	10	30	--	110	--	--	30	20	--
		PB1149GHA - PB29GHW	50	--	50	100	--	50	--	--	--	--	--	--	--	--
		PB29GHW - FY29GHW	10	--	10	20	--	10	--	--	--	--	--	--	--	--
		PB1149GHA - PB1148GHA	45	--	135	--	--	45	--	--	495	--	--	135	--	--
		PB1148GHA - PB1147GHA	50	--	100	50	--	50	--	--	--	--	--	--	--	--
		PB1147GHA - FY28GHW	10	--	10	10	--	10	--	--	--	--	--	--	--	--
		PB1148GHA - PB1150GHA	360	--	720	--	360	360	--	--	3,240	--	--	1,080	--	--
		PB1150GHA - PB1152GHA	220	--	440	--	220	220	--	--	1,320	--	--	660	--	--
		PB1152GHA - PB1153GHA	120	--	240	--	120	120	--	--	--	--	--	360	--	--
		PB1153GHA - S-40-3046	10	--	20	--	10	10	--	--	--	--	--	--	--	--
		PB1153GHA - PB1156GHA	300	--	600	--	--	300	--	--	--	--	--	900	--	--
		PB1156GHA - PB1159GHA	275	--	550	--	--	275	--	--	--	--	--	825	--	--
		PB1159GHA - PB1162GHA	270	--	540	--	--	270	--	--	--	--	--	810	--	--
		PB1162GHA - DP1162GHA	10	--	20	--	--	10	--	--	--	--	--	30	--	--
		CV1146GHA - CV1157GHA	1,035	--	--	--	--	1,035	--	--	--	1,035	--	--	1,035	1,035
		CV1157GHA	--	--	--	--	--	--	--	--	--	--	--	--	50	--
		CV1157GHA - CV1156GHD	225	--	--	--	--	225	--	--	--	225	--	--	225	--
		CV1156GHD - CV1147GHD	910	--	--	--	--	910	--	--	--	910	--	--	910	--
		CV1147GHD	--	--	--	--	--	--	--	--	--	--	--	--	50	--
		CV1147GHD - CV1145GHC	275	--	--	--	--	275	--	--	--	275	--	--	275	--
		SUBTOTALS	85	3,945	190	720	11,775	345	--	5,165	9,820	--	4,830	3,870	9,060	

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1846
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	FTMS MISCELLANEOUS QUANTITIES	SHEET: 1846	E

FILE NAME : PLOT DATE : 9/20/2022 12:06:16 PM PLOT BY : PLOT NAME : PLOT SCALE : 1:1

FTMS CONDUIT AND WIRE (CONTINUED)

CATEGORY	ROADWAY	ITEM ID	LINEAR DISTANCE	652.0125 CONDUIT RIGID METALLIC 2-INCH LF	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF	655.0250 CABLE TRAFFIC SIGNAL 9-14 AWG LF	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG LF	655.0635 ELECTRICAL WIRE LIGHTING 2 AWG LF	655.0700 LOOP DETECTOR LEAD IN CABLE LF	671.0132 CONDUIT HDPE 3-DUCT 2-INCH LF	671.0232 CONDUIT HDPE DIRECTIONAL BORE 3-DUCT 2-INCH LF	674.0200 CABLE MICROWAVE DETECTOR LF	678.0006 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT LF	678.0072 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 72-CT LF
		CV1145GHC	--	--	--	--	--	--	--	--	--	--	--	--	50	--
		~~CV1145GHC - CV12GHW~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~
		~~CV12GHW~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~
		~~CV12GHW - EXCV12GHW~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~
		~~EXCV12GHW~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~
		~~CV1145GHC - PB1143GHC~~	~~40~~	~~--~~	~~80~~	~~--~~	~~--~~	~~40~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	~~40~~	~~--~~
		PB1143GHC - CB-RM-40-0023	10	--	60	10	10	10	--	--	110	--	--	30	10	--
		MBRM400023 - CB-RM-40-0023	15	15	--	--	--	--	45	--	--	--	--	--	--	--
		PB1143GHC - PB1142GHC	245	--	735	--	245	245	--	--	2,205	--	--	735	--	--
		PB1142GHC - PB1139GHC	320	--	640	--	320	320	--	--	1,920	--	--	960	--	--
		PB1139GHC - PB1142GHC	35	--	35	--	35	35	--	--	--	--	--	--	--	--
		PB1139GHC - S-40-3045	15	--	15	--	15	15	--	--	--	--	--	--	--	--
		PB1138GHC - PB1135GHC	330	--	660	--	--	330	--	--	--	--	--	990	--	--
		PB1135GHC - PB1133GHC	240	--	480	--	--	240	--	--	--	--	--	720	--	--
		PB1133GHC - DP1133GHC	10	--	20	--	--	10	--	--	--	--	--	30	--	--
		PB1143GHC - PB1144GHC	60	--	120	60	--	60	--	--	--	--	--	--	--	--
		PB1144GHC - FY1145GHC	10	--	10	20	--	10	--	--	--	--	--	--	--	--
		PB1144GHC - PB1145GHC	45	--	90	--	--	45	--	--	--	--	--	--	--	--
		PB1145GHC - PB1145SB	70	--	140	--	--	70	--	--	--	--	--	--	--	--
		PB1145SB - CCTV-40-0080	20	--	40	--	--	20	--	--	--	--	--	--	--	--
		CV1157GHA - CV1166GHA	950	--	--	--	--	950	--	--	--	950	--	--	--	950
		CV1166GHA	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1166GHA - CV1181NB	1,505	--	--	--	--	1,505	--	--	--	1,505	--	--	--	1,505
		CV1181NB	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1181NB - CV1198NB	1,700	--	--	--	--	1,700	--	--	--	1,700	--	--	--	1,700
		CV1198NB	--	--	--	--	--	--	--	--	--	--	--	--	100	100
		CV1198NB - PB1199NB	60	--	--	--	--	60	--	--	--	--	--	--	60	--
		PB1199NB - SDS-40-0055	10	--	20	--	--	10	30	--	--	--	--	--	20	--
		EX-MBSDS400055 - PB1199NB	35	35	--	--	--	--	105	--	--	--	--	--	--	--
		CV1198NB - CV1204NB	660	--	--	--	--	660	--	--	--	660	--	--	660	660
		CV1204NB - PB1204NB	10	--	20	--	--	10	--	--	--	--	--	--	10	--
		CV1204NB	--	--	--	--	--	--	--	--	--	--	--	--	50	50
		PB1204NB - S-40-461	10	10	20	--	--	10	--	40	--	--	--	--	10	--
		MBDMS400039 - PB1204NB	15	--	15	--	--	--	--	60	--	--	--	--	--	--
		CV1204NB - CV1214NB	930	--	--	--	--	930	--	--	--	930	--	--	--	930
		CV1214NB	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1214NB - CV1219NB	520	--	--	--	--	520	--	--	--	520	--	--	--	520
		CV1219NB	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1219NB - CV1228NB	910	--	--	--	--	910	--	--	--	910	--	--	--	910
		CV1228NB	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1228NB - CV1241BDB	1,285	--	--	--	--	1,285	--	--	--	1,285	--	--	--	1,285
		CV1241BDB	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1241BDB - CV1249BDB	755	--	--	--	--	755	--	--	--	755	--	--	--	755
		CV1249BDB	--	--	--	--	--	--	--	--	--	--	--	--	100	100
		CV1249BDB - CV1253BDA	465	--	--	--	--	465	--	--	--	465	--	--	--	465
		SUBTOTALS	60	3,200	90	625	11,220	180	100	4,235	9,680	--	3,465	1,110	10,230	

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1847
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	FTMS MISCELLANEOUS QUANTITIES	SHEET: 1847	E

FILE NAME : PLOT DATE : 9/20/2022 12:06:16 PM PLOT BY : PLOT NAME : PLOT SCALE : 1:1

FTMS CONDUIT AND WIRE (CONTINUED)

CATEGORY	ROADWAY	ITEM ID	LINEAR DISTANCE	652.0125 CONDUIT RIGID METALLIC 2-INCH LF	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF	655.0250 CABLE TRAFFIC SIGNAL 9-14 AWG LF	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG LF	655.0635 ELECTRICAL WIRE LIGHTING 2 AWG LF	655.0700 LOOP DETECTOR LEAD IN CABLE LF	671.0132 CONDUIT HDPE 3-DUCT 2-INCH LF	671.0232 CONDUIT HDPE DIRECTIONAL BORE 3-DUCT 2-INCH LF	674.0200 CABLE MICROWAVE DETECTOR LF	678.0006 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT LF	678.0072 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 72-CT LF
		CV1253BDA	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1253BDA - CV1258BDA	515	--	--	--	--	515	--	--	--	515	--	--	--	515
		CV1258BDA	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1258BDA - CV1276BDA	1,785	--	--	--	--	1,785	--	--	--	1,785	--	--	--	1,785
		CV1276BDA	--	--	--	--	--	--	--	--	--	--	--	--	--	50
		CV1276BDA - EXCV1283NB	665	--	--	--	--	665	--	--	--	665	--	--	--	665
		EXCV1283NB	--	--	--	--	--	--	--	--	--	--	--	--	100	100
		EXCV1283NB - PB1283NB	25	--	50	--	--	25	--	--	--	--	--	--	25	--
		PB1283NB - SDS-40-0141	15	15	30	--	--	15	45	--	--	--	--	--	15	--
		MBSDS400141 - PB1283NB	60	--	60	--	--	--	180	--	--	--	--	--	--	--
		DP1266BDD - PB1266BDD	10	--	20	--	--	10	--	--	--	--	--	30	--	--
		PB1266BDD - PB1262BDD	305	--	610	--	--	305	--	--	--	--	--	915	--	--
		PB1262BDD - PB1259BDD	290	--	580	--	--	290	--	--	--	--	--	870	--	--
		PB1259BDD - PB1256BDD	285	--	570	--	--	285	--	--	--	--	--	855	--	--
		PB1256BDD - PB1254BDD	275	--	550	--	--	550	--	--	--	--	--	825	--	--
		PB1254BDD - PB1253BDD	245	--	490	--	--	245	--	--	--	--	--	735	--	--
		PB1253BDC - FY1253BDC	10	--	10	20	--	10	--	--	--	--	--	--	--	--
		PB1253BDC - PB1249BDC	270	--	540	270	--	270	--	--	540	--	--	810	--	--
		PB1248BDC - PB1249BDC	150	--	150	--	--	--	450	--	--	--	--	--	--	--
		EXMBRM400084 - PB1248BDC	10	--	--	--	--	--	30	--	--	--	--	--	--	--
		PB1249BDC - PB1250BDC	65	--	260	--	--	--	195	--	130	--	--	195	--	--
		PB1250BDC - CB-RM-40-0084	15	15	90	15	15	15	45	--	30	--	--	45	--	--
		PB1250BDC - PB1247BDC	210	--	630	--	210	210	--	--	1,890	--	--	630	--	--
		PB1247BDC - PB1243BDC	450	--	1,350	--	450	450	--	--	2,700	--	--	1,350	--	--
		PB1243BDC - PB1242BDC	60	--	180	--	60	60	--	--	120	--	--	120	--	--
		PB1242BDC - S-40-3050	10	--	20	--	10	10	--	--	--	--	--	--	--	--
		PB1242BDC - PB1239BDC	305	--	610	--	--	305	--	--	--	--	--	915	--	--
		PB1236BDC - PB1233BDC	350	--	700	--	--	350	--	--	--	--	--	1,050	--	--
		PB1233BDC - DP1233BDC	10	--	20	--	--	10	--	--	--	--	--	20	--	--
		PB1250BDC - PB1249SB	125	--	375	--	--	125	375	--	--	--	--	--	125	--
		PB1249SB - PB1249NB	155	--	465	--	--	155	465	--	--	--	--	--	155	--
		PB1249NB - PB1250NB	50	--	100	--	--	50	150	--	--	--	--	--	50	--
		PB1250NB - CCTV-40-0089	10	10	20	--	--	10	30	--	--	--	--	--	10	--
		CV1249BDB - PB1249NB	180	--	360	--	--	--	--	--	--	--	--	--	180	--
		FY1255BDC - PB1255BDC	10	--	10	10	--	10	--	--	--	--	--	--	--	--
		PB1255BDC - PB1254BDC	175	--	350	175	--	175	--	--	175	--	--	--	--	--
		PB1254BDC - PB1253BDC	40	--	80	40	--	40	--	--	40	--	--	--	--	--
		SUBTOTALS	40	9,280	530	745	6,945	1,965	--	5,625	2,965	--	9,365	660	3,215	
		TOTALS	185	16,425	810	2,090	29,940	2,490	100	17,225	22,465	--	17,660	5,640	22,505	

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Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1848
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	FTMS MISCELLANEOUS QUANTITIES	SHEET: 1848	E

FILE NAME : PLOT DATE : 9/20/2022 12:06:16 PM PLOT BY : PLOT NAME : PLOT SCALE : 1:1

LIGHTING AND MISCELLANEOUS - FINAL

CATEGORY	STAGE	DESCRIPTION	LOCATION	654.0105* CONCRETE BASES TYPE 5 EACH	654.0115 CONCRETE BASES TYPE F EACH	655.061* ELECTRICAL WIRE LIGHTING 12 AWG LF	657.0210 TRANSFORMER BASES BREAKAWAY 15-17-INCH BOLT CIRCLE EACH	657.0255* TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0322* POLES TYPE 5-ALUMINUM EACH	657.0375 POLES TYPE A EACH	657.0381 POLES TYPE F EACH	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT EACH	657.0620 LUMINAIRE ARMS SINGLE MEMBER 6-INCH CLAMP 4-FT EACH	659.1125* LUMINAIRE UTILITY LED C EACH	659.1130 LUMINAIRE UTILITY LED D EACH	SPV.0060.1010 CONCRETE BASE, TYPE B EACH	SPV.0060.1011 CONCRETE BASE, TYPE 5 SPECIAL EACH	SPV.0060.1013 INSTALL SALVAGED MUNICIPAL LIGHTING UNIT EACH	REMARKS
1100	2	CFS9/DFS9	1085+99.99, 1.00'LT	--	1	390	–	–	–	1	–	–	2	–	2	1	–	–	IH 43 MAINLINE
	2	CFS10/DFS10	1083+49.72, 2.63'LT	--	1	390	–	–	–	–	1	–	--	–	2	–	–	–	IH 43 MAINLINE
	2	CFS11/DFS11	1081+00.12, 1.81'LT	--	1	390	–	–	–	–	1	–	--	–	2	–	–	–	IH 43 MAINLINE
	2	CFS12/DFS12	1079+20.00, 0.65'LT	--	1	390	–	–	–	–	1	–	--	–	2	–	–	–	IH 43 MAINLINE
	2	EFS1/FFS1	1088+39.49, 0.88'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	2	EFS2/FFS2	1091+14.22, 0.29'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	2	EFS3/FFS3	1093+66.36, 0.20'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	2	EFS4/FFS4	1096+30.64, 0.07'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	2	EFS5/FFS5	1099+00.00, 0.00'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	3	EFS6/EFS6	1101+68.60, 0.00'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	3	EFS7/FFS6	1104+37.14, 0.24'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	3	EFS8/FFS8	1107+05.15, 0.00'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	3	EFS9/FFS9	1109+62.22, 0.00'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	3	EFS10/FFS10	1112+30.08, 0.00'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	3	EFS11/FFS11	1114+98.11, 0.09'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	3	EFS12/FFS12	1117+66.12, 0.00'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	3	EFS13/FFS13	1120+24.23, 0.48'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	3	EFS14/FFS14	1122+90.86, 0.00'LT	--	–	390	1	–	–	1	–	–	--	–	2	1	–	–	IH 43 MAINLINE
	3	CBQ3	610BDE+78.3, 66.43'RT	1	–	135	–	1	1	–	–	1	--	1	–	–	–	–	BROWN DEER P&R
	3	CBR1/DBR1	609BDE+71.77, 25.51'LT	1	–	270	–	1	1	–	–	2	--	2	–	--	–	–	BROWN DEER ROAD
	3	CBR2/DBR2	611BDE+37.70, 44.24'LT	1	–	270	–	1	1	–	–	2	--	2	–	--	–	–	BROWN DEER ROAD
	3	CBR3	611BDE+82.38, 50.76'LT	1	–	135	–	1	1	–	–	1	--	1	–	–	–	–	RAMP BDC
	3	DBR3	613BDE+52.83, 59.85'RT	1	–	135	–	1	1	–	–	1	--	1	–	–	–	–	RAMP BDC
	3	CBR4	1250BDC+43.64, 79.37'LT	1	–	135	–	1	1	–	–	1	--	1	–	--	–	–	RAMP BDC
	3	DBR4	615BDE+90.94, 118.32'RT	1	–	135	–	1	1	–	–	1	--	1	–	--	–	–	RAMP BDC
	3	CBR5	618BDE+01.78, SM	--	–	135	–	1	1	–	–	1	--	1	–	–	–	–	B-40-732
	3	DBR5	1249BDC+04.15, 41.00'LT	1	–	135	–	1	1	–	–	1	--	1	–	--	–	–	RAMP BDC
	3	CBR6	1247BDC+05.00, 41.00'LT	1	–	135	–	1	1	–	–	1	--	1	–	--	–	–	RAMP BDC
	3	DBR6	1245BDC+14.98, 41.00'LT	1	–	135	–	1	1	–	–	1	--	1	–	--	–	–	RAMP BDC
	3	CBR7	1243BDC+15.38, 34.00'LT	1	–	135	–	1	1	–	–	1	--	1	–	--	–	–	RAMP BDC
	3	DBR7	1241BDC+19.0, 29.00'LT	1	–	135	–	1	1	–	–	1	--	1	–	--	–	–	RAMP BDC
	3	CBR8	1239BDC+45.29, 28.00'T	1	–	135	–	1	1	–	–	1	--	1	–	--	–	–	RAMP BDC
	3	EBR1/FBR1	612BDE+85.80, 97.02'LT	1	–	270	–	1	1	–	–	2	--	2	–	–	–	–	RAMP DBB
	3	EBR2	1253BDD+80.59, 18.22'LT	1	–	135	–	1	1	–	–	1	--	1	–	–	–	–	RAMP DBB
	3	FBR2	617BDE+44.10, SM	--	–	135	–	1	1	–	–	1	--	1	–	–	–	–	B-40-733
	3	EBR3/FBR3	1254BDD+26.94, 42.91'LT	1	–	135	–	1	1	–	–	2	--	2	–	–	–	–	RAMP DBB
	3	FBR4	1256BDD+78.68, 39.00'LT	1	–	135	–	1	1	–	–	1	--	1	–	–	–	–	RAMP DBB
	3	EBR4	1258BDD+73.32, 29.00'LT	1	–	135	–	1	1	–	–	1	--	1	–	–	–	–	RAMP DBB
	3	FBR5	1260BDD+67.73, 20.00'LT	1	–	135	–	1	1	–	–	1	--	1	–	–	–	–	RAMP DBB
	3	EBR5	1262BDD+55.55, 17.00'LT	1	–	135	–	1	1	–	–	1	--	1	–	–	–	–	RAMP DBB

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

(CONTINUED ON NEXT SHEET)

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1862
September 23, 2022

LIGHTING AND MISCELLANEOUS - FINAL (CONTINUED)

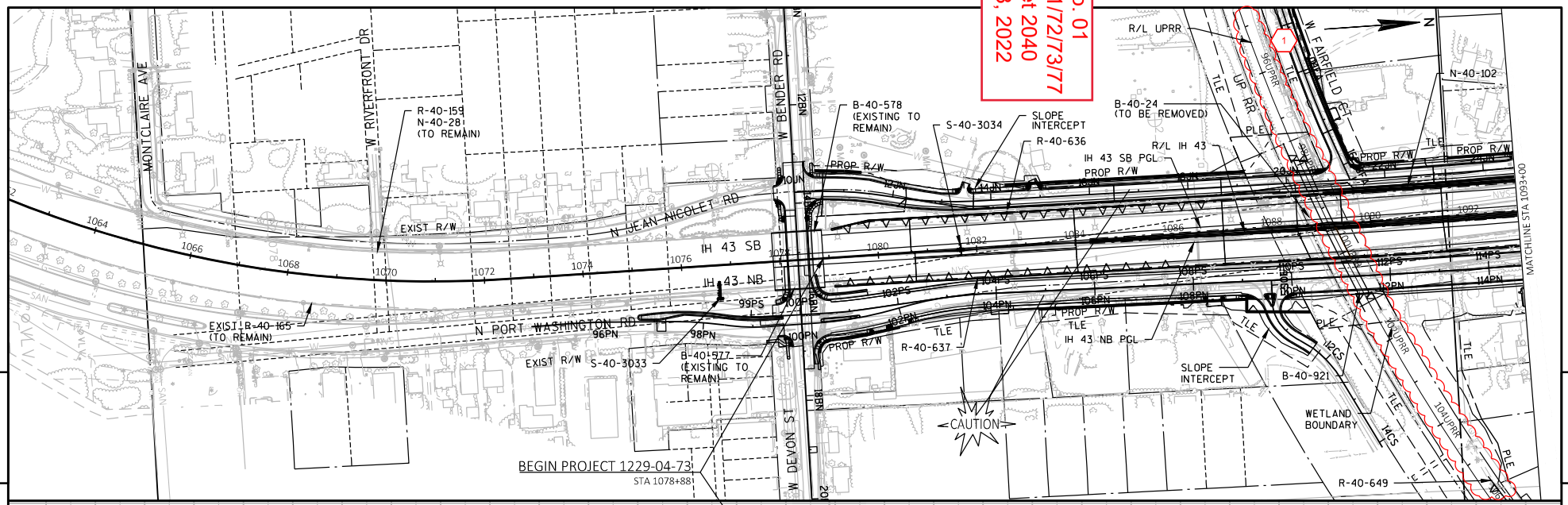
CATEGORY	STAGE	DESCRIPTION	LOCATION	654.0105* CONCRETE BASES TYPE 5 EACH	654.0115 CONCRETE BASES TYPE F EACH	655.061* ELECTRICAL WIRE LIGHTING 12 AWG LF	657.0210 TRANSFORMER BASES BREAKAWAY 15-17-INCH BOLT CIRCLE EACH	657.0255* TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0322* POLES TYPE 5-ALUMINUM EACH	657.0375 POLES TYPE A EACH	657.0381 POLES TYPE F EACH	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT EACH	657.0620 LUMINAIRE ARMS SINGLE MEMBER 6-INCH CLAMP 4-FT EACH	659.1125* LUMINAIRE UTILITY LED C EACH	659.1130 LUMINAIRE UTILITY LED D EACH	SPV.0060.1010 CONCRETE BASE, TYPE B EACH	SPV.0060.1011 CONCRETE BASE, TYPE 5 SPECIAL EACH	SPV.0060.1013 INSTALL SALVAGED MUNICIPAL LIGHTING UNIT EACH	REMARKS
1100	3	ABR1/BBR1	1196+71.94, 3.35'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR2/BBR2	1199+22.04, 1.31'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR3/BBR3	1201+72.27, 0.14'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR4/BBR4	1204+22.01, 0.05'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR5/BBR5	1206+72.08, 0.15'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR6/BBR6	1209+22.07, 0.09'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR7/BBR7	1211+72.02, 0.11'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR8/BBR8	1214+22.12, 0.01'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR9/BBR9	1217+40.12, 0.10'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR10/BBR10	1219+90.11, 0.46'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR11/BBR11	1222+40.12, 0.05'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR12/BBR12	1225+21.12, 0.24'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR13/BBR13	1227+70.74, 0.18'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR14/BBR14	1230+21.03, 3.43'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR15/BBR15	1232+21.24, 1.53'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR16/BBR16	1235+20.76, 3.95'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR17/BBR17	1237+71.03, 0.52'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR18/BBR18	1240+21.34, 0.15'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR19/BBR19	1243+22.03, 0.01'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR20/BBR20	1245+69.74, 0.12'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR21/BBR21	1248+07.35, 0.42'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ABR22/BBR22	1250+76.85, 4.86'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ANM1/BNM1	1253+30.04, 0.42'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ANM2/BNM2	1255+80.07, 0.20'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ANM3/BNM3	1258+30.08, 0.11'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ANM4/BNM4	1260+80.01, 0.05'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ANM5/BNM5	1263+30.07, 0.01'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ANM6/BNM6	1265+80.05, 0.06'LT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ANM7/BNM6	1268+30.08, 0.12'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ANM8/BNM8	1270+80.26, 0.16'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	3	ANM9/BNM9	1273+30.09, 0.39'RT	–	–	390	1	--	--	1	–	–	2	--	2	1	–	–	IH 43 MAINLINE
	2D	EX-LP21	198PNGH+93.48, 22.29'LT	1	–	270	--	1	--	--	–	–	–	--	--	–	–	1	GLENDALE LIGHT POLE
	2D	EX-LP22	199PNGH+99.42, 32.82'LT	1	–	–	--	1	--	--	–	–	–	--	--	–	–	–	GLENDALE LIGHT POLE
	2D	EX-LP23	200PNGH+90.58, 35.69'LT	1	–	270	--	1	--	--	–	–	–	--	--	–	–	1	GLENDALE LIGHT POLE
	2D	EX-LP24	202PNGH+21.03, 37.00'LT	1	–	270	--	1	--	--	–	–	–	--	--	–	–	1	GLENDALE LIGHT POLE
	2A	DBW-14	1078+94.24, 109.25'LT	1	–	270	--	1	--	--	–	–	–	--	–	–	–	1	GLENDALE LIGHT POLE
			TOTALS	73	4	41,520	72	80	75	73 (1)	3	81	118	81	152	73 (1)	5	4	

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 1865
September 23, 2022

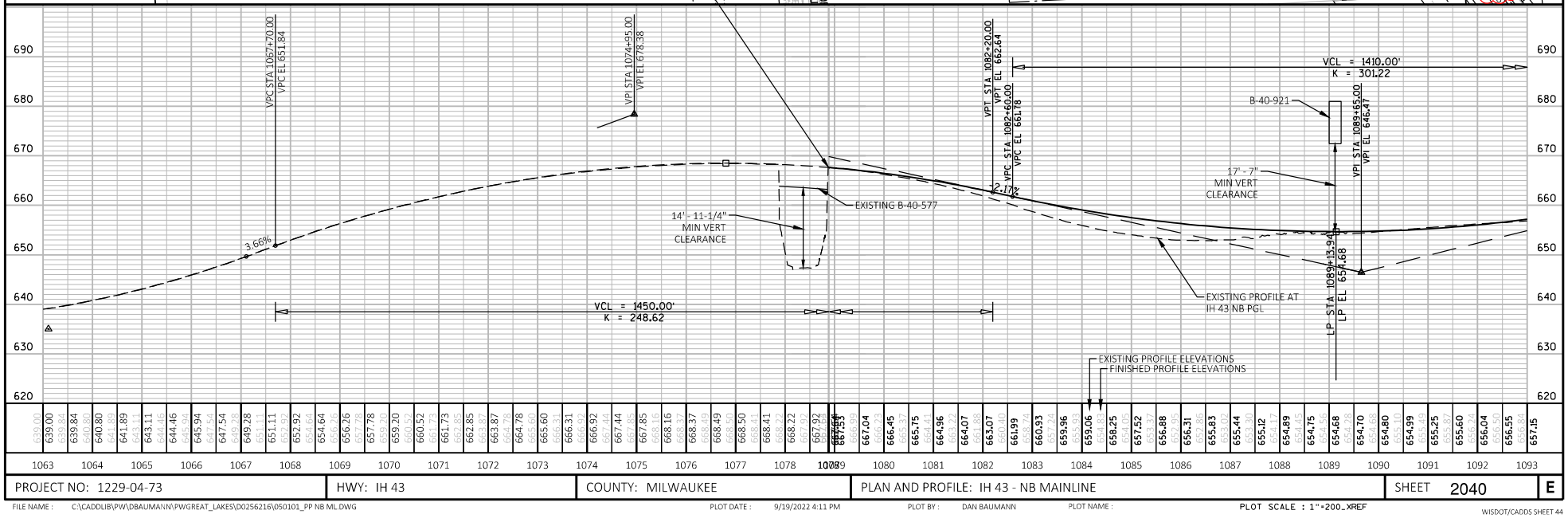
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: OZAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 1865	E

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2040
September 23, 2022



5

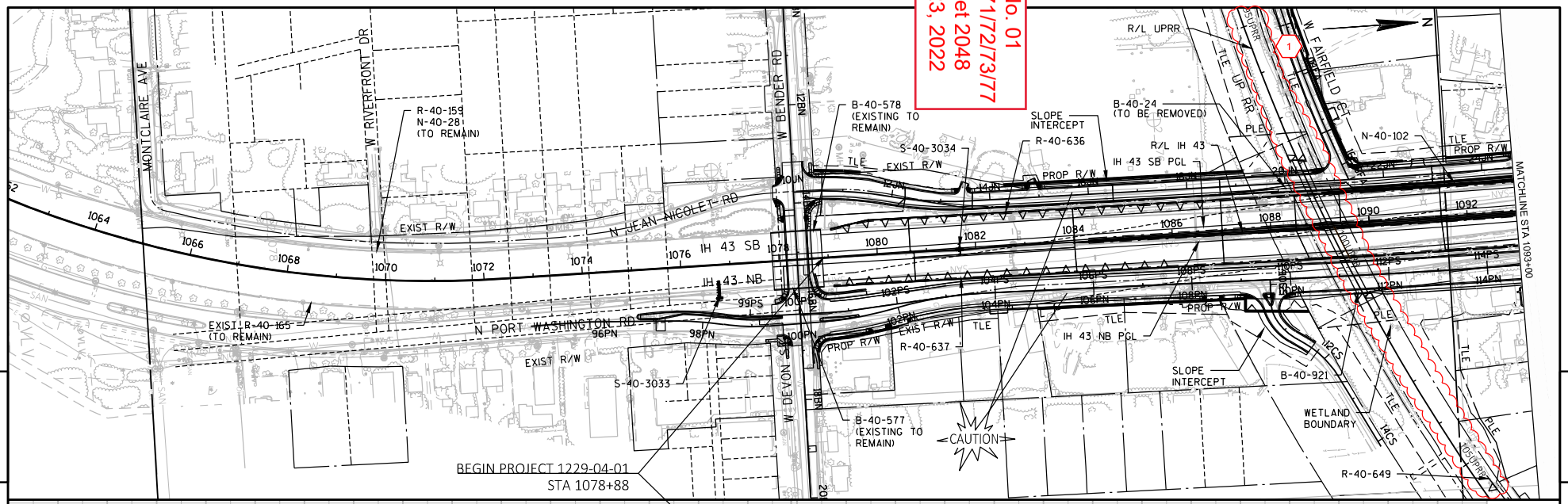
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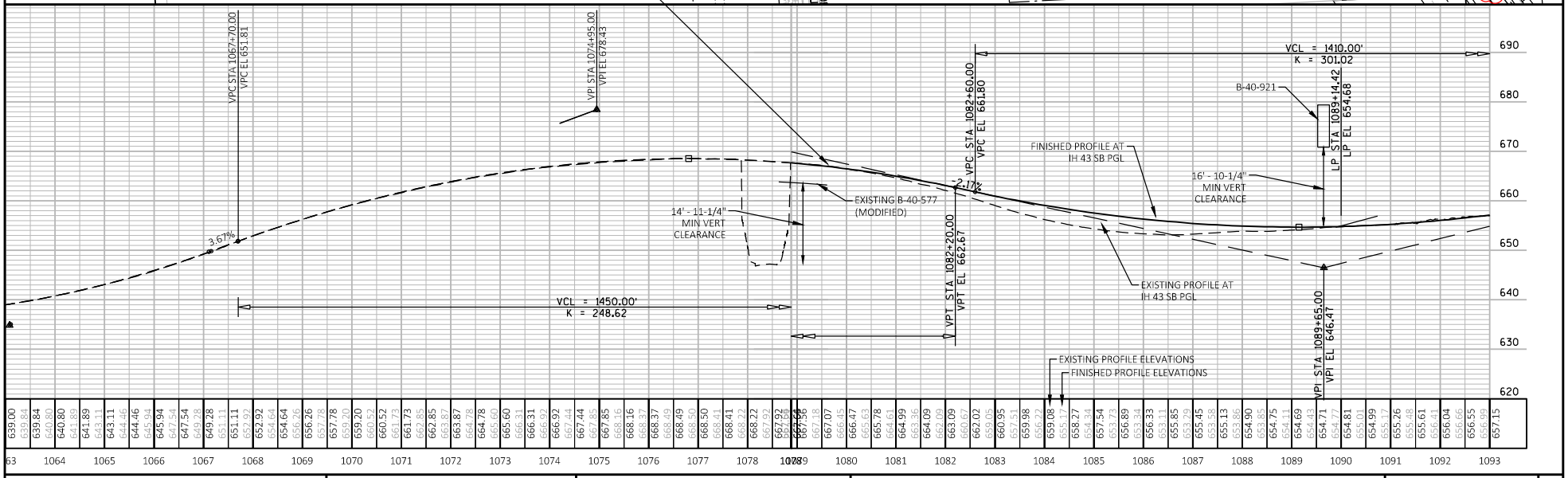


PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN AND PROFILE: IH 43 - NB MAINLINE	SHEET 2040	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256216\050101_PP NB ML.DWG
PLOT DATE : 9/19/2022 4:11 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1"=200_XREF

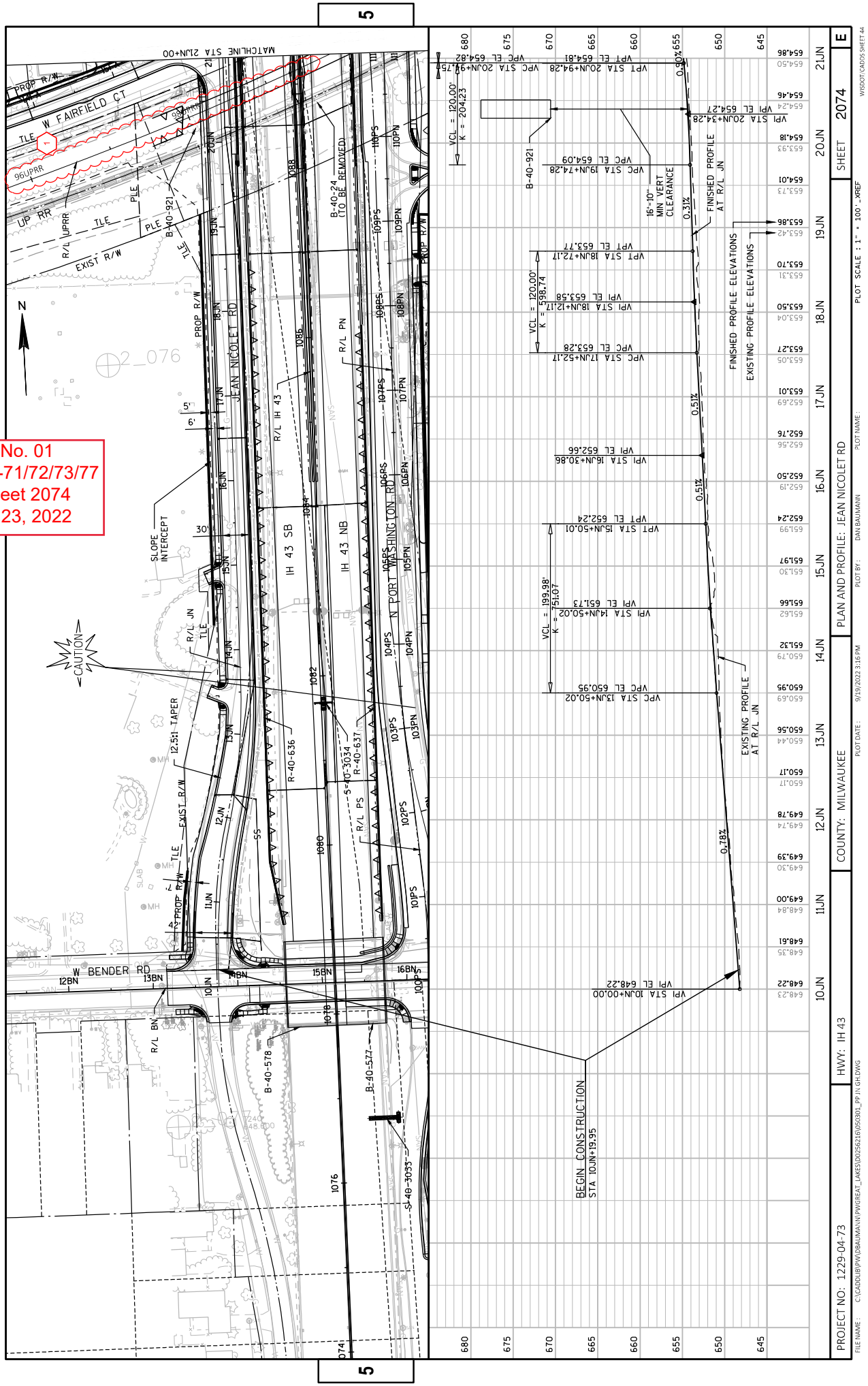
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2048
September 23, 2022



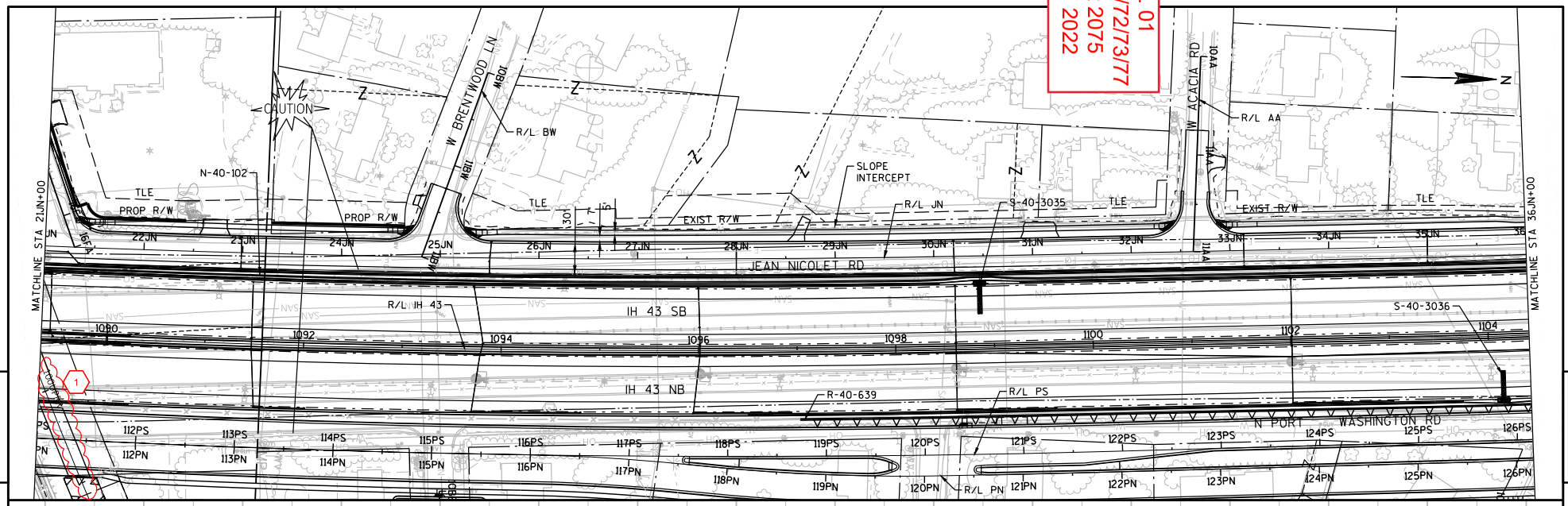


PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN AND PROFILE: IH 43 - SB MAINLINE	SHEET 2048	E

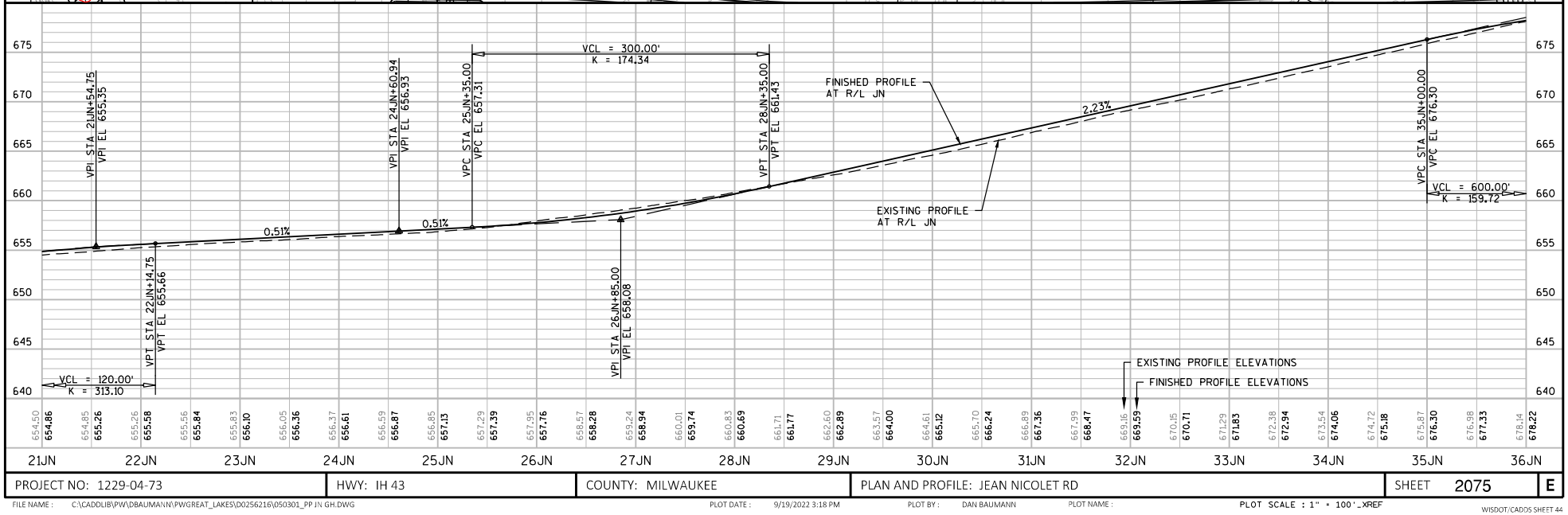
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PLOT DATE : 9/19/2022 4:40 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1"=200_XREF
WISDOT/CADDS SHEET 44


Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2074
September 23, 2022
MATCHLINE STA 21JUN+00
W FAIRFIELD CT
UP RR
EXIST R/W
PROP R/W
JEAN NICOLET RD
IH 43 SB
IH 43 NB
N PORT WASHINGTON RD
SLOPE INTERCEPT
CAUTION
12.5:1 TAPER
W BENDER RD
B-40-24 (TO BE REMOVED)
B-40-921
B-40-578
B-40-577
S-40-3033
S-40-3034
R-40-636
R-40-637
BEGIN CONSTRUCTION
STA 10JN+19.95
VCL = 120.00'
K = 204.23
VCL = 120.00'
K = 598.74
VCL = 199.98'
K = 751.07
0.90%
0.31%
0.51%
0.51%
0.78%
FINISHED PROFILE AT R/L JN
EXISTING PROFILE AT R/L JN
16'-10" MIN VERT CLEARANCE
FINISHED PROFILE ELEVATIONS
EXISTING PROFILE ELEVATIONS
VPC STA 20JUN+94.28 VPC EL 654.82
VPT STA 20JUN+94.28 VPT EL 654.81
VPC STA 20JUN+34.28 VPC EL 654.27
VPT STA 20JUN+34.28 VPT EL 654.24
VPC STA 19JUN+74.28 VPC EL 654.09
VPT STA 18JUN+72.17 VPT EL 653.77
VPC STA 18JUN+12.17 VPC EL 653.58
VPT STA 18JUN+12.17 VPT EL 653.58
VPC STA 17JUN+52.17 VPC EL 653.28
VPT STA 16JUN+30.86 VPT EL 652.66
VPC STA 15JUN+50.01 VPC EL 652.24
VPT STA 15JUN+50.01 VPT EL 652.24
VPC STA 14JUN+50.02 VPC EL 651.73
VPT STA 14JUN+50.02 VPT EL 651.73
VPC STA 13JUN+50.02 VPC EL 650.95
VPT STA 10JUN+00.00 VPT EL 648.22
PROJECT NO: 1229-04-73
HWY: IH 43
COUNTY: MILWAUKEE
PLAN AND PROFILE: JEAN NICOLET RD
SHEET 2074
E
PLOT SCALE : 1" = 100'
PLOT DATE : 9/19/2022 3:16 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
FILE NAME : C:\CADDL\BJPW\DBAUMAN\PWGREAT_LAKES\D0256216\050301_PP JN GH.DWG
WISDOT/CADDS SHEET 44

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2075
September 23, 2022



5 5

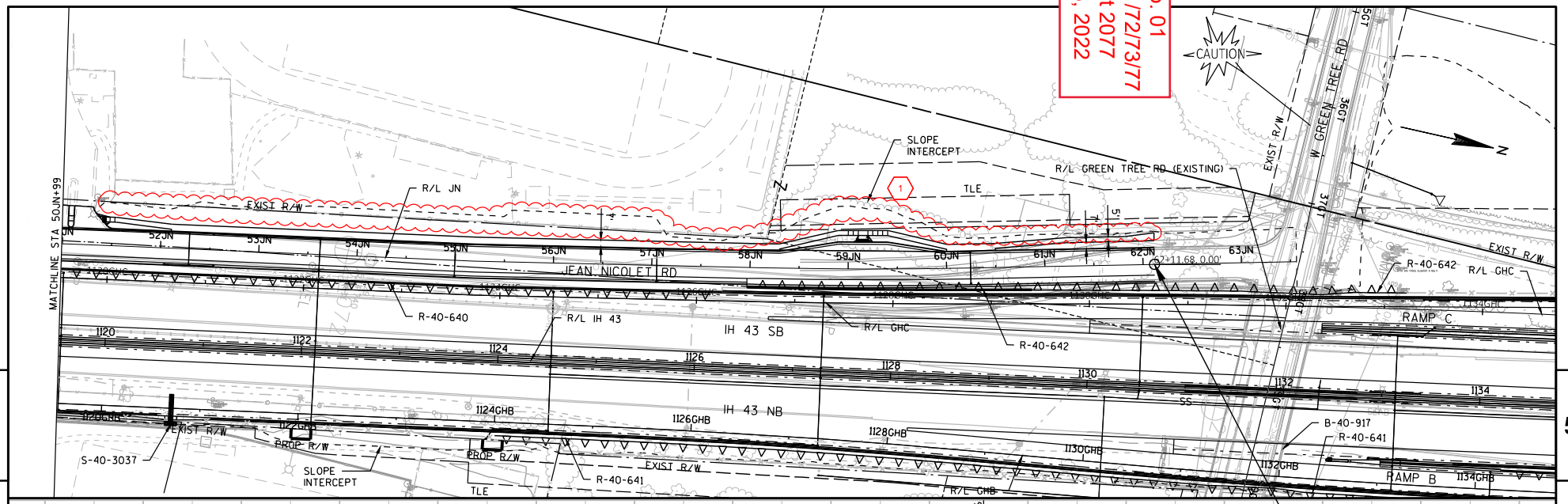


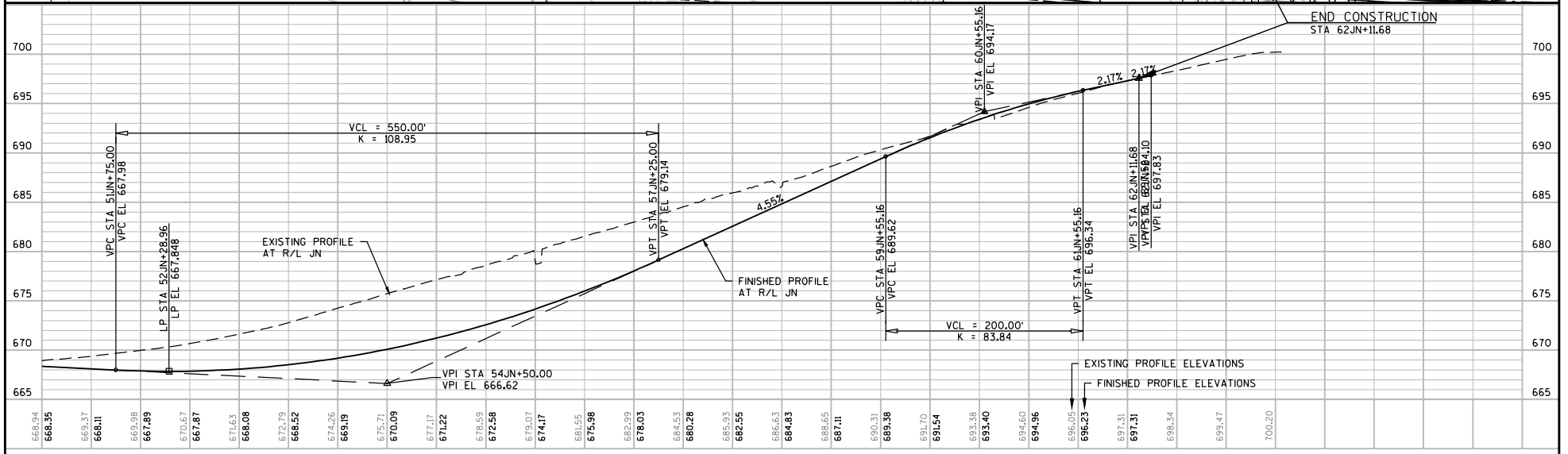
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN AND PROFILE: JEAN NICOLET RD	SHEET 2075	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256216\050301_PP JN GH.DWG PLOT DATE : 9/19/2022 3:18 PM PLOT BY : DAN BAUMANN PLOT NAME : PLOT SCALE : 1" = 100'_XREF

WISDOT/CADDS SHEET 44

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2077
September 23, 2022

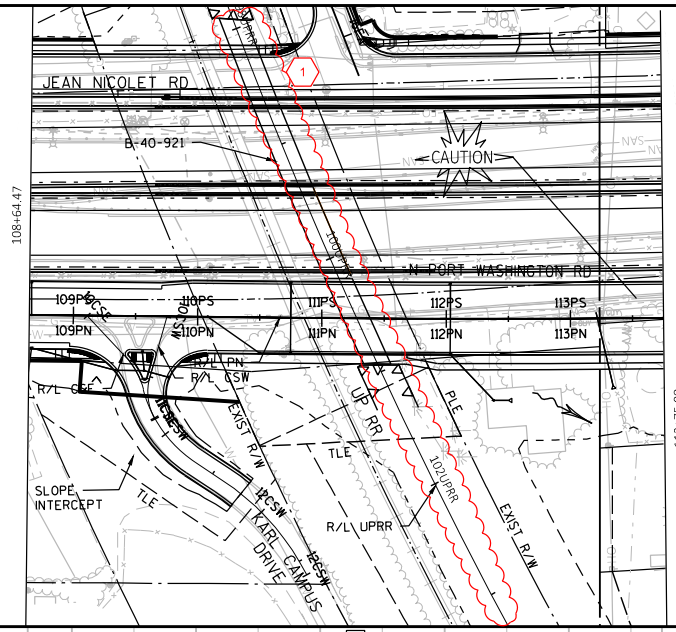


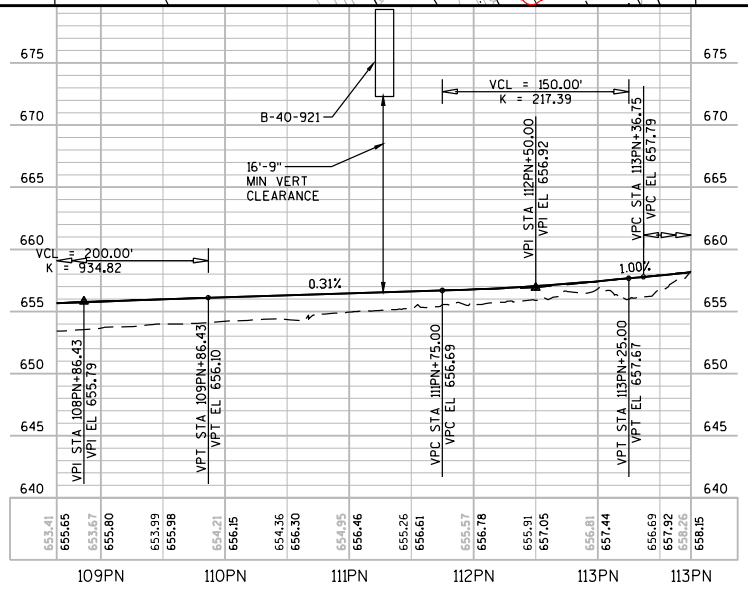


PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN AND PROFILE: JEAN NICOLET RD	SHEET 2077	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256216\050301_PP JN GH.DWG PLOT DATE : 9/19/2022 12:17 PM PLOT BY : DAN BAUMANN PLOT NAME : PLOT SCALE : 1" = 100'_XREF

WISDOT/CADDS SHEET 44





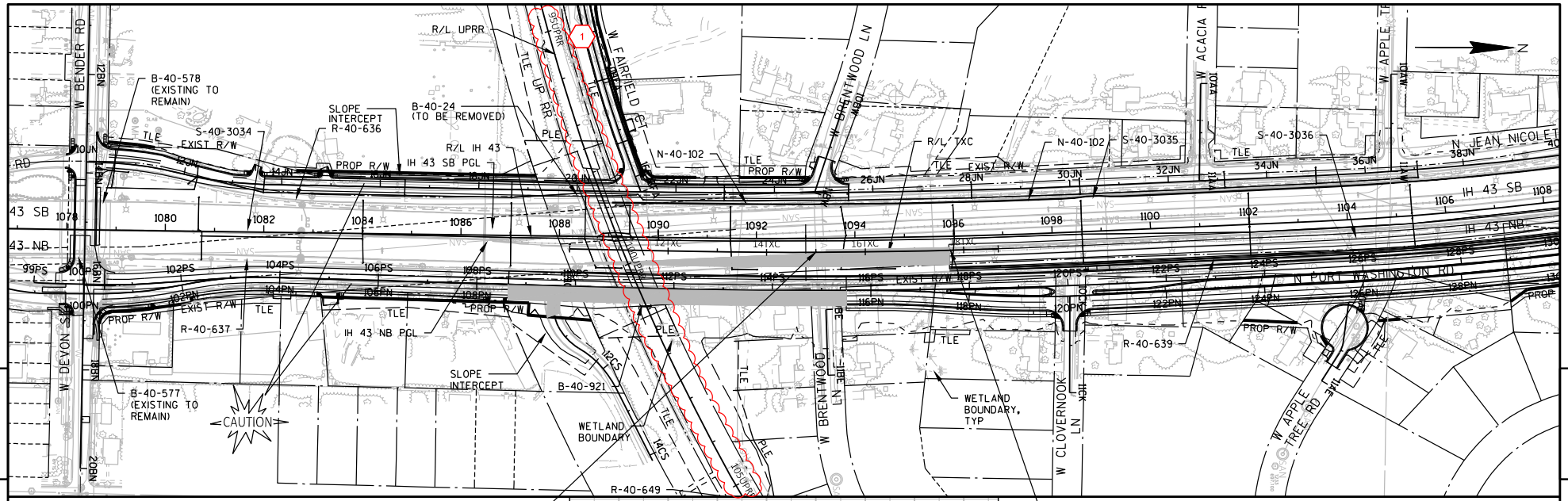
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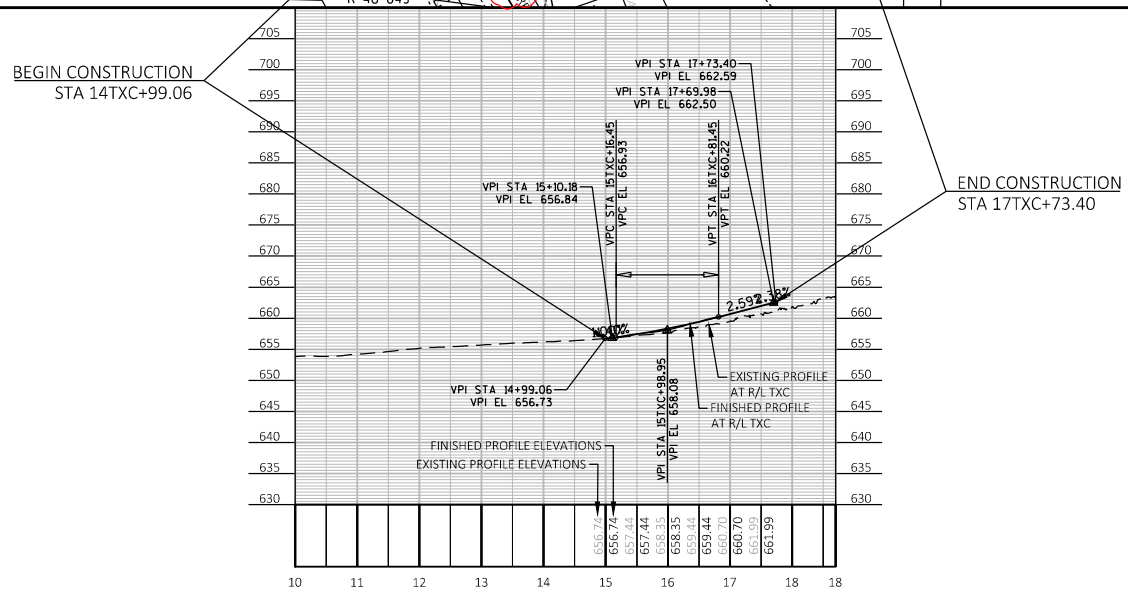
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Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2086
September 23, 2022

PROJECT NO: 1229-04-71	HWY: N PORT WASHINGTON RD	COUNTY: MILWAUKEE	PLAN AND PROFILE: PORT WASHINGTON RD - NB	SHEET 2086	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256192\050302_PP PN TEMP.DWG
LAYOUT NAME - 050127
PLOT DATE : 9/19/2022 4:57 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT

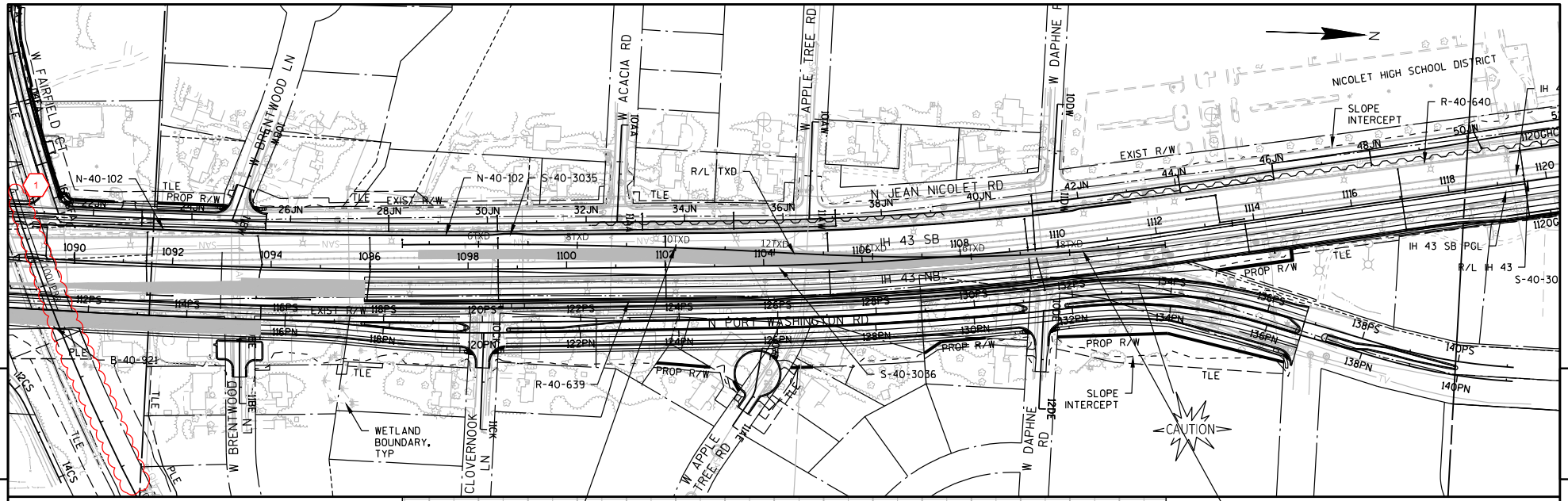


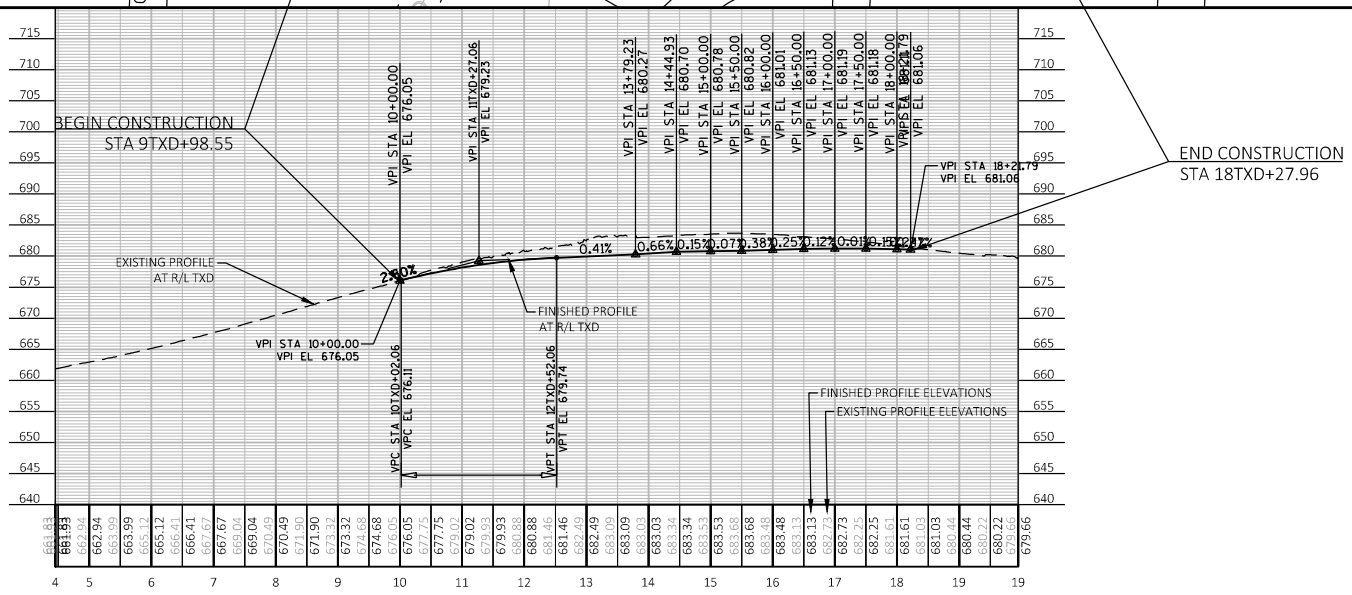


Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2101
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN AND PROFILE: TEMPORARY CROSSOVER - STAGE 2C	SHEET 2101	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256216\050401_PP TEMP.DWG
LAYOUT NAME : _001
PLOT DATE : 9/20/2022 2:54 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 44

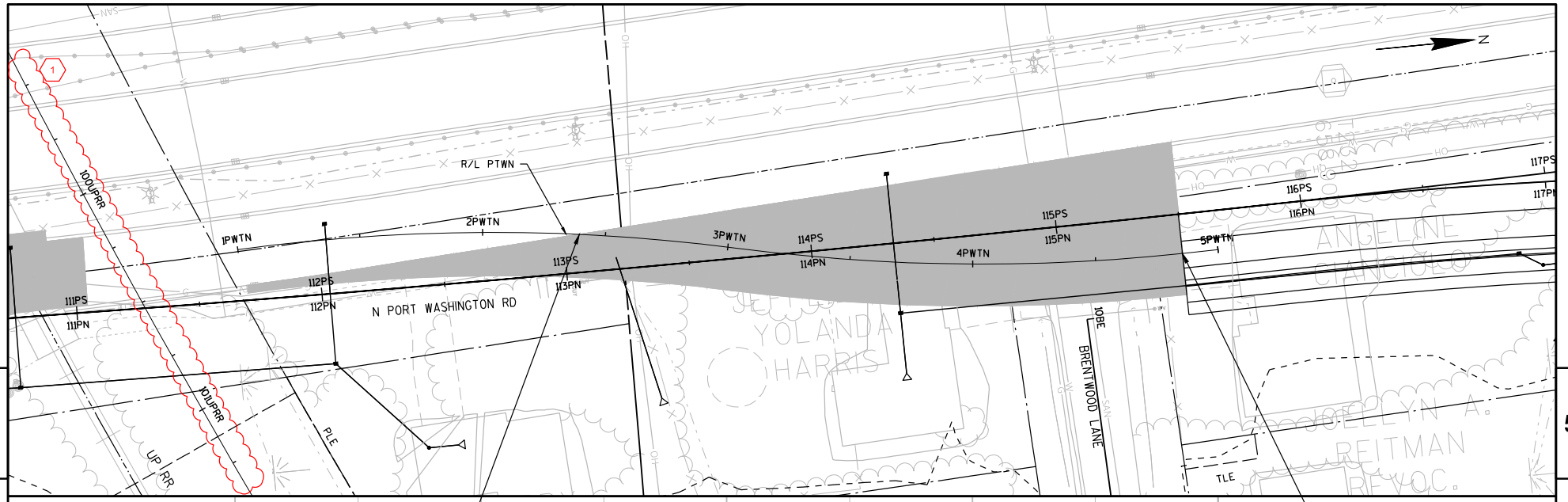


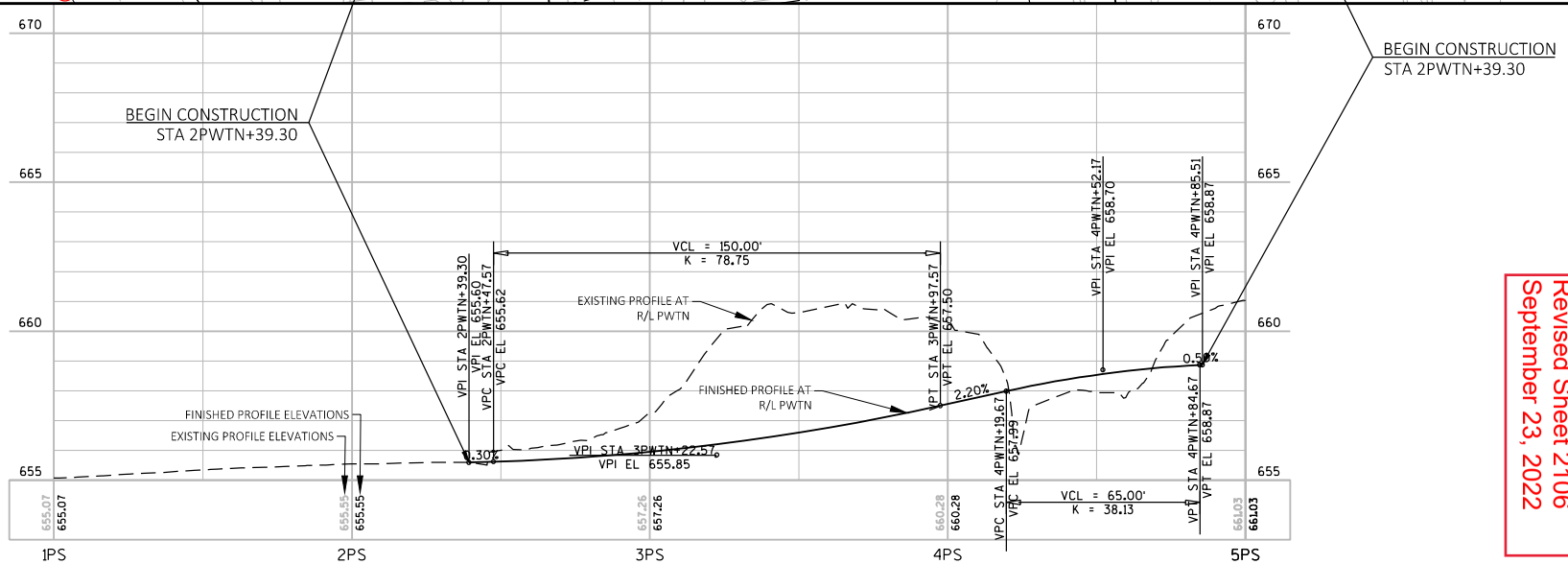


Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2102
September 23, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	PLAN AND PROFILE: TEMPORARY CROSSOVER - STAGE 2D	SHEET 2102	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256216\050402_PP TEMP.DWG
LAYOUT NAME : _001
PLOT DATE : 9/20/2022 2:48 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:200 FT





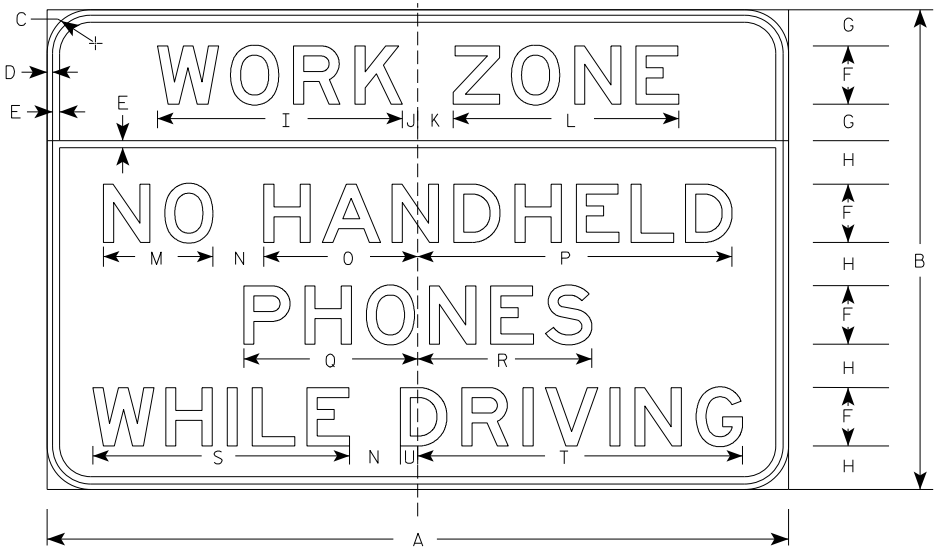
Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2106
September 23, 2022

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	PLAN AND PROFILE: PORT WASHINGTON ROAD - TEMPORARY STAGE 1A	SHEET 2106	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256216\050410_PP PWTN.DWG
LAYOUT NAME : _001
PLOT DATE : 9/20/2022 2:45 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

NOTES

1. Sign is Type II- Type H Reflective except as noted.
2. Color:
   Background - White except Work Zone panel is Fluorescent Orange Type F Reflective
   Message - Black
3. Message Series - E
4. Traffic mitigation contract required for signs to be included on project.
5. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



G20-68

Addendum No. 01
ID 1229-04-71/72/73/77
Added Sheet 2403A
September 23, 2022

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	78	48	3	5/8	3/4	6	3	4 1/2	24 7/8	2 3/8	4 1/4	23	11 1/4	6	15 1/2	32 3/4	18	18	26 1/2	33 7/8	1 3/8						26.0
2M	78	48	3	5/8	3/4	6	3	4 1/2	24 7/8	2 3/8	4 1/4	23	11 1/4	6	15 1/2	32 3/4	18	18	26 1/2	33 7/8	1 3/8						26.0
3	102	66	6	3/4	1	8	5	6	33 5/8	2 1/8	4 7/8	31	15	7	21 1/8	43 1/4	24	24	35 1/4	44 5/8	2 3/8						46.75
4	102	66	6	3/4	1	8	5	6	33 5/8	2 1/8	4 7/8	31	15	7	21 1/8	43 1/4	24	24	35 1/4	44 5/8	2 3/8						46.75
5	102	66	6	3/4	1	8	5	6	33 5/8	2 1/8	4 7/8	31	15	7	21 1/8	43 1/4	24	24	35 1/4	44 5/8	2 3/8						46.75

STANDARD SIGN
G20-68

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/10/19 PLATE NO. G20-68.1

PROJECT NO:

SHEET NO: 2403A E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\G2068.DGN PLOT DATE : 10-JUNE-2019 PLOT BY : dotc4c

WISDOT/CADDS SHEET 42

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER	W. APPR. SLAB	W. ABUT.	PIER 1	PIER 2	PIER 3	E. ABUT.	E. APPR. SLAB	TOTAL
203.0220.0008	REMOVING STRUCTURE B-40-24	EACH	-	-	-	-	-	-	-	-	1
206.1000.0008	EXCAVATION FOR STRUCTURES BRIDGES B-40-921	LS	-	-	-	-	-	-	-	-	1
501.1000.S	ICE HOT WEATHER CONCRETING	LB	-	90	2,150	910	900	920	2,220	90	7,280
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	-	-	268	-	-	-	298	-	566
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	-	1,700	187,530	5,310	5,310	5,310	207,800	1,700	414,660
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	-	-	55,970	24,080	24,370	25,030	56,510	-	185,960
505.0911	BAR COUPLERS NO. 11	EACH	-	-	84	-	-	-	84	-	168
506.0105	STRUCTURAL STEEL CARBON	LB	19,026	-	626	-	-	-	622	-	20,274
506.0605	STRUCTURAL STEEL HS	LB	1,177,900	-	-	-	-	-	-	-	1,177,900
506.3004	WELDED STUD SHEAR CONNECTORS 3/4X4-INCH	EACH	-	-	27	-	-	-	27	-	54
511.1200.0008	TEMPORARY SHORING B-40-921	SF	-	-	906	1,882	1,712	1,797	807	-	7,104
514.1000.0008	RAILROAD DECK DRAIN SYSTEM B-40-921	LS	-	-	-	-	-	-	-	-	1
514.2625	DOWNSPOUT 6-INCH	LF	-	-	53	35	35	34	-	-	157
516.0100	DAMPPROOFING	SY	-	-	168	-	-	-	168	-	336
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-	-	36	-	-	-	36	-	72
517.0600.0008	PAINTING EPOXY SYSTEM B-40-921	LS	1	-	-	-	-	-	-	-	1
550.0010	PRE-BORING UNCONSOLIDATED MATERIALS	LF	-	-	-	-	225	-	-	-	225
550.0500	PILE POINTS	EACH	-	-	-	15	15	15	-	-	45
612.0106	PIPE UNDERDRAIN 6-INCH	LF	-	-	225	-	-	-	240	-	465
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	-	-	60	-	-	-	60	-	120
SPV.0035.4020	CONCRETE MASONRY BRIDGES UPRR	CY	-	11.0	286.0	121.2	119.3	122.5	295.1	11.0	966
SPV.0060.4000	PILE DYNAMIC ANALYZER (PDA) TESTING	EACH	-	-	-	2	2	2	-	-	6
SPV.0060.4001	PILE DYNAMIC ANALYZER (PDA) RESTRIKES	EACH	-	-	-	2	2	2	-	-	6
SPV.0060.4002	CASE PILE WAVE ANALYSIS PROGRAM (CAP/WAP) EVALUATION	EACH	-	-	-	1	1	1	-	-	3
SPV.0060.4015	BEARING ASSEMBLIES FIXED UPRR B-40-921	EACH	-	-	5	5	-	5	5	-	20
SPV.0060.4016	BEARING ASSEMBLIES EXPANSION UPRR B-40-921	EACH	-	-	-	5	10	5	-	-	20
SPV.0060.4020	CROSSHOLE SONIC LOG (CSL) TESTING, WALL SECANT PILE 59.06-INCH	EACH	-	-	21	-	-	-	21	-	42
SPV.0060.4025	THERMAL INTEGRITY PROFILER (TIP) TESTING, WALL SECANT PILE 59.06-INCH	EACH	-	-	21	-	-	-	21	-	42
SPV.0060.4031	TRIAL WALL PANEL SECANT PILE 59.06-INCH UPRR	EACH	-	-	-	-	-	-	-	-	1
SPV.0060.4040	TRACK, SHORING AND EXISTING STRUCTURE MONITORING UPRR	EACH	-	-	-	-	-	-	-	-	1
SPV.0060.4070	BAR COUPLERS NO. 14	EACH	-	-	273	-	-	-	273	-	546
SPV.0075.4000	OBSTRUCTIONS WALL SECANT PILE	HRS	-	-	12	-	-	-	12	-	24
SPV.0090.4000	PILING STEEL HP 14-INCH X 89 LB	LF	-	-	-	1,425	1,425	1,425	-	-	4,275
SPV.0090.4006	WALL SECANT PILE 59.06-INCH UPRR	LF	-	-	1,491	-	-	-	1,659	-	3,150
SPV.0090.4010	HANDRAIL B-40-921	LF	619	-	95	-	-	-	110	-	824
SPV.0165.4000	TEMPORARY SHORING RAILROAD	SF	-	-	1,200	-	-	-	1,455	-	2,655
SPV.0165.4005	PRECAST CONCRETE MODULAR WINGWALL	SF	-	-	114	-	-	-	296	-	410
SPV.0165.4010	GEOCOMPOSITE WALL DRAIN	SF	-	-	210	-	-	-	270	-	480
SPV.0180.4000	MEMBRANE WATERPROOFING UPRR	SY	813	29	-	-	-	-	-	28	870
SPV.0180.4005	GEOTEXTILE TYPE DF UPRR	SY	-	-	188	-	-	-	200	-	388
SPV.0180.4006	GEOTEXTILE TYPE SAS UPRR	SY	-	-	207	-	-	-	286	-	493
SPV.0195.4000	BASE AGGREGATE OPEN GRADED SPECIAL	TON	-	-	590	-	-	-	810	-	1,400
SPV.0195.4005	EXCAVATION,HAULING, AND DISPOSAL OF SOLID WASTE SOIL	TON	-	-	2,990	-	-	-	2,850	-	5,840
	NON-BID ITEM										
	NAME PLATE	EACH									1
	BRIDGE SEAT PROTECTION	LS									1
	PREFORMED JOINT FILLER	SIZE									3/4", 1 1/2", 2"
	EXPANDED POLYSTYRENE	SIZE									1"
	NON-BITUMINOUS JOINT SEALER	SIZE									3/4", 1 1/2", 2"

ALL ITEMS ARE CATEGORY 2070

DESIGN DATA

DESIGN SPECIFICATIONS:
- UPRR-BNSF GUIDELINES FOR RAILROAD GRADE SEPARATION PROJECTS ("UPRR GUIDELINES")
- 2021 AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION (AREMA) MANUAL FOR RAILWAY ENGINEERING
  - CHAPTER 8 CONCRETE STRUCTURES AND FOUNDATIONS
  - CHAPTER 9 SEISMIC DESIGN FOR RAILWAY STRUCTURES
  - CHAPTER 15 STEEL STRUCTURES

DEAD LOADS:
- 2'-6" MAX. DEPTH OF BALLAST (FROM TOP OF WOOD TIE TO TOP OF STEEL DECK)
- (THESE PLANS WERE PREPARED ASSUMING 13" MIN. BALLAST UNDER WOOD TIES.)

LIVE LOADS:
- COOPER E-80 (OR ALTERNATE LIVE LOAD) PER AREMA
- ℄ TRACK LOCATED WITHIN 1.225" OF ℞ BRIDGE
- FULL DIESEL IMPACT (ROLLING EQUIPMENT WITHOUT HAMMER BLOW)
- PLUS ROCKING EFFECT PER AREMA

WIND LOADS ON UNLOADED AND LOADED BRIDGE:
- PER AREMA

LONGITUDINAL FORCES:
- PER AREMA

MATERIAL PROPERTIES:

CONCRETE MASONRY (28 DAYS):	f'c = 4,000 PSI
DRILLED SHAFTS: ABUTMENTS (WALL SECANT PILE)	f'c = 4,000 PSI
BAR STEEL REINFORCEMENT, ASTM A615 OR A706 GRADE 60	fy = 60,000 PSI
PILING STEEL (ASTM 572 GR. 50)	fy = 50,000 PSI
STRUCTURAL CARBON STEEL (ASTM A709 GR. 36)	fy = 36,000 PSI
STRUCTURAL CARBON STEEL (ASTM A53 GRADE B)	fy = 35,000 PSI

MATERIAL PROPERTIES, CONT'D.:

HIGH STRENGTH STRUCTURAL STEEL (ASTM A709 GR 50)	fy = 50,000 PSI
HIGH STRENGTH STRUCTURAL STEEL (ASTM A588, <4" THK.)	fy = 50,000 PSI
HIGH STRENGTH STRUCTURAL STEEL (ASTM A588, >4" THK.)	fy = 46,000 PSI
HIGH STRENGTH BOLTS (ASTM F3125 GR. A325 & GR. F1852)	fu = 120,000 PSI
HIGH STRENGTH ANCHOR RODS/BOLTS (ASTM F1554 GR. 105)	fy = 105,000 PSI
HIGH STRENGTH STRUCTURAL STEEL (ASTM A108 GR. 1010 THRU 1020):	
TENSILE STRENGTH	fu = 60,000 PSI
ELONGATION (MIN.)	20% IN 2"
REDUCTION OF AREA (MIN.)	50%

STRUCTURAL STEEL

MATERIAL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PLATE GIRDER BOTTOM FLANGES AND WEBS	ASTM A709 GR. 50W F2
PLATE GIRDER TOP FLANGES, STIFFENERS, BRACKETS & DIAPHRAGMS	ASTM A709 GR. 50W
DECK PLATE	ASTM A709 GR. 50W T2
BEARING MATERIAL (OTHER THAN PINTLES & BRONZE PLATE)	ASTM A588
BEARING PINTLES	ASTM A276 TYPE 410 ANNEALED
SELF-LUBRICATING BRONZE PLATE	ASTM B22, ALLOY C91100
ALL REMAINING STEEL	ASTM A588
BOLTS UNLESS NOTED OTHERWISE	ASTM F3125 GR. A325 TYPE 3
BOLTS FOR DECK AND RETAINER PLATES	ASTM F3125 GR. F1852 TYPE 3
THREADED HEADED STUDS	ASTM A108 GR. 1010 THRU 1020
ANCHOR RODS/BOLTS	ASTM F1554 GR. 105, GALV.
HARDENED FLAT WASHERS	ASTM F436, GALV.
DRAIN PIPE	ASTM A53 GRADE B, GALV.
W36 RETAINERS	ASTM A588
COVER PLATES	ASTM A709 GR. 50 T2, GALV.
HANDRAIL ANGLES	ASTM A709 GR. 36, GALV.
PILING STEEL	ASTM A572 GR. 50

HORIZONTAL CURVE DATA

℞ UPRR		℞ JN		℞ PN		TANGENT ℞ ML43
P.I. =	105UPRR+05.09	P.I. =	25JN+61.60	P.I. =	113PN+36.90	N 0°32'40" E
Δ =	56°19'45" LT.	Δ =	3°45'35"	Δ =	2°07'56"	
D =	1°23'52"	D =	0°22'19"	D =	0°25'10"	
T =	2194.70'	T =	505.47'	T =	254.20'	
L =	4030.02'	L =	1010.57'	L =	508.34'	
R =	4099.16'	R =	15400.00'	R =	13660.00'	
S.C. =	83UPRR+10.39	P.C. =	20JN+56.13	P.C. =	110PN+82.70	
C.S. =	123UPRR+40.31	P.T. =	30JN+66.70	P.T. =	115PN+91.04	
S/L =	100.00'					

TRAFFIC VOLUME

I.H. 43	JEAN NICOLET RD.	PORT WASHINGTON RD.
A.D.T. = 111,700 (2045)	A.D.T. = 1,500 (2019)	A.D.T. = 11,300 (2045)
R.D.S. = 70 M.P.H.	R.D.S. = 40 M.P.H.	R.D.S. = 40 M.P.H.

FOUNDATION DATA

ABUTMENTS AND WINGWALLS TO BE SUPPORTED ON 59.06" DIA. SECANT PILES.

PRECAST CONCRETE MODULAR WINGWALL TO BE SUPPORTED ON SUBGRADE WITH AN ALLOWABLE BEARING PRESSURE OF 3,000 PSF.

MINIMUM STEM LENGTH SHOWN ON "WINGWALL & BACKFILL DETAILS" SHEET SATISFIES BOTH GLOBAL AND INTERNAL STABILITY ANALYSES INDICATED IN THE GEOTECHNICAL REPORT.

CSL TUBES SHALL CONFORM TO THE FOLLOWING MATERIAL REQUIREMENTS:
- STEEL _____ ASTM A53, GR. B

PIERS TO BE SUPPORTED ON HP14X89 STEEL PILING WITH AN ULTIMATE BEARING CAPACITY OF 372 TONS/PILE (135 TONS UPLIFT/PILE)**. PILE POINTS ARE REQUIRED. ESTIMATED LENGTH OF PILES IS 95 FEET AT ALL PIERS (58 FEET MIN. EMBED. DRIVEN BELOW BOTTOM OF FOOTING ELEVATION). USE THE PDA/CAPWAP METHOD TO DETERMINE DRIVEN PILE CAPACITY.

**THE ALLOWABLE BEARING CAPACITY OF PILES IN COMPRESSION USED FOR DESIGN IS THE ULTIMATE BEARING CAPACITY DIVIDED BY A FACTOR OF SAFETY OF 2.25 USING THE PDA/CAPWAP METHOD TO DETERMINE DRIVEN PILE CAPACITY. THE ALLOWABLE BEARING CAPACITY OF PILES IN UPLIFT USED FOR DESIGN IS THE ULTIMATE BEARING CAPACITY IN UPLIFT DIVIDED BY A FACTOR OF SAFETY OF 3.0 USING THE PDA/CAPWAP METHOD TO DETERMINE DRIVEN PILE CAPACITY.

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2628
September 23, 2022

STATE PROJECT NUMBER
1229-04-72

SDR
09/13/22

WISCONSIN
JAMES W. CHRISTIAN III
E-36166
09/13/2022
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY
1	9/22/22	REBAR DTLS	JWCIII

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-921

SHORELINE SUB. M.P. 104.04
LAT. 43°7'56"N/LONG. 87°54'50"W

DRAWN BY CVH | PLANS CK'D. JWCIII

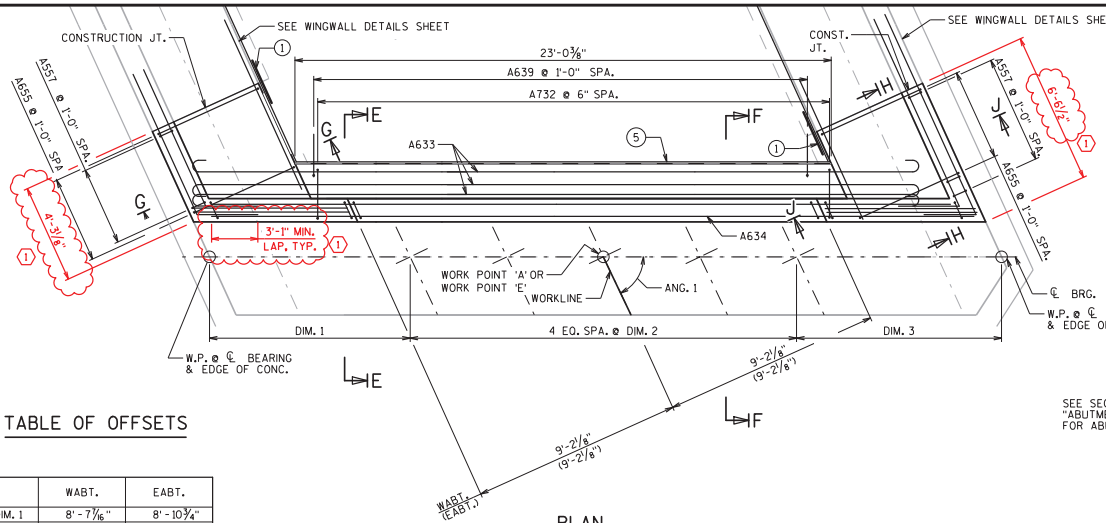
QUANTITIES & DESIGN DATA

SHEET 5 OF 56

2628

STATE PROJECT NUMBER

1229-04-72

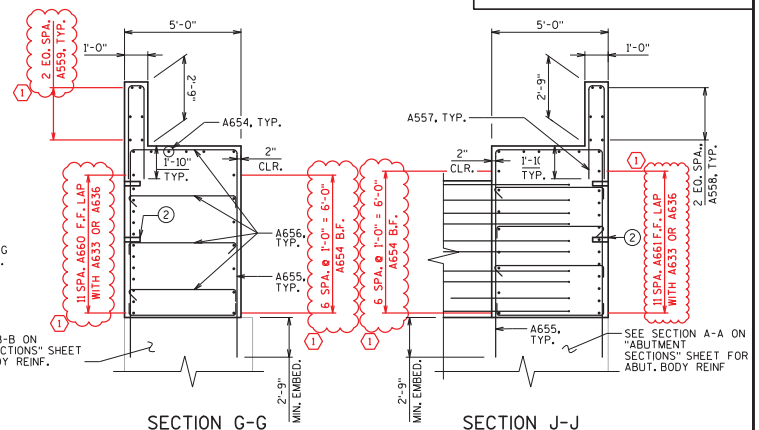


PLAN

ABUTMENT BODY AND WINGWALL REINFORCING AND APPROACH SLAB NOT SHOWN FOR CLARITY

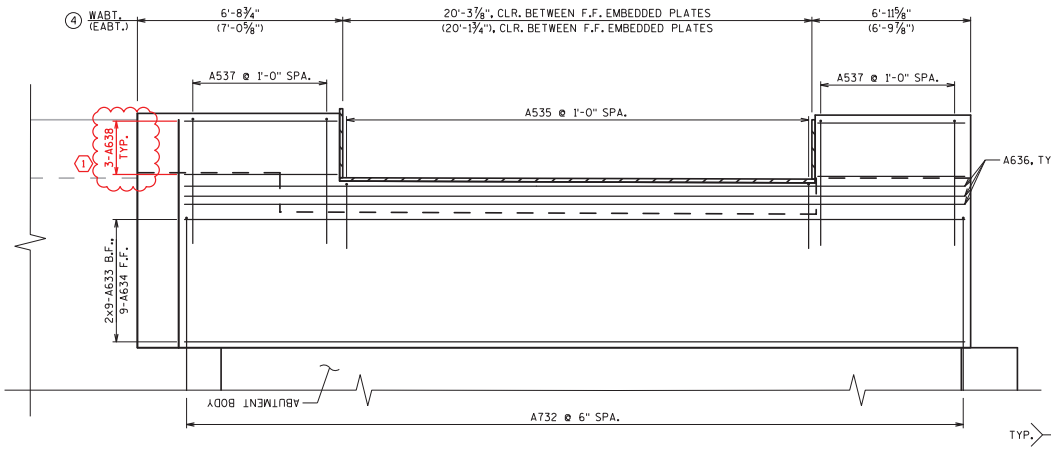
TABLE OF OFFSETS

	WABT.	EABT.
DIM. 1	8' - 7 7/16"	8' - 10 3/4"
DIM. 2	4' - 1 15/16"	4' - 1 3/8"
DIM. 3	8' - 9 11/16"	8' - 8 1/16"
ANG. 1	64°37'42"	65°40'41"



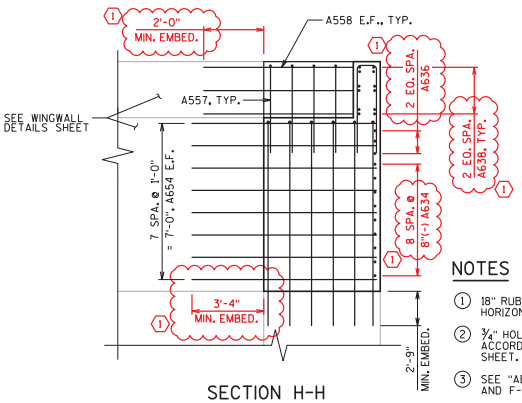
SECTION G-G

SECTION J-J



ELEVATION

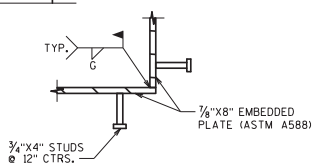
ABUTMENT BODY AND SHAFT NOT SHOWN FOR CLARITY



SECTION H-H

NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
2. 3/4" HOLE FOR CONCRETE FACING ANCHOR. INSTALL ACCORDING TO DETAIL ON ABUTMENT BILL OF BARS SHEET. SEE CONCRETE FACING SHEETS FOR LOCATION.
3. SEE "ABUTMENT SECTIONS" SHEET FOR SECTIONS E-E AND F-F.
4. MEASURED ALONG FRONT FACE OF BACKWALL.
5. DAMPPROOFING. SEAL ENTIRE BACKFACE OF CIP ABUTMENTS & CIP WINGWALLS.



TYPICAL PLATE DETAILS

SDR 09/13/22

WISCONSIN JAMES W. CHRISTIAN E-36165 09/13/2022 MILWAUKEE, WIS. PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY
1	9/22/22	REBAR DTLS	JWCIII

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-921

SHORELINE SUB. M.P. 104.04
LAT. 43°7'56"N/LONG. 87°54'50"W

DRAWN BY JES | PLANS CK'D. JWCIII

ABUTMENT BACKWALL DETAILS

SHEET 22 OF 56

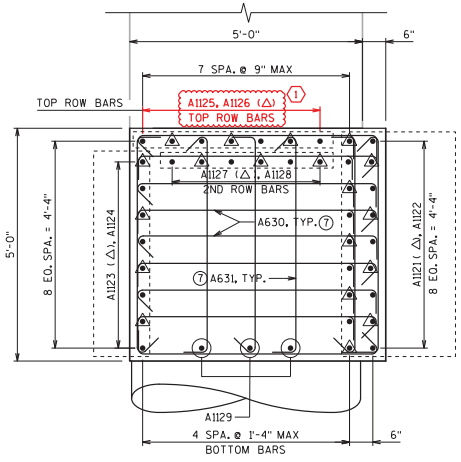
2645

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2645
September 23, 2022

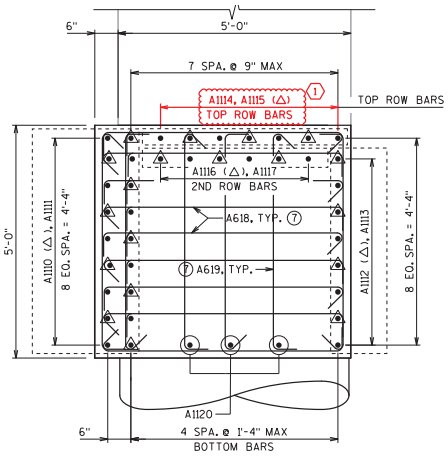
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PLOT DATE : 9/12/2022 9:35:40 PM PLOT BY : cvhayden PLOT SCALE : 0.166667:1

STATE PROJECT NUMBER

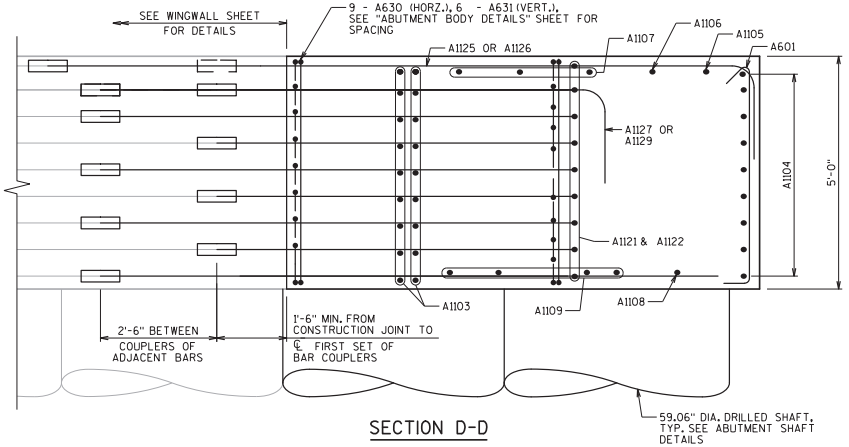
1229-04-72



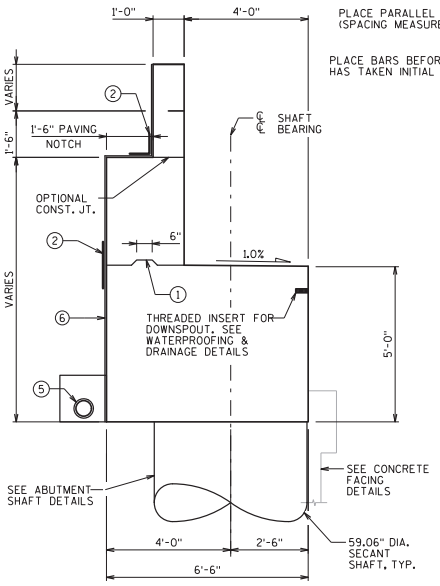
SECTION B-B



SECTION A-A

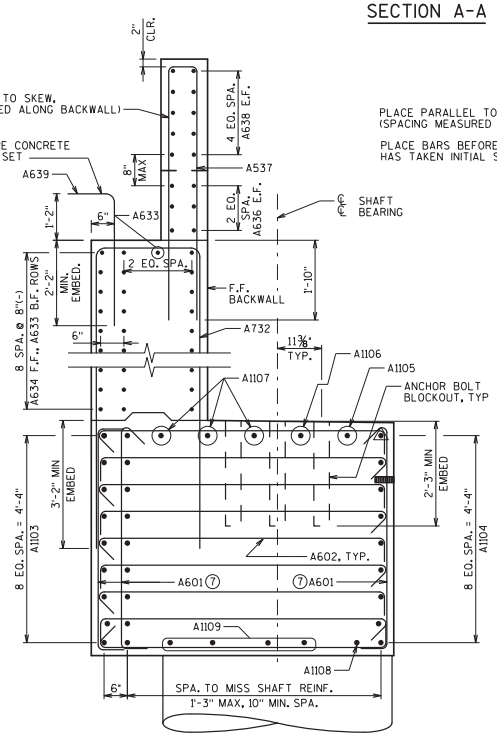


SECTION D-D

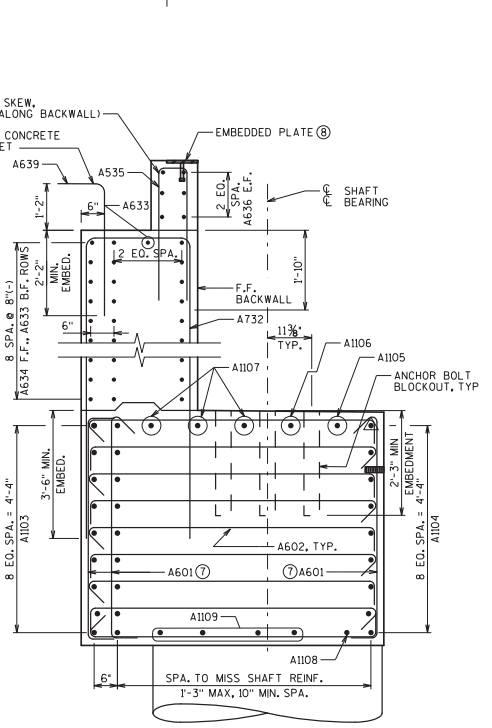


SECTIONS E-E & F-F

REINFORCEMENT NOT SHOWN



SECTION E-E



SECTION F-F

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2646
September 23, 2022

NOTES

1. 3" DEEP KEYED CONST. JOINT (BEVELED 1 HORZ.: 4 VERT.)
2. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
3. FOR LOCATION OF SECTIONS A-A, B-B, D-D SEE "ABUTMENT BODY DETAILS" SHEET.
4. FOR LOCATION OF SECTIONS E-E AND F-F, SEE "ABUTMENT BODY DETAILS" & "ABUTMENT BACKWALL DETAILS" SHEETS.
5. 6" DIA. PERFORATED CMP. SEE ABUTMENT PLAN & ELEVATION SHEETS.
6. DAMPPROOFING. SEAL ENTIRE BACKFACE OF CIP ABUTMENTS & CIP WINGWALLS.
7. ALTERNATE TIES HORIZONTALLY, VERTICALLY & LONGITUDINALLY.
8. SEE "WATERPROOFING DETAILS" SHEET FOR EMBEDDED PLATE INFORMATION.

SDR
09/13/22

NO.	DATE	REVISION	BY
1	9/22/22	REBAR DTLS	JWCIII

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-921

SHORELINE SUB. M.P. 104.04
LAT. 43°7'56"N/LONG. 87°54'50"W

DRAWN BY JES | PLANS CK'D. JWCIII

ABUTMENT SECTIONS

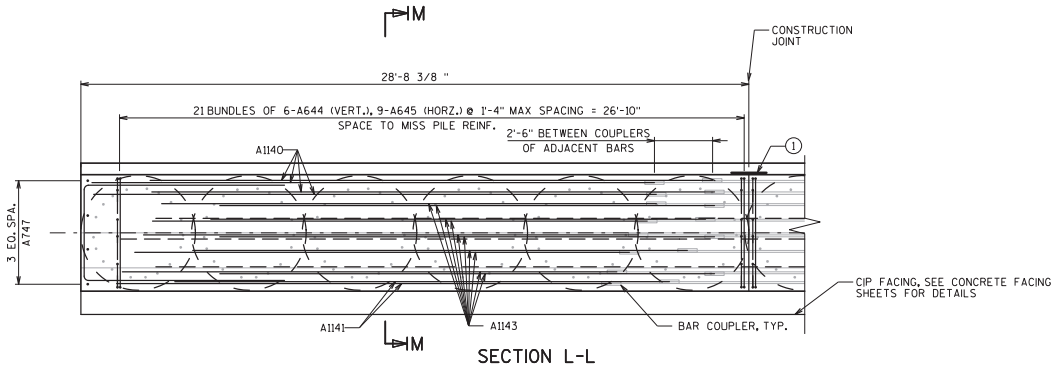
SHEET 23 OF 56

2646

WISCONSIN — JAMES W. CHERRY III — E-36165 — 09/13/2022 — MILWAUKEE, WIS. — PROFESSIONAL ENGINEER

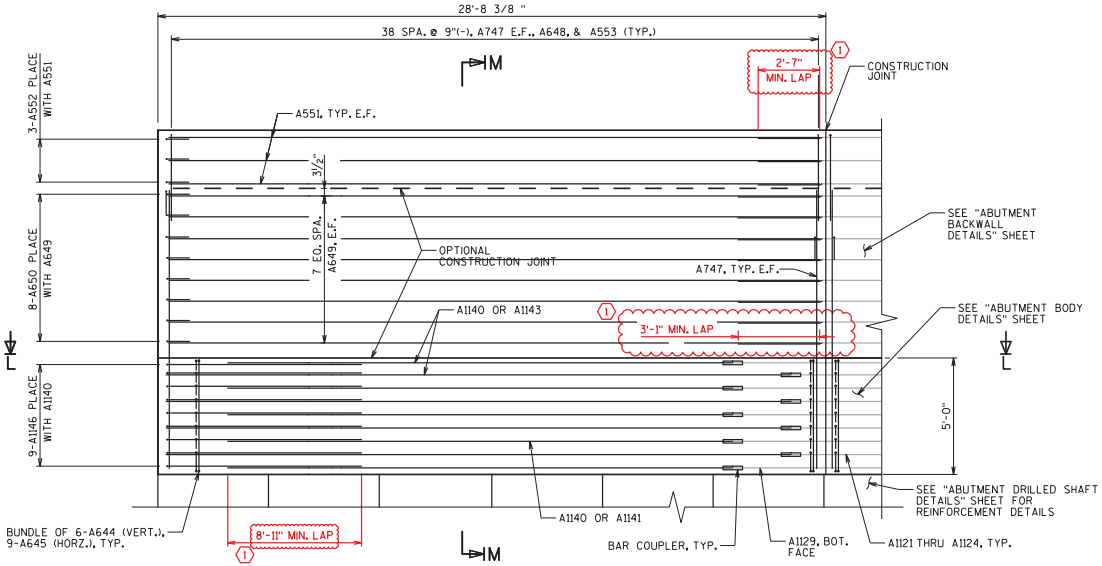
STATE PROJECT NUMBER

1229-04-72



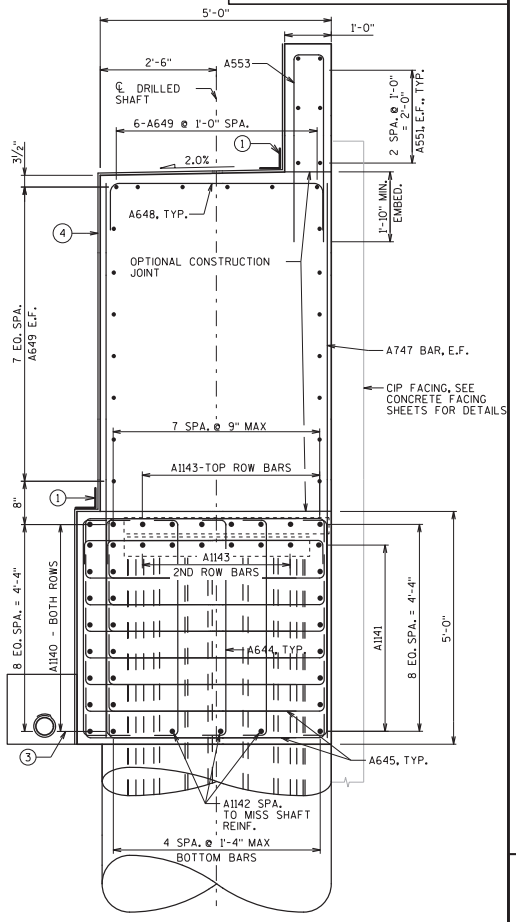
SECTION L-L

WEEPHOLES NOT SHOWN FOR CLARITY



ELEVATION

WING 4 SHOWN, OTHERS SIMILAR



SECTION M-M

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2647
September 23, 2022

NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
2. ¾" HOLE FOR CONCRETE FACING ANCHOR. INSTALL ACCORDING TO DETAIL ON "ABUTMENT BILL OF BARS" SHEET. SEE CONCRETE FACING SHEETS FOR LOCATION.
3. 6" DIA. PERFORATED CMP. SEE ABUTMENT PLAN & ELEVATION SHEETS.
4. DAMPPROOFING. SEAL ENTIRE BACKFACE OF CIP ABUTMENT & CIP WINGWALLS.

SDR
09/13/22

WISCONSIN
JAMES W. CHRISTIANSEN
E-36165
09/13/2022
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY
1	9/22/22	REBAR DTLS	JWCIII

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-921

SHORELINE SUB. M.P. 104.04
LAT. 43°7'56"N/LONG. 87°54'50"W

DRAWN BY JES | PLANS CK'D. JWCIII

WINGWALL DETAILS

SHEET 24 OF 56

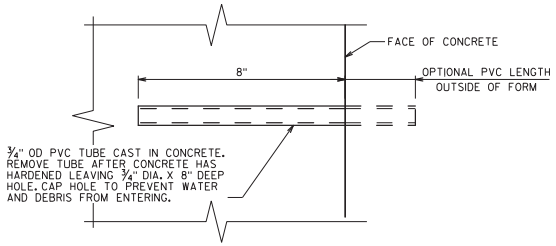
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8

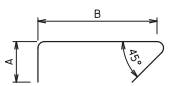
STATE PROJECT NUMBER

1229-04-72

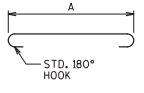


NOTE: TO REMOVE PVC TUBE, DO NOT USE ANY METHOD OF DRILLING THAT COULD DAMAGE WING WALL REINFORCEMENT. NO CORE DRILLING ALLOWED.

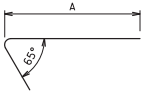
ANCHOR HOLE DETAIL



BAR MARK	A	B
A601	1'-0"	4'-7"
A602	1'-0"	6'-2"
A618	1'-0"	5'-2"
A619	1'-0"	4'-7"
A630	1'-0"	5'-2"
A631	1'-0"	4'-7"
A644	1'-0"	4'-7"
A645	1'-0"	5'-2"
A656	1'-0"	4'-8"



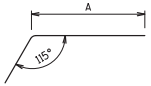
BAR MARK	A
A1103	30'-4"
A633	31'-2"



BAR MARK	A
A1110	8'-8"
A1111	11'-3"
① A558	9'-3"
A661	9'-9"



BAR MARK	A	B
A1105	32'-0"	2'-0"
A1106	33'-1"	2'-0"
A1107	33'-3"	2'-0"
A732	2'-2"	9'-3"
A535	8"	3'-0"
A537	8"	6'-0"
A1146	5'-2"	12'-6"
A648	4'-8"	1'-8"
A650	4'-8"	1'-0"
A552	6"	1'-0"
A553	8"	4'-5"
A655	4'-8"	10'-1"
A557	8"	4'-5"



BAR MARK	A
A1112	10'-0"
A1113	12'-6"
A1121	10'-10"
A1122	13'-4"
A1123	11'-6"
A1124	9'-0"
① A559	7'-0"
A660	7'-6"



BAR MARK	A
A1114	2'-0"
A1115	2'-0"
A1116	2'-0"
A1117	2'-0"
A1125	2'-0"
A1126	2'-0"
A1127	2'-0"
A1128	2'-0"
A639	1'-0"

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2648
September 23, 2022

BILL OF BARS - ABUTMENT

BAR MARK	COAT	NO. REQ'D. W. ABUT.	NO. REQ'D. E. ABUT.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
A601	X	81	81	6'-3"	X		ABUT. BODY - VERT. TIE
A602	X	189	189	7'-10"	X		ABUT. BODY - HORZ. TIE
A1103	X	18	18	33'-6"	X		ABUT. BODY - LONG. - BACK FACE
A1104	X	9	9	31'-6"			ABUT. BODY - LONG. - FRONT FACE
A1105	X	1	1	36'-0"	X		ABUT. BODY - LONG. - TOP FACE
A1106	X	1	1	37'-1"	X		ABUT. BODY - LONG. - TOP FACE
A1107	X	3	3	37'-3"	X		ABUT. BODY - LONG. - TOP FACE
A1108	X	1	1	32'-1"			ABUT. BODY - LONG. - BOTTOM FACE
A1109	X	4	4	33'-3"			ABUT. BODY - LONG. - BOTTOM FACE
A1110	X	9	9	10'-4"	X		ABUT. BODY - ACUTE CORNER - INSIDE FACE - SHORT
A1111	X	9	9	12'-11"	X		ABUT. BODY - ACUTE CORNER - INSIDE FACE - LONG
A1112	X	4	4	11'-8"	X		ABUT. BODY - ACUTE CORNER - OUTSIDE FACE - SHORT
A1113	X	4	4	14'-2"	X		ABUT. BODY - ACUTE CORNER - OUTSIDE FACE - LONG
A1114	X	4	4	16'-2"	X		ABUT. BODY - ACUTE CORNER - TOP ROW - LONG
A1115	X	3	3	13'-8"	X		ABUT. BODY - ACUTE CORNER - TOP ROW - SHORT
A1116	X	3	3	10'-2"	X		ABUT. BODY - ACUTE CORNER - 2ND ROW - SHORT
A1117	X	3	3	12'-8"	X		ABUT. BODY - ACUTE CORNER - 2ND ROW - LONG
A618	X	63	63	6'-10"	X		ABUT. BODY - ACUTE CORNER - HORIZ. TIE
A619	X	42	42	6'-3"	X		ABUT. BODY - ACUTE CORNER - VERT. TIE
A1120	X	3	3	11'-2"			ABUT. BODY - ACUTE CORNER - LONG. - BOTTOM FACE
A1121	X	9	9	14'-10"	X		ABUT. BODY - OBTUSE CORNER - INSIDE FACE - SHORT
A1122	X	9	9	17'-4"	X		ABUT. BODY - OBTUSE CORNER - INSIDE FACE - LONG
A1123	X	4	4	14'-8"	X		ABUT. BODY - OBTUSE CORNER - OUTSIDE FACE - LONG
A1124	X	4	4	12'-2"	X		ABUT. BODY - OBTUSE CORNER - OUTSIDE FACE - SHORT
A1125	X	4	4	17'-8"	X		ABUT. BODY - OBTUSE CORNER - TOP ROW - LONG
A1126	X	3	3	14'-0"	X		ABUT. BODY - OBTUSE CORNER - TOP ROW - SHORT
A1127	X	3	3	10'-0"	X		ABUT. BODY - OBTUSE CORNER - 2ND ROW - SHORT
A1128	X	3	3	12'-4"	X		ABUT. BODY - OBTUSE CORNER - 2ND ROW - LONG
A1129	X	3	3	11'-6"			ABUT. BODY - OBTUSE CORNER - LONG. - BOTTOM FACE
A630	X	81	81	6'-10"	X		ABUT. BODY - OBTUSE CORNER - HORIZ. TIE
A631	X	54	54	6'-3"	X		ABUT. BODY - OBTUSE CORNER - VERT. TIE
A732	X	45	45	20'-8"	X		BACKWALL - LOWER SECTION - VERT. TIE
A633	X	19	19	32'-6"	X		BACKWALL - LOWER SECTION - BACK FACE - HORIZ.
A634	X	9	9	33'-6"			BACKWALL - LOWER SECTION - FRONT FACE - HORIZ.
A535	X	21	21	6'-8"	X		BACKWALL - UPPER SECTION - VERT. TIE
A636	X	6	6	33'-6"			BACKWALL - UPPER SECTION - HORIZ.
A537	X	14	14	12'-8"	X		BACKWALL - UPPER SECTION - VERT. TIE
A638	X	10	10	6'-5"			BACKWALL - UPPER SECTION - HORIZ.
A639	X	22	22	4'-4"	X		BACKWALL - APPROACH TIE
A1140	X	36	36	24'-2"			WING - LOWER SECTION - BACK FACE - HORIZ.
A1141	X	16	16	21'-3"			WING - LOWER SECTION - FRONT FACE - HORIZ.
A1142	X	6	6	24'-3"			WING - LOWER SECTION - BOTTOM - HORIZ.
A1143	X	26	26	21'-3"			WING - LOWER SECTION - HORIZ.
A644	X	252	252	6'-3"	X		WING - LOWER SECTION - VERT. TIE
A645	X	378	378	6'-10"	X		WING - LOWER SECTION - HORIZ. TIE
A1146	X	18	18	30'-2"	X		WING - LOWER SECTION - HORIZ. AT END
A747	X	160	160	12'-0"			WING - UPPER SECTION - VERT.
A648	X	78	78	8'-0"	X		WING - UPPER SECTION - TRANS.
A649	X	40	40	28'-4"			WING - UPPER SECTION - LONG.
A650	X	16	16	6'-8"	X		WING - UPPER SECTION - HORIZ. AT END
A551	X	12	12	28'-4"			WING - UPPER SECTION - LONG.
A552	X	6	6	2'-6"	X		WING - UPPER SECTION - HORIZ. AT END
A553	X	78	78	9'-6"	X		WING - UPPER SECTION - VERT.
① A654	X	26	26	9'-2"			BACKWALL - UPPER SECTION CORNER - LONG.
A655	X	12	12	24'-10"	X		BACKWALL - UPPER SECTION CORNER - VERT.
A656	X	48	48	6'-4"	X		BACKWALL - UPPER SECTION CORNER - HORIZ. TIE
A557	X	12	12	9'-6"	X		BACKWALL - UPPER SECTION CORNER - VERT.
A558	X	6	6	12'-7"	X		BACKWALL - UPPER SECTION ACUTE CORNER - HORIZ.
A559	X	6	6	10'-4"	X		BACKWALL - UPPER SECTION OBTUSE CORNER - HORIZ.
A660	X	12	12	10'-10"	X		BACKWALL - UPPER SECTION OBTUSE CORNER - HORIZ.
A661	X	12	12	13'-1"	X		BACKWALL - UPPER SECTION ACUTE CORNER - HORIZ.

① 9/22/22 REBAR DTLS JWCIII

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-921

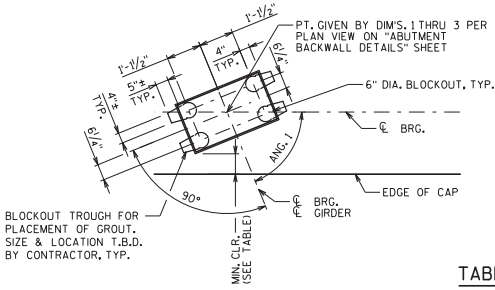
SHORELINE SUB. M.P. 104.04
LAT. 43°7'56"N/LONG. 87°54'50"W

DRAWN BY JES | PLANS CK'D. JWCIII

ABUTMENT
BILL OF BARS

SHEET 25 OF 56

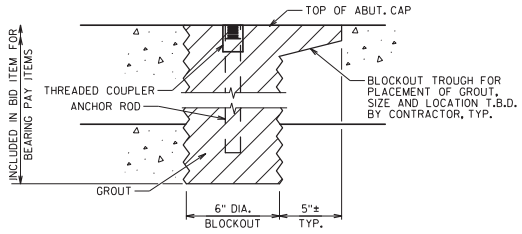
2648



ANCHOR BOLT LOCATION DETAIL

W. ABUT.	E. ABUT.
1'-1¼"	1'-1⅞"

TABLE OF MIN. BASE PLATE CLEARANCES TO ABUT. EDGE



ANCHOR BOLT BLOCKOUT DETAIL

SDR
09/13/22

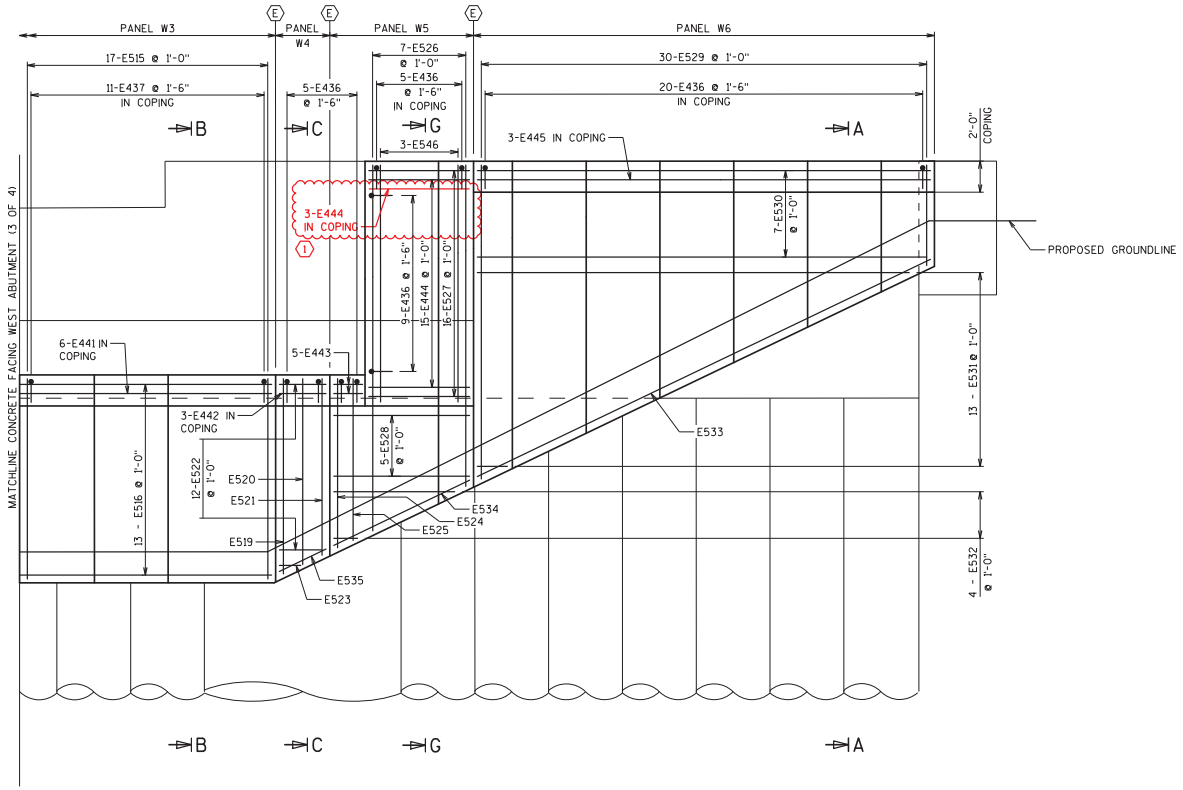
WISCONSIN
JAMES W. CHRISTIAN
E-36166
09/13/2022
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

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PLOT SCALE : 0.166667:1

NOTES

SEE PREVIOUS SHEET FOR PLAN NOTES.

STATE PROJECT NUMBER
1229-04-72



C.I.P.C. FACING ELEVATION - WEST ABUTMENT

SHOWING HORIZ. AND VERT. REINF. IN THE FACING

LEGEND

(E) FACING EXPANSION JOINT. SEE DETAIL ON "CONCRETE FACING SECTIONS (3 OF 3)" SHEET.

[C] FACING CONTRACTION JOINT @ MIN. FACING THICKNESS IN FRONT OF EACH NON-CORNER DRILLED SHAFT SEE DETAIL ON "CONCRETE FACING SECTIONS (3 OF 3)" SHEET.

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2655
September 23, 2022

SDR
09/13/22

WISCONSIN
JAMES W. SCHMITT
E-36166
09/13/2022
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY
1	9/22/22	REBAR DTLS	JWCIII

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-921

SHORELINE SUB. M.P. 104.04
LAT. 43°7'56"N/LONG. 87°54'50"W

DRAWN BY JES | PLANS CK'D. JWCIII

CONCRETE FACING
WEST ABUTMENT
(4 OF 4)

SHEET 32 OF 56

2655

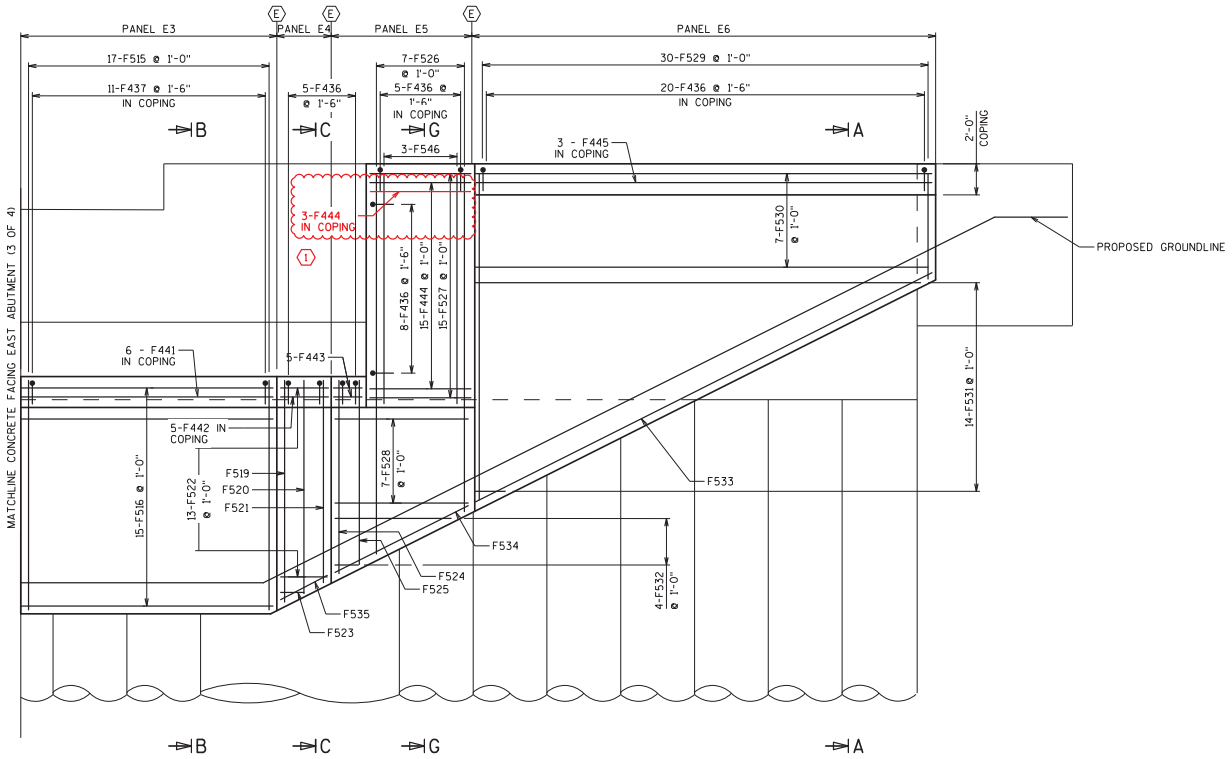
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PLOT BY : cvhayden
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NOTES

SEE PREVIOUS SHEET FOR PLAN NOTES.

STATE PROJECT NUMBER
1229-04-72



Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2659
September 23, 2022

8

8

LEGEND

(E) FACING EXPANSION JOINT. SEE DETAIL ON "CONCRETE FACING SECTIONS (3 OF 3)" SHEET.

[C] FACING CONTRACTION JOINT @ MIN. FACING THICKNESS IN FRONT OF EACH NON-CORNER DRILLED SHAFT. SEE DETAIL ON "CONCRETE FACING SECTIONS (3 OF 3)" SHEET.

C.I.P.C. FACING ELEVATION - EAST ABUTMENT

SHOWING HORIZ. AND VERT. REINF. IN THE FACING

SDR
09/13/22

WISCONSIN
JAMES W. CHEEVER
E-36166
09/13/2022
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY
1	9/22/22	REBAR DTLS	JWCIII

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-921

SHORELINE SUB. M.P. 104.04
LAT. 43°7'56"N/LONG. 87°54'50"W

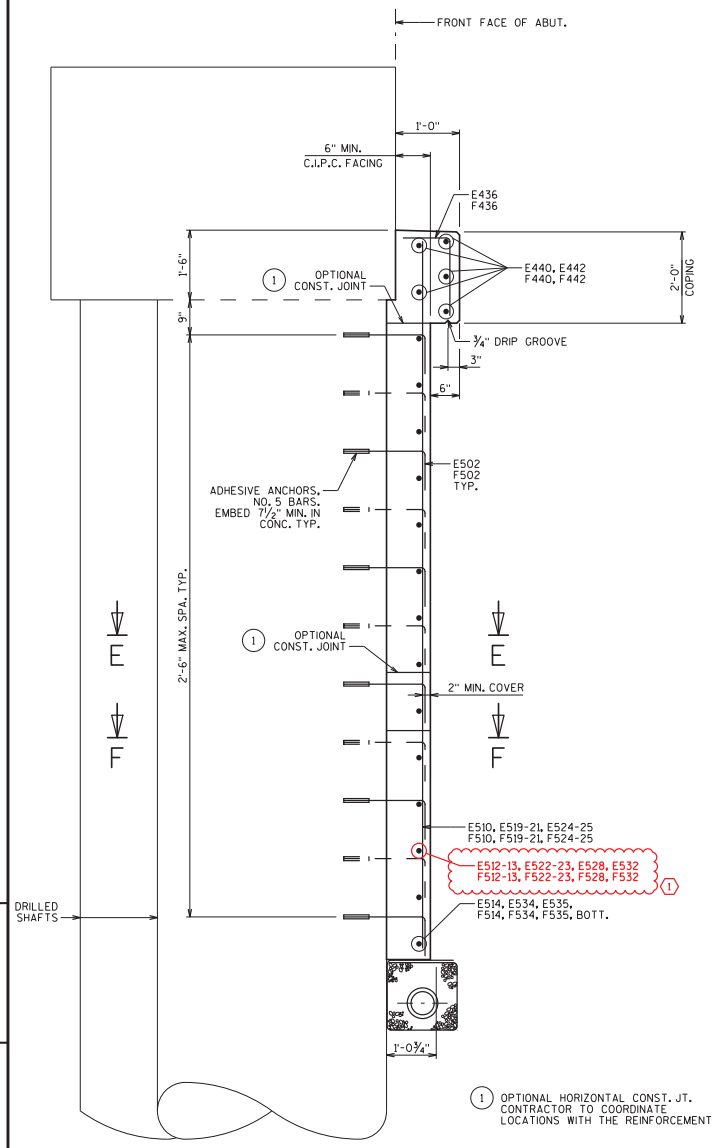
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CONCRETE FACING
EAST ABUTMENT
(4 OF 4)

SHEET 36 OF 56

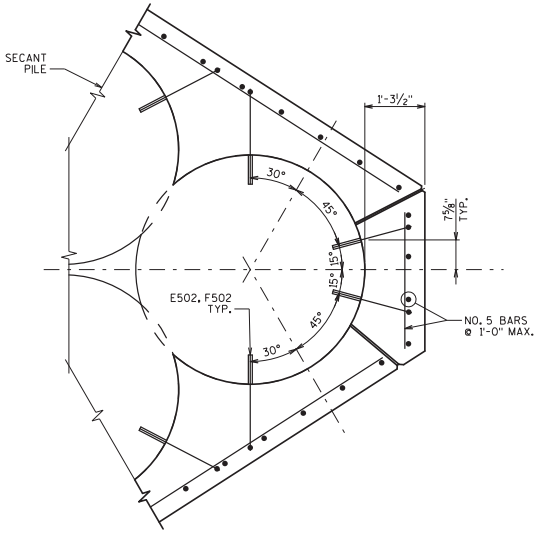
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STATE PROJECT NUMBER
1229-04-72

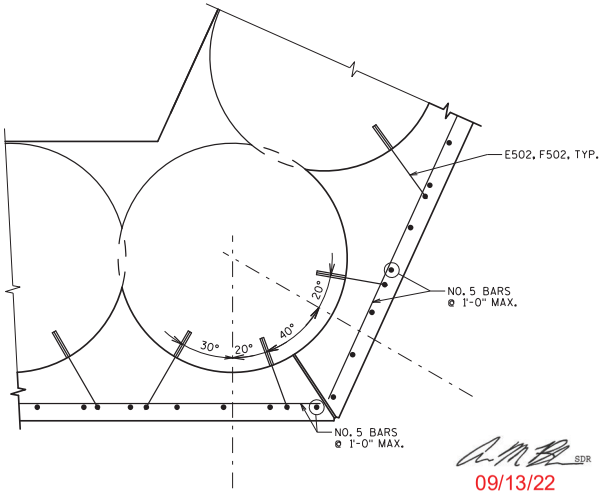


SECTION C-C

SECTION AT PANELS W2, W4 & E2, E4



SECTION E-E



SECTION F-F

SDR 09/13/22

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2661
September 23, 2022

NO.	DATE	REVISION	BY
1	9/22/22	REBAR DTLS	JWCIII

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-921

SHORELINE SUB. M.P. 104.04
LAT. 43°7'56"N/LONG. 87°54'50"W

DRAWN BY JES | PLANS CK'D. JWCIII

CONCRETE FACING SECTIONS (2 OF 3)

SHEET 38 OF 56

2661

WISCONSIN JAMES W. CHERAMI E-36166 09/13/2022 MILWAUKEE, WIS. PROFESSIONAL ENGINEER

STATE PROJECT NUMBER
1229-04-72

BILL OF BARS

NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR.
THE FIRST OR FIRST TWO DIGITS
OF A BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D W. ABUT.	NO. REQ'D E. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
E501	X	146		1'-11"	X		W. ABUT. WING WALL TIE
E502	X	122		2'-5"	X		W. ABUT. DRILLED SHAFT TIE
E503	X	30		15'-5"		X	W. ABUT. PANEL W1 VERT.
E504	X	8		29'-3"			W. ABUT. PANEL W1 HORIZ.
E505	X	14		15'-9"		X	W. ABUT. PANEL W1 HORIZ.
E506	X	1		32'-3"			W. ABUT. PANEL W1 BOTT.
E507	X	1		22'-8"	1		W. ABUT. PANEL W2 VERT.
E508	X	1		23'-1"			W. ABUT. PANEL W2 VERT.
E509	X	1		23'-9"			W. ABUT. PANEL W2 VERT.
E510	X	6		11'-6"	1	X	W. ABUT. PANEL W2 VERT.
E511	X	16		3'-4"			W. ABUT. PANEL W2 HORIZ.
E512	X	7		8'-10"			W. ABUT. PANEL W2 HORIZ.
E513	X	4		4'-8"		X	W. ABUT. PANEL W2 HORIZ.
E514	X	1		9'-9"			W. ABUT. PANEL W2 BOTT.
E515	X	34		12'-11"			W. ABUT. PANEL W3 VERT.
E516	X	13		32'-6"			W. ABUT. PANEL W3 HORIZ.
E519	X	1		12'-7"			W. ABUT. PANEL W4 VERT.
E520	X	1		12'-0"			W. ABUT. PANEL W4 VERT.
E521	X	1		11'-5"			W. ABUT. PANEL W4 VERT.
E522	X	12		3'-0"			W. ABUT. PANEL W4 HORIZ.
E523	X	1		1'-5"			W. ABUT. PANEL W4 HORIZ.
E524	X	1		10'-11"			W. ABUT. PANEL W5 VERT.
E525	X	1		10'-5"			W. ABUT. PANEL W5 VERT.
E526	X	7		22'-2"		X	W. ABUT. PANEL W5 VERT.
E527	X	16		6'-6"			W. ABUT. PANEL W5 HORIZ.
E528	X	5		8'-9"			W. ABUT. PANEL W5 HORIZ.
E529	X	30		13'-5"		X	W. ABUT. PANEL W6 VERT.
E530	X	7		29'-3"			W. ABUT. PANEL W6 HORIZ.
E531	X	13		15'-0"		X	W. ABUT. PANEL W6 HORIZ.
E532	X	4		4'-8"		X	W. ABUT. PANEL W5 HORIZ.
E533	X	1		34'-5"			W. ABUT. PANEL W6 BOTT.
E534	X	1		9'-9"			W. ABUT. PANEL W5 BOTT.
E535	X	1		3'-4"			W. ABUT. PANEL W4 BOTT.
E436	X	73		2'-3"	X		W. ABUT. PANELS W1-W2 & W4-W6 COPING VERT.
E437	X	22		4'-11"	X		W. ABUT. PANEL W3 COPING VERT.
E438	X	3		29'-3"			W. ABUT. PANEL W1 COPING HORIZ.
E439	X	19		3'-4"			W. ABUT. PANEL W2 COPING HORIZ.
E440	X	5		5'-0"			W. ABUT. PANEL W2 COPING HORIZ.
E441	X	6		32'-6"			W. ABUT. PANEL W3 COPING HORIZ.
E442	X	3		3'-0"			W. ABUT. PANEL W4 COPING HORIZ.
E443	X	5		1'-9"			W. ABUT. PANEL W5 COPING HORIZ.
E444	X	18		6'-6"			W. ABUT. PANEL W5 COPING HORIZ.
E445	X	3		29'-3"			W. ABUT. PANEL W6 COPING HORIZ.
E546	X	6		15'-6"			W. ABUT. PANEL W2 & W5 VERT.

BAR MARK	COAT	NO. REQ'D W. ABUT.	NO. REQ'D E. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
F501	X	159		1'-11"	X		E. ABUT. WING WALL TIE
F502	X	139		2'-5"	X		E. ABUT. DRILLED SHAFT TIE
F503	X	30		18'-10"		X	E. ABUT. PANEL E1 VERT.
F504	X	13		29'-3"			E. ABUT. PANEL E1 HORIZ.
F505	X	12		15'-7"		X	E. ABUT. PANEL E1 HORIZ.
F506	X	1		31'-5"			E. ABUT. PANEL E1 BOTT.
F507	X	1		25'-1"			E. ABUT. PANEL E2 VERT.
F508	X	1		25'-7"			E. ABUT. PANEL E2 VERT.
F509	X	1		26'-2"			E. ABUT. PANEL E2 VERT.
F510	X	6		13'-8"		X	E. ABUT. PANEL E2 VERT.
F511	X	16		3'-4"			E. ABUT. PANEL E2 HORIZ.
F512	X	9		8'-10"			E. ABUT. PANEL E2 HORIZ.
F513	X	4		4'-9"			E. ABUT. PANEL E2 HORIZ.
F514	X	1		9'-6"			E. ABUT. PANEL E2 BOTT.
F515	X	34		14'-10"			E. ABUT. PANEL E3 VERT.
F516	X	15		32'-6"			E. ABUT. PANEL E3 HORIZ.
F519	X	1		14'-4"			E. ABUT. PANEL E4 VERT.
F520	X	1		13'-8"			E. ABUT. PANEL E4 VERT.
F521	X	1		13'-1"			E. ABUT. PANEL E4 VERT.
F522	X	13		3'-0"			E. ABUT. PANEL E4 HORIZ.
F523	X	1		1'-6"			E. ABUT. PANEL E4 HORIZ.
F524	X	1		12'-6"			E. ABUT. PANEL E5 VERT.
F525	X	1		11'-11"			E. ABUT. PANEL E5 VERT.
F526	X	7		23'-3"		X	E. ABUT. PANEL E5 VERT.
F527	X	15		6'-6"			E. ABUT. PANEL E5 HORIZ.
F528	X	7		8'-7"			E. ABUT. PANEL E5 HORIZ.
F529	X	30		14'-6"		X	E. ABUT. PANEL E6 VERT.
F530	X	7		29'-3"			E. ABUT. PANEL E6 HORIZ.
F531	X	14		14'-11"		X	E. ABUT. PANEL E6 HORIZ.
F532	X	4		4'-6"		X	E. ABUT. PANEL E5 HORIZ.
F533	X	1		32'-6"			E. ABUT. PANEL E6 BOTT.
F534	X	1		9'-7"			E. ABUT. PANEL E5 BOTT.
F535	X	1		3'-4"			E. ABUT. PANEL E4 BOTT.
F436	X	71		2'-3"	X		E. ABUT. PANELS E1-E2 & E4-E6 COPING VERT.
F437	X	22		4'-11"	X		E. ABUT. PANEL E3 COPING VERT.
F438	X	3		29'-3"			E. ABUT. PANEL E1 COPING HORIZ.
F439	X	18		3'-4"			E. ABUT. PANEL E2 COPING HORIZ.
F440	X	5		5'-0"			E. ABUT. PANEL E2 COPING HORIZ.
F441	X	6		32'-6"			E. ABUT. PANEL E3 COPING HORIZ.
F442	X	3		3'-0"			E. ABUT. PANEL E4 COPING HORIZ.
F443	X	5		1'-9"			E. ABUT. PANEL E5 COPING HORIZ.
F444	X	18		6'-6"			E. ABUT. PANEL E5 COPING HORIZ.
F445	X	3		29'-3"			E. ABUT. PANEL E6 COPING HORIZ.
F546	X	6		15'-4"			E. ABUT. PANEL E2 & E5 VERT.

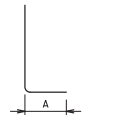
BAR SERIES TABLE

BAR MARK	NO. REQ'D. W. ABUT.	LENGTH
E503	1 SERIES OF 30	8'-5" TO 22'-6"
E505	1 SERIES OF 14	2'-2" TO 29'-3"
E510	1 SERIES OF 6	10'-5" TO 12'-7"
E513	1 SERIES OF 4	1'-5" TO 7'-10"
E526	1 SERIES OF 7	20'-9" TO 23'-7"
E529	1 SERIES OF 30	6'-5" TO 20'-6"
E531	1 SERIES OF 13	1'-11" TO 28'-0"
E532	1 SERIES OF 4	1'-7" TO 7'-10"

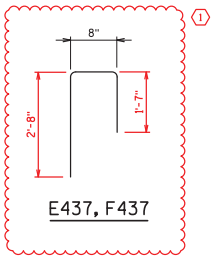
BUNDLE & TAG EACH SERIES SEPARATELY

BAR MARK	NO. REQ'D. E. ABUT.	LENGTH
F503	1 SERIES OF 30	13'-0" TO 24'-11"
F505	1 SERIES OF 12	1'-11" TO 29'-3"
F510	1 SERIES OF 6	12'-9" TO 14'-7"
F513	1 SERIES OF 4	1'-7" TO 8'-10"
F526	1 SERIES OF 7	21'-10" TO 24'-8"
F529	1 SERIES OF 30	7'-1" TO 22'-0"
F531	1 SERIES OF 14	1'-7" TO 28'-4"
F532	1 SERIES OF 4	1'-6" TO 7'-6"

BAR BENDS



BAR MARK	A
E501	0'-10"
E502	0'-10"
E436	0'-8" (1)
F501	0'-10"
F502	0'-10"
F436	0'-8" (1)



E437, F437

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2663
September 23, 2022

NO.	DATE	REVISION	BY
1	9/22/22	REBAR DTLS	JWCIII

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-921

SHORELINE SUB. M.P. 104.04
LAT. 43°7'56"N/LONG. 87°54'50"W

DRAWN BY: JES | PLANS CK'D. JWCIII

CONCRETE FACING
BILL OF BARS

SHEET 40 OF 56

2663

SDR
09/13/22

WISCONSIN
JAMES W. CHERRY III
E-36165
09/13/2022
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

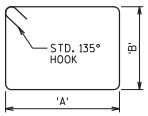
STATE PROJECT NUMBER

1229-04-72

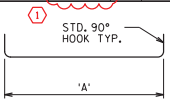
BILL OF BARS

NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR.
THE FIRST OR FIRST TWO DIGITS
OF A BAR MARK SIGNIFIES THE BAR SIZE

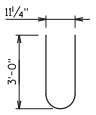
BAR MARK	COAT	PIER 1	PIER 2	PIER 3	TOTAL NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
P801		26	26	26	78	25'-4"	X		FOOTING REINF. - HORIZ.
P502		24	24	24	72	11'-10"	X		FOOTING REINF. - HORIZ.
P903		47	47	47	141	13'-4"	X		FOOTING REINF. - HORIZ.
P804		28	28	28	84	6'-6"	X		FOOTING REINF. - PILE UPLIFT
P1005	X	128	128	128	384	16'-0"	X		FOOTING REINF. - VERT.
P406	X	21	22	24	67	48'-4"	X		PIER WALL REINF. - STIRRUP
P407	X	147	154	168	469	4'-11"	X		PIER WALL REINF. - HORIZ. TIE
P808	X	29	29	29	87	23'-3"			PIER CAP REINF. - HORIZ.
P609	X	14	14	14	42	14'-4"	X		PIER CAP REINF. - HORIZ.
P610	X	36	36	36	108	22'-8"	X		PIER CAP REINF. - STIRRUP
P611	X	4	4	4	12	18'-0"	X		PIER CAP REINF. - STIRRUP
P612	X	2	2	2	6	21'-8"	X		PIER CAP REINF. - STIRRUP
P1013	X	128	0	0	128	19'-3"			PIER WALL REINF. - VERT. PIER 1
P1014	X	0	128	0	128	19'-8"			PIER WALL REINF. - VERT. PIER 2
P1015	X	0	0	128	128	20'-8"			PIER WALL REINF. - VERT. PIER 3
P516		48	48	48	144	5'-4"	X		FOOTING REINF. SKIN VERT.
P617		4	4	4	12	24'-6"	X		FOOTING REINF. SKIN HORIZ.
P518		26	26	26	78	5'-5"	X		FOOTING REINF. SKIN VERT.
P619		4	4	4	12	12'-1"	X		FOOTING REINF. SKIN HORIZ.



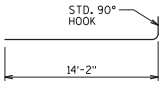
BAR MARK	'A'	'B'
P406	19'-8"	4'-0"
P610	6'-9"	3'-8"
P611	4'-5"	3'-8"
P612	6'-3"	3'-8"



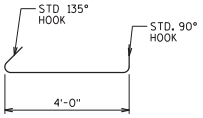
BAR MARK	'A'
P801	22'-8"
P502	10'-2"
P903	10'-2"
P516	3'-8"
P617	22'-6"
P518	3'-9"
P619	10'-1"



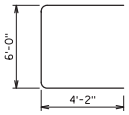
P804



P1005

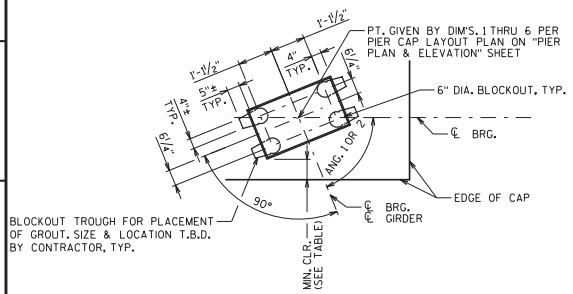


P407



P609

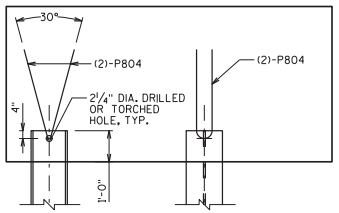
BAR BENDS



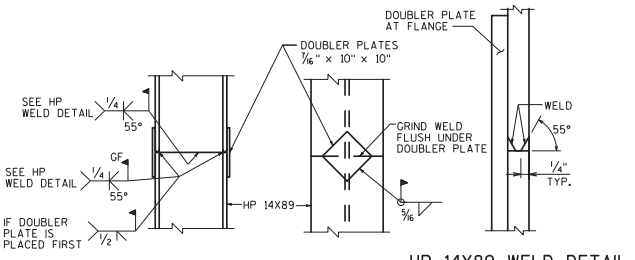
ANCHOR BOLT LOCATION DETAIL

SPAN 1	SPAN 2	SPAN 3	SPAN 4
PIER 1	PIER 1/2	PIER 2/3	PIER 4
8⅛"	7⅞"	7⅞"	7⅞"

TABLE OF MIN. BASE PLATE CLEARANCES TO PIER EDGE



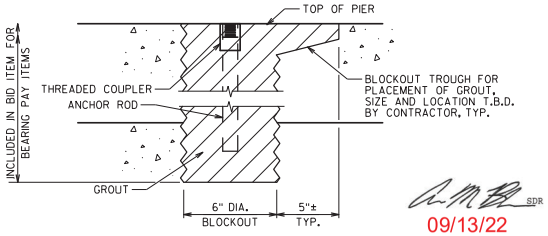
PILE UPLIFT DETAIL



STEEL HP 14X89 SHAPE

HP 14X89 WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAIL
(STEEL HP PILE SPLICE MATERIAL MAY BE ASTM A588 OR ASTM A572, GR 50)



ANCHOR BOLT BLOCKOUT DETAIL

SDR
09/13/22

WISCONSIN
JAMES W. CHRISTIAN
E-36165
09/13/2022
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

NOTES

1. NON-SHRINK GROUT USED IN FILLING THE ANCHOR BOLT BLOCKOUTS SHALL BE PROVIDED AS STATED IN THE BEARING SPECIAL PROVISION. THE MINIMUM 28-DAY COMPRESSIVE STRENGTH SHALL BE 6.0 KSI. GROUTING MATERIALS AND INSTALLATION ARE CONSIDERED INCIDENTAL TO THE PAY ITEM FOR THE BEARING ASSEMBLY.
2. SEE BEARING DETAIL SHEETS FOR RELATED BEARING DIMENSIONS.
3. PIER FOOTINGS TO BE SUPPORTED ON HP 14X89 PILES WITH AN ULTIMATE BEARING CAPACITY OF 372 TONS/PILE AND AN ULTIMATE UPLIFT CAPACITY OF 135 TONS/PILE AS DETERMINED BY THE PDA/CAPWAP ACCEPTANCE METHOD. PILE POINTS ARE REQUIRED. ESTIMATED PILING LENGTH = 95 FT. MINIMUM PENETRATION DEPTH = 58 FT. DRIVEN BELOW BOTTOM OF FOOTING ELEVATION.

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 2665
September 23, 2022

NO.	DATE	REVISION	BY
1	9/22/22	REBAR DTLS	JWCIII

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-921

SHORELINE SUB. M.P. 104.04
LAT. 43°7'56"N/LONG. 87°54'50"W

DRAWN BY JWO | PLANS CK'D. CNK

PIER DETAILS

SHEET 42 OF 56

2665

STAGE 4A - JEAN NICOLET ROAD

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY)			CUMULATIVE VOL (CY)		
		CUT	FILL	EBS	CUT	FILL	EBS	CUT	FILL	EBS
41+54.097	0.00	11.49	0.00	0.00	0	0	0	0	0	0
42+00	45.90	11.49	0.00	0.00	20	0	0	20	0	0
42+50	50.00	7.13	0.00	0.00	17	0	0	37	0	0
43+00	50.00	4.20	0.00	0.00	10	0	0	47	0	0
43+50	50.00	5.62	0.00	0.00	9	0	0	56	0	0
44+00	50.00	5.18	0.00	0.00	10	0	0	66	0	0
44+50	50.00	0.20	3.43	0.00	5	3	0	71	3	0
45+00	50.00	5.37	0.00	0.00	5	3	0	76	6	0
45+46.149	46.15	18.08	0.00	0.00	20	0	0	96	6	0
46+00	53.85	158.43	13.52	0.00	176	13	0	272	19	0
46+50	50.00	161.77	10.81	0.00	296	23	0	568	42	0
47+00	50.00	164.75	9.76	0.00	302	19	0	870	61	0
47+50	50.00	158.08	11.13	0.00	299	19	0	1,169	80	0
48+00	50.00	155.05	11.25	0.00	290	21	0	1,459	101	0
48+50	50.00	150.03	12.54	0.00	282	22	0	1,741	123	0
49+00	50.00	136.67	12.81	0.00	265	23	0	2,006	146	0
49+50	50.00	127.28	11.19	0.00	244	22	0	2,250	168	0
49+99.716	49.72	117.79	11.44	0.00	226	21	0	2,476	189	0
50+50	50.28	116.83	5.47	0.00	218	16	0	2,694	205	0
51+00	50.00	138.07	10.47	0.00	236	15	0	2,930	220	0
51+50	50.00	160.32	0.00	0.00	276	10	0	3,206	230	0
52+00	50.00	242.46	0.00	0.00	373	0	0	3,579	230	0
52+50	50.00	264.35	0.00	0.00	469	0	0	4,048	230	0
53+00	50.00	301.25	0.00	0.00	524	0	0	4,572	230	0
53+50	50.00	338.95	0.00	0.00	593	0	0	5,165	230	0
54+00	50.00	381.17	0.00	0.00	667	0	0	5,832	230	0
54+50	50.00	410.05	0.00	0.00	733	0	0	6,565	230	0
55+00	50.00	421.10	0.00	0.00	770	0	0	7,335	230	0
55+50	50.00	432.77	0.00	0.00	791	0	0	8,126	230	0
56+00	50.00	451.12	0.00	0.00	818	0	0	8,944	230	0
56+50	50.00	407.09	0.00	0.00	795	0	0	9,739	230	0
57+00	50.00	337.82	0.00	0.00	690	0	0	10,429	230	0
57+50	50.00	246.66	0.00	0.00	541	0	0	10,970	230	0
58+00	50.00	196.68	16.33	0.00	410	15	0	11,380	245	0
58+50	50.00	52.84	77.08	0.00	231	86	0	11,611	331	0
59+00	50.00	21.36	192.23	0.00	69	249	0	11,680	580	0
59+50	50.00	6.30	164.04	0.00	26	330	0	11,706	910	0
60+00	50.00	55.32	21.22	0.00	57	172	0	11,763	1,082	0
60+50	50.00	45.41	5.18	0.00	93	24	0	11,856	1,106	0
61+00	50.00	48.42	7.05	0.00	87	11	0	11,943	1,117	0
61+50	50.00	56.14	1.25	0.00	97	8	0	12,040	1,125	0
62+00	50.00	62.33	0.93	0.00	110	2	0	12,150	1,127	0
62+11.68	11.68	62.90	1.79	0.00	27	1	0	12,177	1,128	0
		1	COLUMN TOTALS:		12,177	1,128	0			
						1				

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 3131
September 23, 2022

pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\J_Roadway & Drainage\PSE\1229-04-76 - North End Mainline\SheetsPlan\03 Estimate of Quantities_MQ

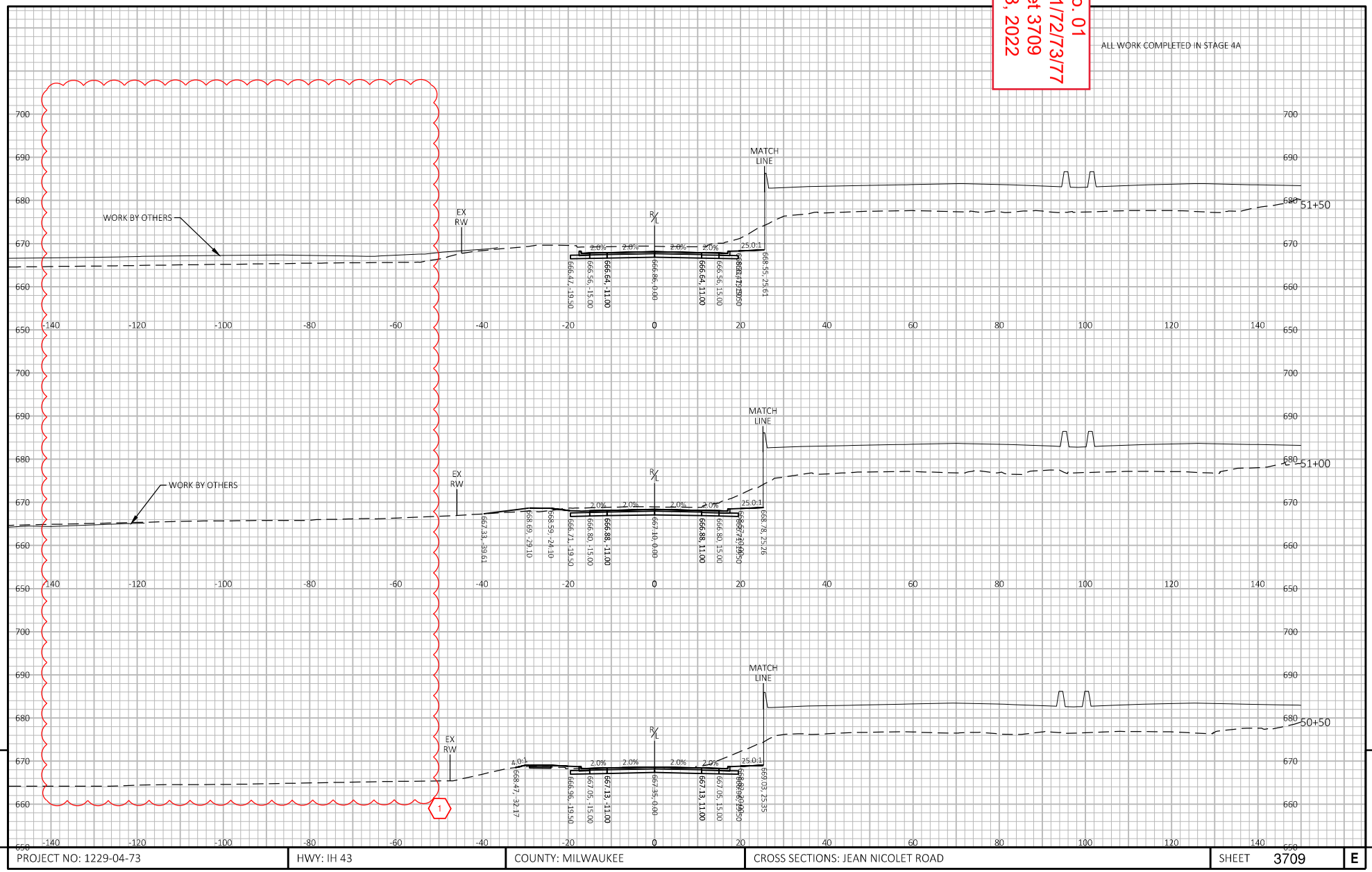
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PLOT BY : JOHNATHAN D. OLSON

PLOT NAME : 022594_MQ51

PLOT SCALE : 1:1

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 3709
September 23, 2022

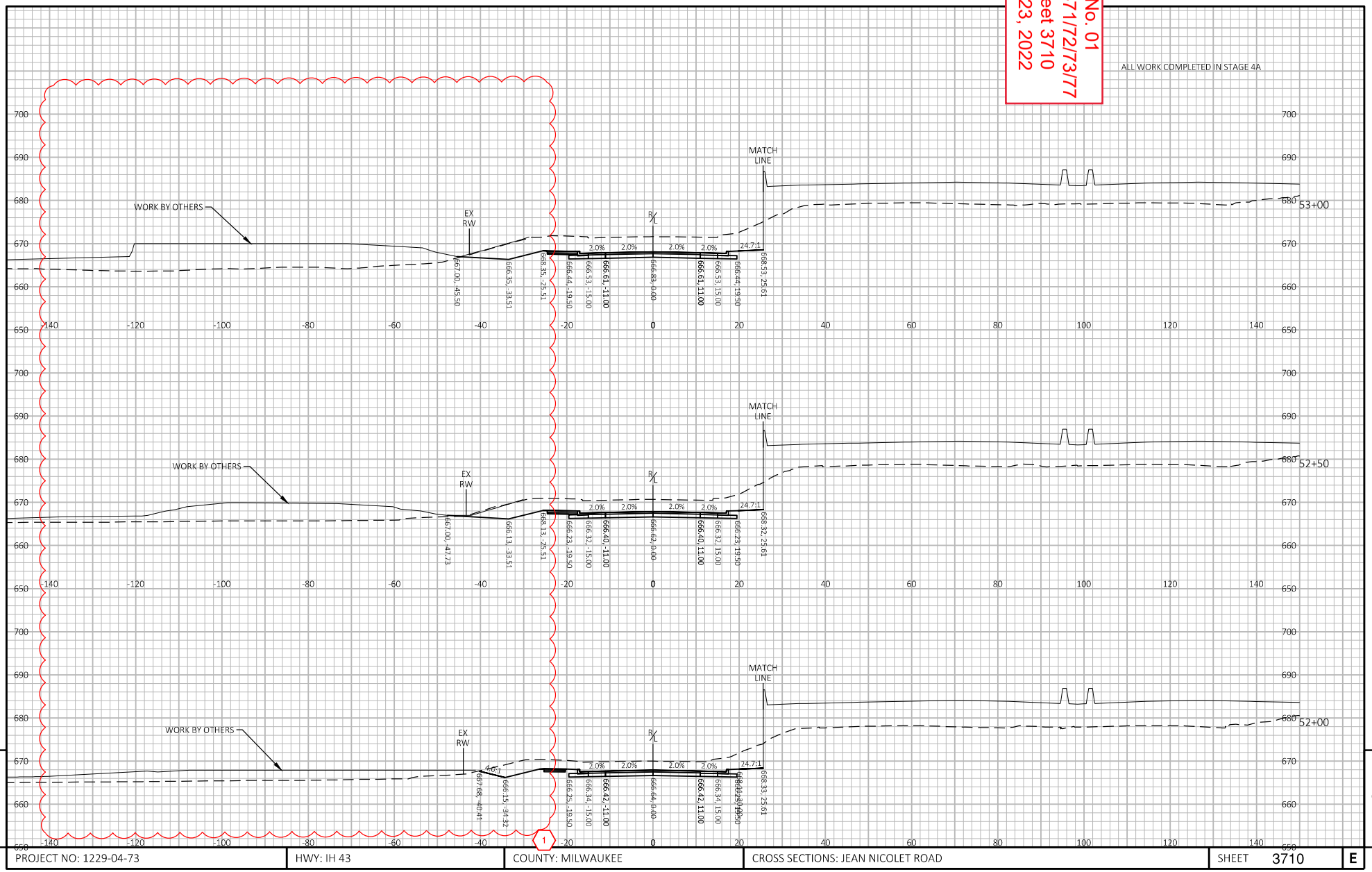


PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CROSS SECTIONS: JEAN NICOLET ROAD	SHEET 3709	E

FILE NAME : C:\CADDLIB\PW\CRKASTEN\GREATLAKES\D0256221\090308-XS-JN2.DWG PLOT DATE : 9/18/2022 1:30 PM PLOT BY : CECELIA TICHELAAR PLOT NAME :

WISDOT/CADDS SHEET 49

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 3710
September 23, 2022

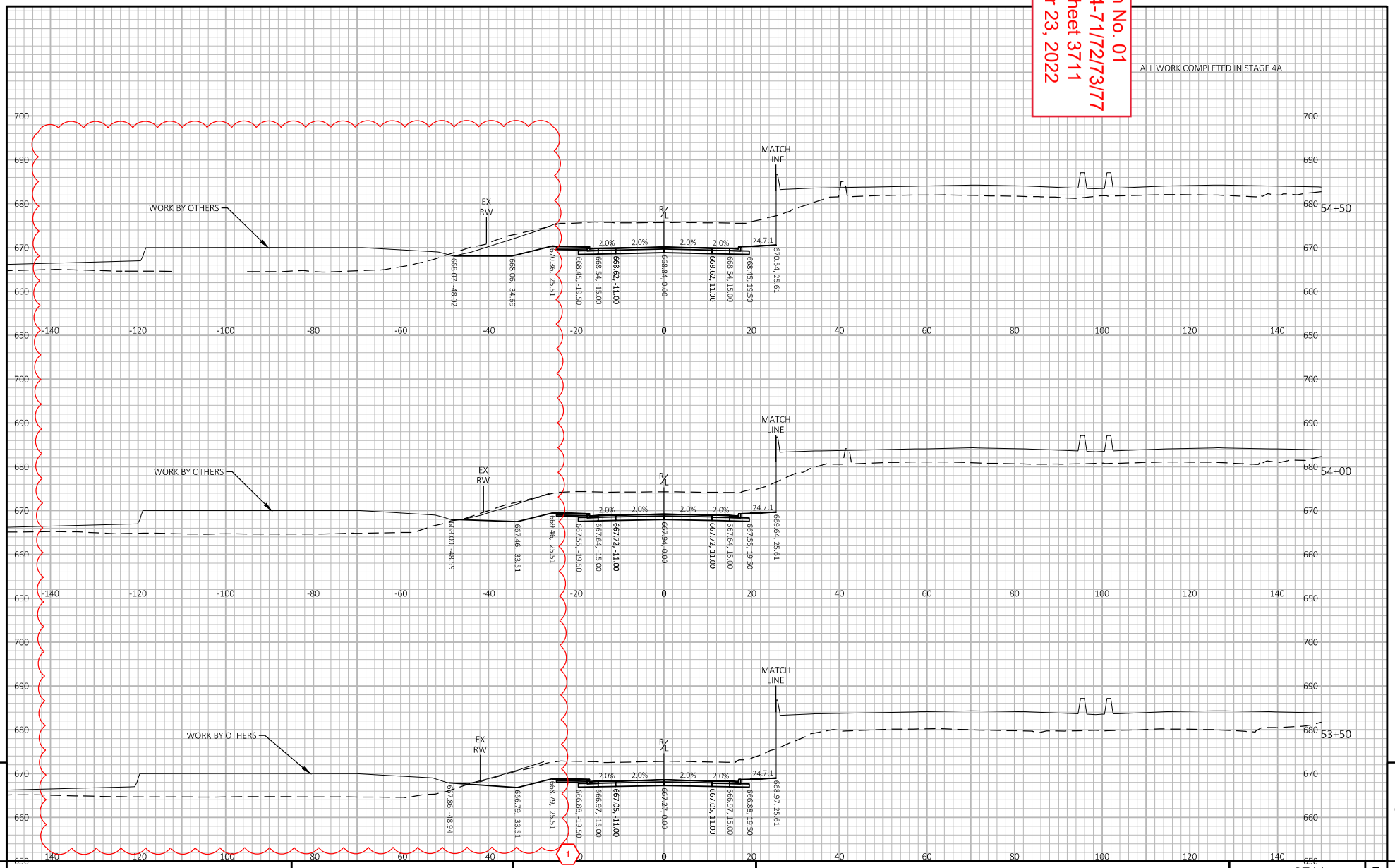


PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CROSS SECTIONS: JEAN NICOLET ROAD	SHEET 3710	E

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WISDOT/CADDS SHEET 49

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 3711
September 23, 2022



9 9

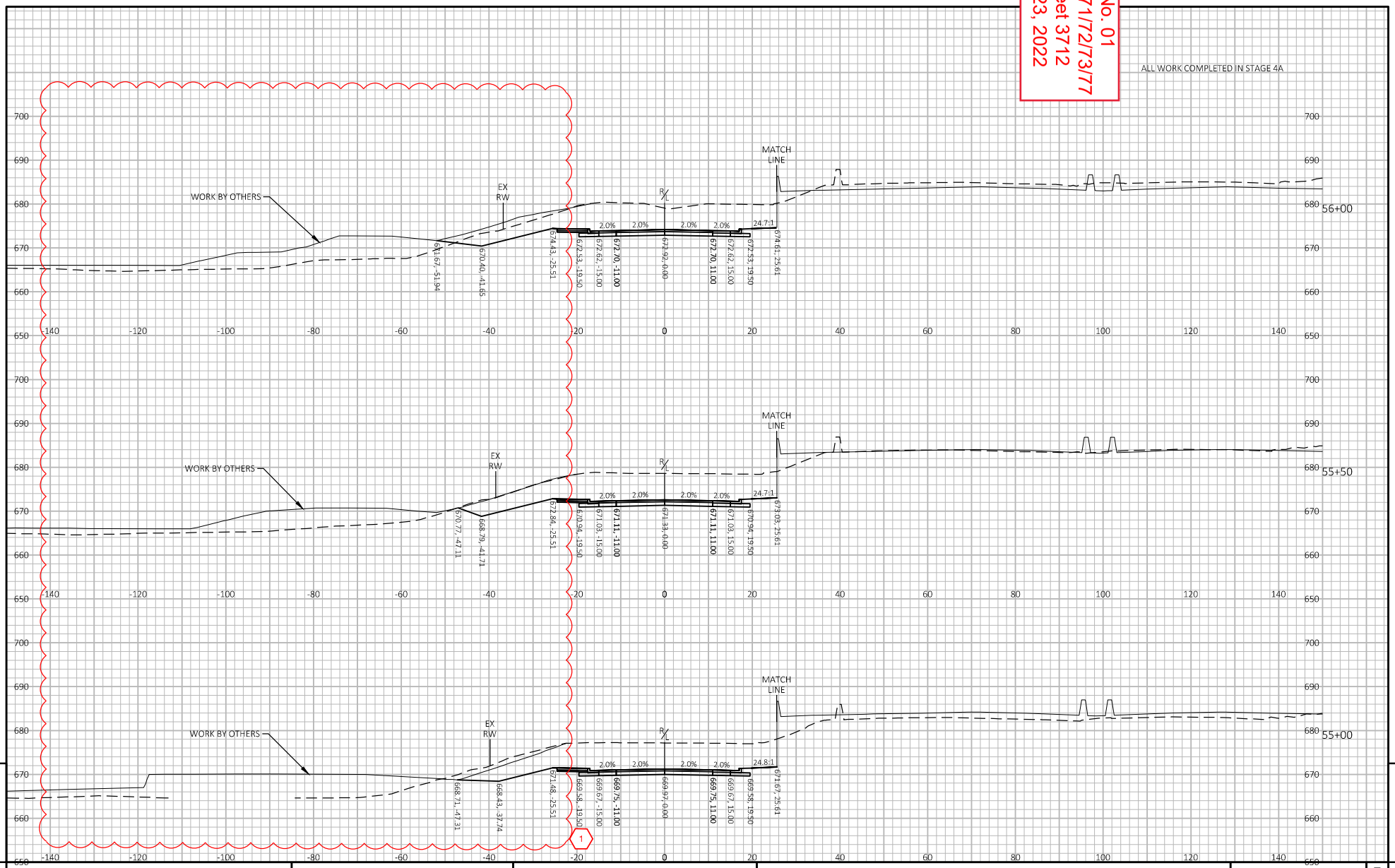
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CROSS SECTIONS: JEAN NICOLET ROAD	SHEET 3711	E

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WISDOT/CADDS SHEET 49

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 3712
September 23, 2022

ALL WORK COMPLETED IN STAGE 4A

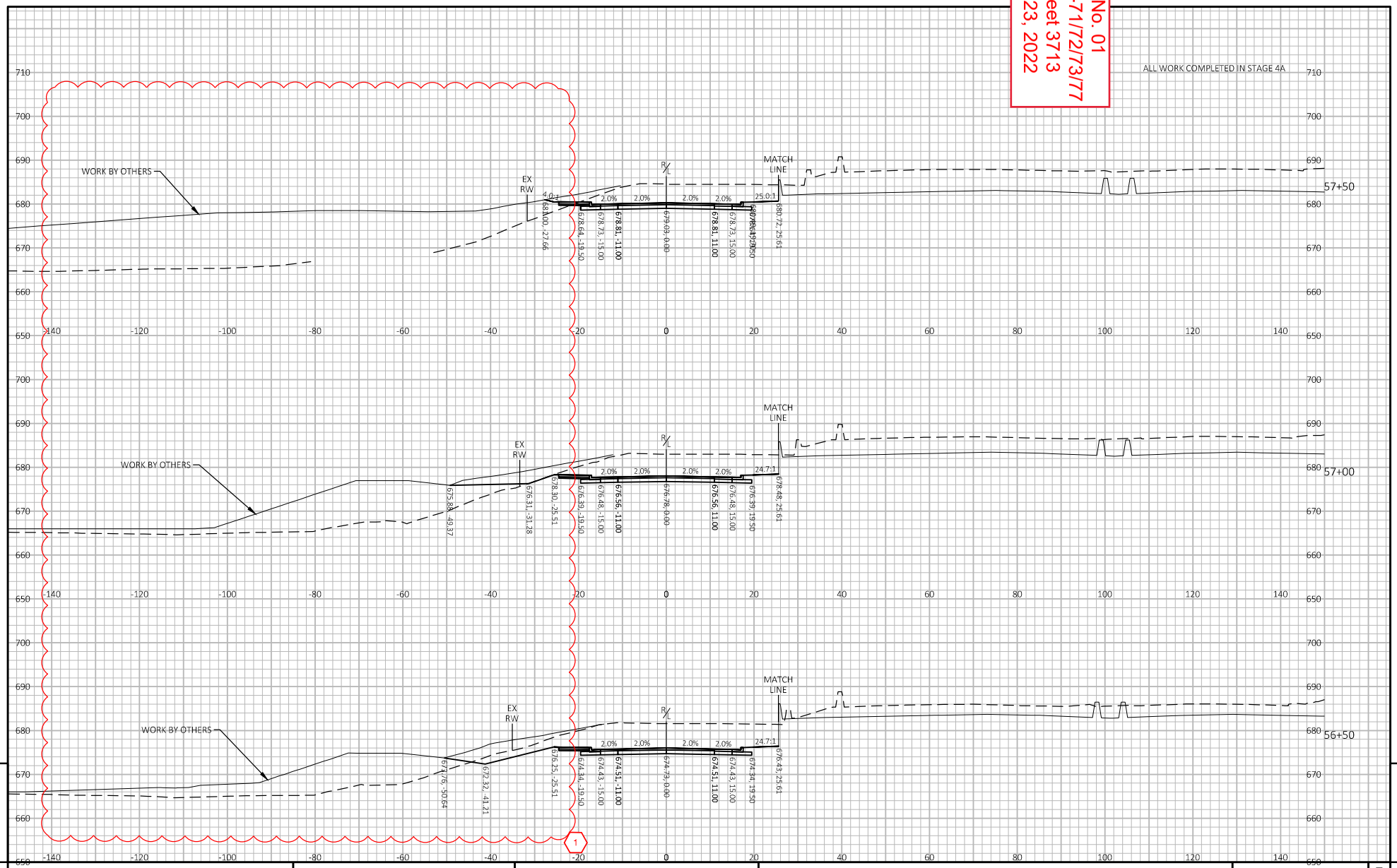


PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CROSS SECTIONS: JEAN NICOLET ROAD	SHEET 3712	E

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WISDOT/CADDS SHEET 49

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 3713
September 23, 2022

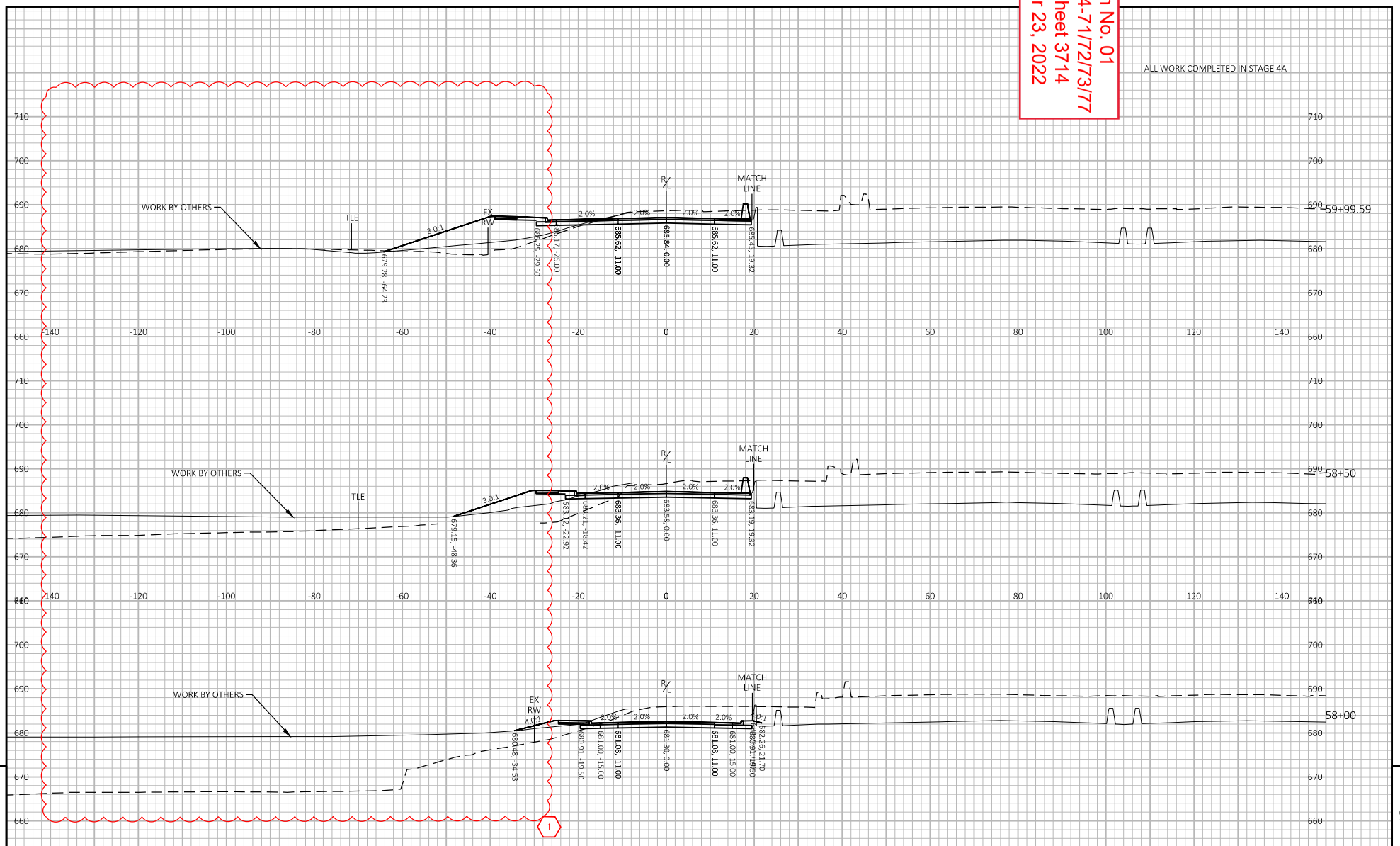


PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CROSS SECTIONS: JEAN NICOLET ROAD	SHEET 3713	E

FILE NAME : C:\CADDLIB\PW\CRKASTEN\GREATLAKES\D0256221\090308-XS-JN2.DWG PLOT DATE : 9/18/2022 1:31 PM PLOT BY : CECELIA TICHELAAR PLOT NAME :

WISDOT/CADDS SHEET 49

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 3714
September 23, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CROSS SECTIONS: JEAN NICOLET ROAD	SHEET 3714	E

FILE NAME : C:\CADDLIB\PW\CRKASTEN\GREATLAKES\D0256221\090308-XS-JN2.DWG PLOT DATE : 9/18/2022 1:31 PM PLOT BY : CECELIA TICHELAAR PLOT NAME :

WISDOT/CADDS SHEET 49

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 3715
September 23, 2022

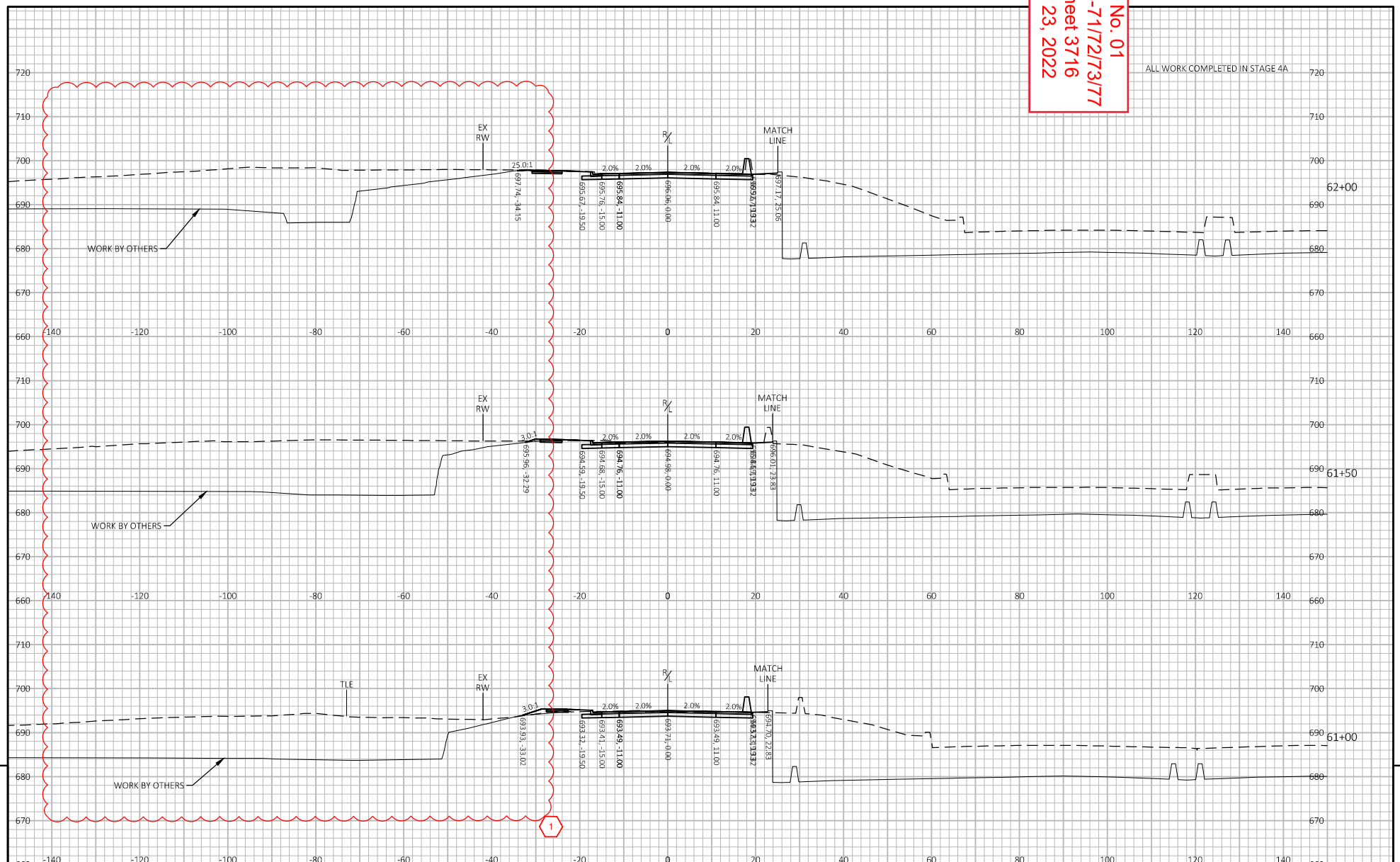


PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CROSS SECTIONS: JEAN NICOLET ROAD	SHEET 3715	E

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WISDOT/CADDS SHEET 49

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 3716
September 23, 2022



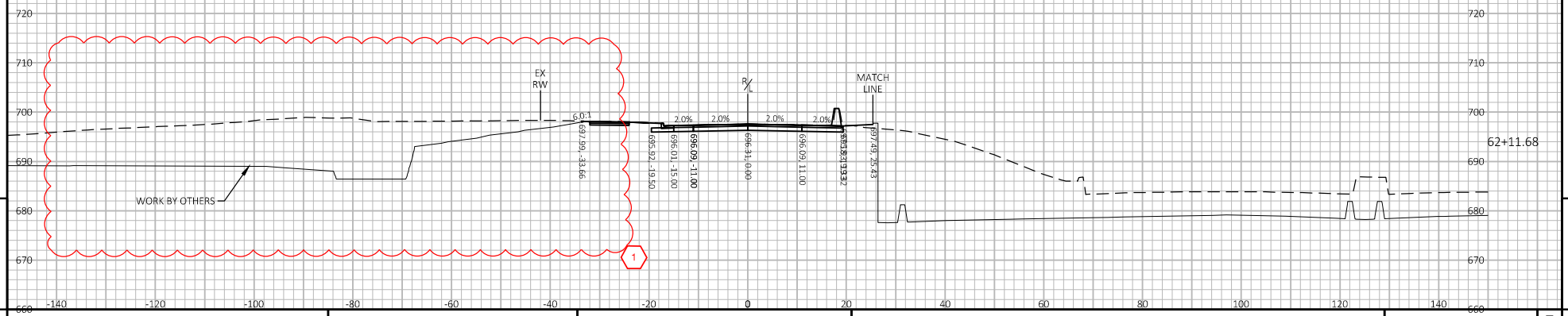
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CROSS SECTIONS: JEAN NICOLET ROAD	SHEET 3716	E

FILE NAME : C:\CADDLIB\PW\CRKASTEN\GREATLAKES\D0256221\090308-XS-JN2.DWG PLOT DATE : 9/18/2022 1:31 PM PLOT BY : CECELIA TICHELAAR PLOT NAME :

WISDOT/CADDS SHEET 49

Addendum No. 01
ID 1229-04-71/72/73/77
Revised Sheet 3717
September 23, 2022

ALL WORK COMPLETED IN STAGE 4A



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CROSS SECTIONS: JEAN NICOLET ROAD	SHEET 3717	E

FILE NAME : C:\CADDLIB\PW\CRKASTEN\GREATLAKES\D0256221\090308-XS-JN2.DWG PLOT DATE : 9/18/2022 1:31 PM PLOT BY : CECELIA TICHELAAR PLOT NAME :

WISDOT/CADDS SHEET 49

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0002	201.0105 Clearing	343.000 STA	_____.____	_____.____
0004	201.0120 Clearing	144.000 ID	_____.____	_____.____
0006	201.0205 Grubbing	343.000 STA	_____.____	_____.____
0008	201.0220 Grubbing	144.000 ID	_____.____	_____.____
0010	203.0100 Removing Small Pipe Culverts	3.000 EACH	_____.____	_____.____
0012	203.0220 Removing Structure (structure) 0003. B-40-732	1.000 EACH	_____.____	_____.____
0014	203.0220 Removing Structure (structure) 0004. B-40-733	1.000 EACH	_____.____	_____.____
0016	203.0220 Removing Structure (structure) 0005. B-40-734	1.000 EACH	_____.____	_____.____
0018	203.0220 Removing Structure (structure) 0008. B-40-24	1.000 EACH	_____.____	_____.____
0020	203.0220 Removing Structure (structure) 0009. B-40-23	1.000 EACH	_____.____	_____.____
0022	203.0220 Removing Structure (structure) 0101. R-40-412	1.000 EACH	_____.____	_____.____
0024	203.0220 Removing Structure (structure) 0102. R-40-413	1.000 EACH	_____.____	_____.____
0026	203.0220 Removing Structure (structure) 0103. R-40-414	1.000 EACH	_____.____	_____.____
0028	203.0220 Removing Structure (structure) 0104. R-40-415	1.000 EACH	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0030	203.0220 Removing Structure (structure) 0106. R-40-158	1.000 EACH	_____._____	_____._____
0032	203.0220 Removing Structure (structure) 0109. R-40-641	1.000 EACH	_____._____	_____._____
0034	203.0220 Removing Structure (structure) 0110. R-40-642	1.000 EACH	_____._____	_____._____
0036	203.0220 Removing Structure (structure) 0114. STA 1153GHA+00	1.000 EACH	_____._____	_____._____
0038	204.0100 Removing Concrete Pavement	224,901.000 SY	_____._____	_____._____
0040	204.0120 Removing Asphaltic Surface Milling	43,270.000 SY	_____._____	_____._____
0042	204.0150 Removing Curb & Gutter	29,904.000 LF	_____._____	_____._____
0044	204.0155 Removing Concrete Sidewalk	4,843.000 SY	_____._____	_____._____
0046	204.0157 Removing Concrete Barrier	19,379.000 LF	_____._____	_____._____
0048	204.0165 Removing Guardrail	418.000 LF	_____._____	_____._____
0050	204.0170 Removing Fence	36,822.000 LF	_____._____	_____._____
0052	204.0180 Removing Delineators and Markers	7.000 EACH	_____._____	_____._____
0054	204.0195 Removing Concrete Bases	244.000 EACH	_____._____	_____._____
0056	204.0210 Removing Manholes	50.000 EACH	_____._____	_____._____
0058	204.0220 Removing Inlets	454.000 EACH	_____._____	_____._____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0060	204.0245 Removing Storm Sewer (size) 0001. 8-Inch	883.000 LF	_____.____	_____.____
0062	204.0245 Removing Storm Sewer (size) 0002. 10-Inch	79.000 LF	_____.____	_____.____
0064	204.0245 Removing Storm Sewer (size) 0003. 12-Inch	8,159.000 LF	_____.____	_____.____
0066	204.0245 Removing Storm Sewer (size) 0004. 15-Inch	1,696.000 LF	_____.____	_____.____
0068	204.0245 Removing Storm Sewer (size) 0005. 18-Inch	7,973.000 LF	_____.____	_____.____
0070	204.0245 Removing Storm Sewer (size) 0006. 21-Inch	380.000 LF	_____.____	_____.____
0072	204.0245 Removing Storm Sewer (size) 0007. 24-Inch	2,584.000 LF	_____.____	_____.____
0074	204.0245 Removing Storm Sewer (size) 0008. 27-Inch	139.000 LF	_____.____	_____.____
0076	204.0245 Removing Storm Sewer (size) 0009. 30-Inch	1,146.000 LF	_____.____	_____.____
0078	204.0245 Removing Storm Sewer (size) 0010. 36-Inch	619.000 LF	_____.____	_____.____
0080	204.0245 Removing Storm Sewer (size) 0011. 42-Inch	455.000 LF	_____.____	_____.____
0082	204.0245 Removing Storm Sewer (size) 0012. 48-Inch	1,102.000 LF	_____.____	_____.____
0084	204.0245 Removing Storm Sewer (size) 0013. 72-Inch	191.000 LF	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0086	204.0245 Removing Storm Sewer (size) 0014. 38x48-Inch	349.000 LF	_____._____	_____._____
0088	204.0247 Removing Ancillary Structure with Restoration (structure) 0001. S-40-12	1.000 EACH	_____._____	_____._____
0090	204.0247 Removing Ancillary Structure with Restoration (structure) 0002. S-40-64	1.000 EACH	_____._____	_____._____
0092	204.0247 Removing Ancillary Structure with Restoration (structure) 0003. S-40-386	1.000 EACH	_____._____	_____._____
0094	204.0247 Removing Ancillary Structure with Restoration (structure) 0004. S-40-387	1.000 EACH	_____._____	_____._____
0096	204.0247 Removing Ancillary Structure with Restoration (structure) 0005. S-40-900	1.000 EACH	_____._____	_____._____
0098	204.0247 Removing Ancillary Structure with Restoration (structure) 0006. S-40-919	1.000 EACH	_____._____	_____._____
0100	204.0247 Removing Ancillary Structure with Restoration (structure) 0007. S-40-924	1.000 EACH	_____._____	_____._____
0102	204.0247 Removing Ancillary Structure with Restoration (structure) 0008. S-40-925	1.000 EACH	_____._____	_____._____
0104	204.0247 Removing Ancillary Structure with Restoration (structure) 0009. S-40-926	1.000 EACH	_____._____	_____._____
0106	204.0250 Abandoning Manholes	15.000 EACH	_____._____	_____._____
0108	204.0265 Abandoning Wells	11.000 EACH	_____._____	_____._____
0110	204.0280 Sealing Pipes	2.000 EACH	_____._____	_____._____
0112	204.0291.S Abandoning Sewer	2,032.000 CY	_____._____	_____._____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0114	204.9001.S Removing Advance Flasher Assemblies Type 1	2.000 EACH	_____._____	_____._____
0116	204.9035.S Removing (item description) 0001. Riprap	4.000 CY	_____._____	_____._____
0118	204.9060.S Removing (item description) 0001. Cable Barrier Terminal	12.000 EACH	_____._____	_____._____
0120	204.9060.S Removing (item description) 1001. Removing Distribution Center (1229-04-73)	8.000 EACH	_____._____	_____._____
0122	204.9060.S Removing (item description) 1002. Removing Lighting Units (1229-04-73)	146.000 EACH	_____._____	_____._____
0124	204.9060.S Removing (item description) 1003. Removing Underdeck Lighting (1229-04-73)	4.000 EACH	_____._____	_____._____
0126	204.9060.S Removing (item description) 3201. Traffic Signals Port Wash Rd & Bender Rd	1.000 EACH	_____._____	_____._____
0128	204.9060.S Removing (item description) 3202. Loop Detector Wire and Lead-In Cable Port Wash Rd & Bender Rd	1.000 EACH	_____._____	_____._____
0130	204.9060.S Removing (item description) 3301. Traffic Signals IH 43 Ramps & Good Hope Rd	1.000 EACH	_____._____	_____._____
0132	204.9060.S Removing (item description) 3302. Loop Detector Wire and Lead-In Cable IH 43 Ramps & Good Hope Rd	1.000 EACH	_____._____	_____._____
0134	204.9060.S Removing (item description) 3303. Traffic Signals Good Hope Rd & Port Washington Rd	1.000 EACH	_____._____	_____._____
0136	204.9060.S Removing (item description) 3305. Traffic Signals Equipment Brown Deer Rd & CTH W	1.000 EACH	_____._____	_____._____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0138	204.9060.S Removing (item description) 3306. Loop Detector Wire and Lead-In Cable Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
0140	204.9060.S Removing (item description) 3307. Pull Box Rings and Covers Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
0142	204.9060.S Removing (item description) 3320. Communication Vault	21.000 EACH	_____.____	_____.____
0144	204.9090.S Removing (item description) 0001. Cable Barrier	8,439.000 LF	_____.____	_____.____
0146	204.9090.S Removing (item description) 0002. Modular Block Landscaping Retaining Wall	656.000 LF	_____.____	_____.____
0148	205.0100 Excavation Common	746,952.000 CY	_____.____	_____.____
0150	205.3000.S Temporary Emergency Pullouts	2.000 EACH	_____.____	_____.____
0152	206.1000 Excavation for Structures Bridges (structure) 0003. B-40-732	LS	LUMP SUM	_____.____
0154	206.1000 Excavation for Structures Bridges (structure) 0005. B-40-734	LS	LUMP SUM	_____.____
0156	206.1000 Excavation for Structures Bridges (structure) 0008. B-40-921	LS	LUMP SUM	_____.____
0158	206.1000 Excavation for Structures Bridges (structure) 0009. B-40-1026	LS	LUMP SUM	_____.____
0160	206.1000 Excavation for Structures Bridges (structure) 0010. B-40-1027	LS	LUMP SUM	_____.____
0162	206.1000 Excavation for Structures Bridges (structure) 0011. B-40-1028	LS	LUMP SUM	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0164	206.3000 Excavation for Structures Retaining Walls (structure) 0109. R-40-641	LS	LUMP SUM	_____.____
0166	206.3000 Excavation for Structures Retaining Walls (structure) 0110. R-40-642	LS	LUMP SUM	_____.____
0168	206.3000 Excavation for Structures Retaining Walls (structure) 0116. R-40-649	LS	LUMP SUM	_____.____
0170	209.1100 Backfill Granular Grade 1	65,964.000 CY	_____.____	_____.____
0172	210.1500 Backfill Structure Type A	4,335.000 TON	_____.____	_____.____
0174	210.2500 Backfill Structure Type B	1,154.000 TON	_____.____	_____.____
0176	211.0400 Prepare Foundation for Asphaltic Shoulders	70.000 STA	_____.____	_____.____
0178	213.0100 Finishing Roadway (project) 0001. 1229-04-71	1.000 EACH	_____.____	_____.____
0180	213.0100 Finishing Roadway (project) 0002. 1229-04-72	1.000 EACH	_____.____	_____.____
0182	213.0100 Finishing Roadway (project) 0003. 1229-04-73	1.000 EACH	_____.____	_____.____
0184	213.0100 Finishing Roadway (project) 0004. 1229-04-77	1.000 EACH	_____.____	_____.____
0186	305.0110 Base Aggregate Dense 3/4-Inch	338.000 TON	_____.____	_____.____
0188	305.0120 Base Aggregate Dense 1 1/4-Inch	250,124.000 TON	_____.____	_____.____
0190	310.0110 Base Aggregate Open-Graded	2,692.000 TON	_____.____	_____.____
0192	311.0110 Breaker Run	423,518.000 TON	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0194	390.0203 Base Patching Asphaltic	7,500.000 SY	_____.____	_____.____
0196	390.0303 Base Patching Concrete	178.000 SY	_____.____	_____.____
0198	405.0100 Coloring Concrete WisDOT Red	8.000 CY	_____.____	_____.____
0200	405.1000 Stamping Colored Concrete	8.000 CY	_____.____	_____.____
0202	415.0060 Concrete Pavement 6-Inch	2,213.000 SY	_____.____	_____.____
0204	415.0080 Concrete Pavement 8-Inch	14,267.000 SY	_____.____	_____.____
0206	415.0100 Concrete Pavement 10-Inch	22,462.000 SY	_____.____	_____.____
0208	415.0410 Concrete Pavement Approach Slab	1,187.000 SY	_____.____	_____.____
0210	415.1080 Concrete Pavement HES 8-Inch	770.000 SY	_____.____	_____.____
0212	416.0260 Concrete Driveway HES 6-Inch	409.000 SY	_____.____	_____.____
0214	416.0270 Concrete Driveway HES 7-Inch	712.000 SY	_____.____	_____.____
0216	416.0610 Drilled Tie Bars	427.000 EACH	_____.____	_____.____
0218	416.0620 Drilled Dowel Bars	4,453.000 EACH	_____.____	_____.____
0220	416.1010 Concrete Surface Drains	11.000 CY	_____.____	_____.____
0222	450.1100.S Asphaltic Mixture For Extreme Conditions	175.000 TON	_____.____	_____.____
0224	450.4000 HMA Cold Weather Paving	400.000 TON	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0226	455.0605 Tack Coat	26,849.000 GAL	_____.____	_____.____
0228	460.2000 Incentive Density HMA Pavement	39,370.000 DOL	1.00000	39,370.00
0230	460.6223 HMA Pavement 3 MT 58-28 S	46,140.000 TON	_____.____	_____.____
0232	460.6224 HMA Pavement 4 MT 58-28 S	21,885.000 TON	_____.____	_____.____
0234	460.6645 HMA Pavement 5 MT 58-34 V	162.000 TON	_____.____	_____.____
0236	465.0110 Asphaltic Surface Patching	5.000 TON	_____.____	_____.____
0238	465.0120 Asphaltic Surface Driveways and Field Entrances	472.000 TON	_____.____	_____.____
0240	465.0125 Asphaltic Surface Temporary	7,278.000 TON	_____.____	_____.____
0242	465.0310 Asphaltic Curb	1,855.000 LF	_____.____	_____.____
0244	495.1000.S Cold patch	60.000 TON	_____.____	_____.____
0246	501.1000.S Ice Hot Weather Concreting	61,718.000 LB	_____.____	_____.____
0248	502.0100 Concrete Masonry Bridges	920.000 CY	_____.____	_____.____
0250	502.3101 Expansion Device	224.000 LF	_____.____	_____.____
0252	502.3200 Protective Surface Treatment	2,905.000 SY	_____.____	_____.____
0254	502.3205 Pigmented Surface Sealer Reseal	42.000 SY	_____.____	_____.____
0256	502.3210 Pigmented Surface Sealer	4,651.000 SY	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0258	502.3215 Protective Surface Treatment Reseal	1,684.000 SY	_____.____	_____.____
0260	502.4205 Adhesive Anchors No. 5 Bar	3,051.000 EACH	_____.____	_____.____
0262	502.4206 Adhesive Anchors No. 6 Bar	296.000 EACH	_____.____	_____.____
0264	502.4208 Adhesive Anchors No. 8 Bar	16.000 EACH	_____.____	_____.____
0266	503.0137 Prestressed Girder Type I 36W-Inch	966.000 LF	_____.____	_____.____
0268	504.0100 Concrete Masonry Culverts	602.000 CY	_____.____	_____.____
0270	504.0500 Concrete Masonry Retaining Walls	5,120.000 CY	_____.____	_____.____
0272	505.0400 Bar Steel Reinforcement HS Structures	2,087,660.000 LB	_____.____	_____.____
0274	505.0600 Bar Steel Reinforcement HS Coated Structures	978,040.000 LB	_____.____	_____.____
0276	505.0800.S Bar Steel Reinforcement HS Stainless Structures	4,140.000 LB	_____.____	_____.____
0278	505.0905 Bar Couplers No. 5	524.000 EACH	_____.____	_____.____
0280	505.0906 Bar Couplers No. 6	40.000 EACH	_____.____	_____.____
0282	505.0911 Bar Couplers No. 11	168.000 EACH	_____.____	_____.____
0284	506.0105 Structural Steel Carbon	20,274.000 LB	_____.____	_____.____
0286	506.0605 Structural Steel HS	1,820,655.000 LB	_____.____	_____.____
0288	506.2605 Bearing Pads Elastomeric Non-Laminated	40.000 EACH	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0290	506.3004 Welded Stud Shear Connectors 3/4x4-Inch	54.000 EACH	_____.____	_____.____
0292	506.3010 Welded Stud Shear Connectors 7/8x5-Inch	3,164.000 EACH	_____.____	_____.____
0294	506.3015 Welded Stud Shear Connectors 7/8x6-Inch	2,652.000 EACH	_____.____	_____.____
0296	506.4000 Steel Diaphragms (structure) 0009. B-40-1026	6.000 EACH	_____.____	_____.____
0298	506.4000 Steel Diaphragms (structure) 0010. B-40-1027	6.000 EACH	_____.____	_____.____
0300	506.5000 Bearing Assemblies Fixed (structure) 0003. B-40-732	4.000 EACH	_____.____	_____.____
0302	506.5000 Bearing Assemblies Fixed (structure) 0005. B-40-734	2.000 EACH	_____.____	_____.____
0304	509.0301 Preparation Decks Type 1	98.000 SY	_____.____	_____.____
0306	509.0302 Preparation Decks Type 2	2.000 SY	_____.____	_____.____
0308	509.0310.S Sawing Pavement Deck Preparation Areas	743.000 LF	_____.____	_____.____
0310	509.1000 Joint Repair	105.000 SY	_____.____	_____.____
0312	509.1500 Concrete Surface Repair	160.000 SF	_____.____	_____.____
0314	509.2000 Full-Depth Deck Repair	2.000 SY	_____.____	_____.____
0316	509.2100.S Concrete Masonry Deck Repair	9.000 CY	_____.____	_____.____
0318	509.5100.S Polymer Overlay	4,824.000 SY	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0320	509.9010.S Removing Asphaltic Concrete Deck Overlay (structure) 0001. B-40-577	587.000 SY	_____.____	_____.____
0322	509.9010.S Removing Asphaltic Concrete Deck Overlay (structure) 0002. B-40-578	587.000 SY	_____.____	_____.____
0324	511.1200 Temporary Shoring (structure) 0008. B-40-921	7,104.000 SF	_____.____	_____.____
0326	511.1200 Temporary Shoring (structure) 0009. B-40-1026	1,182.000 SF	_____.____	_____.____
0328	511.1200 Temporary Shoring (structure) 0110. R-40-642	800.000 SF	_____.____	_____.____
0330	511.1200 Temporary Shoring (structure) 0114. R-40-647	200.000 SF	_____.____	_____.____
0332	511.1200 Temporary Shoring (structure) 0202. S-40-3033	195.000 SF	_____.____	_____.____
0334	511.1300 Temporary Shoring (location) 0010.	39,115.000 SF	_____.____	_____.____
0336	511.1300 Temporary Shoring (location) 0010. Location	2,960.000 SF	_____.____	_____.____
0338	511.2200 Temporary Shoring Left in Place (structure) 0101. R-40-412	770.000 SF	_____.____	_____.____
0340	511.2200 Temporary Shoring Left in Place (structure) 0102. R-40-413	620.000 SF	_____.____	_____.____
0342	513.2001 Railing Pipe	788.000 LF	_____.____	_____.____
0344	513.4091 Railing Tubular Screening	2,571.000 LF	_____.____	_____.____
0346	514.1000 Railroad Deck Drains System (railroad structure) 0008. B-40-921	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0348	514.2625 Downspout 6-Inch	157.000 LF	_____._____	_____._____
0350	516.0100 Dampproofing	336.000 SY	_____._____	_____._____
0352	516.0500 Rubberized Membrane Waterproofing	598.000 SY	_____._____	_____._____
0354	516.0600.S Sheet Membrane Waterproofing	1,174.000 SY	_____._____	_____._____
0356	517.0600 Painting Epoxy System (structure) 0003. B-40-732	LS	LUMP SUM	_____._____
0358	517.0600 Painting Epoxy System (structure) 0005. B-40-734	LS	LUMP SUM	_____._____
0360	517.0600 Painting Epoxy System (structure) 0008. B-40-921	LS	LUMP SUM	_____._____
0362	517.0600 Painting Epoxy System (structure) 0109. B-40-641	LS	LUMP SUM	_____._____
0364	517.0600 Painting Epoxy System (structure) 0110. R-40-642	LS	LUMP SUM	_____._____
0366	517.0901.S Preparation and Coating of Top Flanges (structure) 0003. B-40-732	1.000 EACH	_____._____	_____._____
0368	517.0901.S Preparation and Coating of Top Flanges (structure) 0004. B-40-733	1.000 EACH	_____._____	_____._____
0370	517.0901.S Preparation and Coating of Top Flanges (structure) 0005. B-40-734	1.000 EACH	_____._____	_____._____
0372	517.0901.S Preparation and Coating of Top Flanges (structure) 0006. B-40-735	1.000 EACH	_____._____	_____._____
0374	517.1801.S Structure Repainting Recycled Abrasive (structure) 0001. B-40-577	1.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0376	517.1801.S Structure Repainting Recycled Abrasive (structure) 0002. B-40-578	1.000 EACH	_____.____	_____.____
0378	517.4501.S Negative Pressure Containment and Collection of Waste Materials (structure) 0001. B-40-577	1.000 EACH	_____.____	_____.____
0380	517.4501.S Negative Pressure Containment and Collection of Waste Materials (structure) 0002. B-40-578	1.000 EACH	_____.____	_____.____
0382	517.6001.S Portable Decontamination Facility	2.000 EACH	_____.____	_____.____
0384	521.1012 Apron Endwalls for Culvert Pipe Steel 12-Inch	2.000 EACH	_____.____	_____.____
0386	521.3112 Culvert Pipe Corrugated Steel 12-Inch	22.000 LF	_____.____	_____.____
0388	522.0412 Culvert Pipe Reinforced Concrete Class IV 12-Inch	30.000 LF	_____.____	_____.____
0390	522.0518 Culvert Pipe Reinforced Concrete Class V 18-Inch	35.000 LF	_____.____	_____.____
0392	522.1012 Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	12.000 EACH	_____.____	_____.____
0394	522.1015 Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	5.000 EACH	_____.____	_____.____
0396	522.1018 Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	17.000 EACH	_____.____	_____.____
0398	522.1024 Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	8.000 EACH	_____.____	_____.____
0400	522.1030 Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0402	522.1036 Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	8.000 EACH	_____.____	_____.____
0404	522.1042 Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	4.000 EACH	_____.____	_____.____
0406	522.1054 Apron Endwalls for Culvert Pipe Reinforced Concrete 54-Inch	1.000 EACH	_____.____	_____.____
0408	522.1072 Apron Endwalls for Culvert Pipe Reinforced Concrete 72-Inch	1.000 EACH	_____.____	_____.____
0410	531.1100 Concrete Masonry Ancillary Structures Type NS	191.000 CY	_____.____	_____.____
0412	531.1140 Steel Reinforcement HS Ancillary Structures Type NS	20,137.000 LB	_____.____	_____.____
0414	531.1160 Steel Reinforcement HS Coated Ancillary Structures Type NS	23,540.000 LB	_____.____	_____.____
0416	531.2024 Drilling Shaft 24-Inch	158.000 LF	_____.____	_____.____
0418	531.2030 Drilling Shaft 30-Inch	65.000 LF	_____.____	_____.____
0420	531.2036 Drilling Shaft 36-Inch	642.000 LF	_____.____	_____.____
0422	531.2042 Drilling Shaft 42-Inch	197.000 LF	_____.____	_____.____
0424	531.2048 Drilling Shaft 48-Inch	46.000 LF	_____.____	_____.____
0426	531.4050 Foundation Camera Pole 50-FT	3.000 EACH	_____.____	_____.____
0428	531.5220 Foundation Single-Shaft Type MF-II (structure) 0213. S-40-3045	2.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0430	531.5220 Foundation Single-Shaft Type MF-II (structure) 0214. S-40-3046	1.000 EACH	_____.____	_____.____
0432	531.5220 Foundation Single-Shaft Type MF-II (structure) 0218. S-40-3050	2.000 EACH	_____.____	_____.____
0434	531.5310 Foundation Single-Shaft Type TC-I (structure) 0211. S-40-3043	1.000 EACH	_____.____	_____.____
0436	531.5330 Foundation Single-Shaft Type TC-III (structure) 0220. S-40-3052	1.000 EACH	_____.____	_____.____
0438	531.5330 Foundation Single-Shaft Type TC-III (structure) 0221. S-40-3053	1.000 EACH	_____.____	_____.____
0440	531.5420 Foundation Single-Shaft Type TF-II (structure) 0209. S-40-3040	2.000 EACH	_____.____	_____.____
0442	531.5420 Foundation Single-Shaft Type TF-II (structure) 0217. S-40-3049	2.000 EACH	_____.____	_____.____
0444	531.5420 Foundation Single-Shaft Type TF-II (structure) 0223. S-40-3055	2.000 EACH	_____.____	_____.____
0446	531.5420 Foundation Single-Shaft Type TF-II (structure) 0224. S-40-3056	2.000 EACH	_____.____	_____.____
0448	531.5430 Foundation Single-Shaft Type TF-III (structure) 0210. S-40-3041	2.000 EACH	_____.____	_____.____
0450	531.5440 Foundation Single-Shaft Type TF-IV (structure) 0207. S-40-3038	1.000 EACH	_____.____	_____.____
0452	531.5440 Foundation Single-Shaft Type TF-IV (structure) 0212. S-40-3044	2.000 EACH	_____.____	_____.____
0454	531.5440 Foundation Single-Shaft Type TF-IV (structure) 0219. S-40-3051	2.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0456	531.5440 Foundation Single-Shaft Type TF-IV (structure) 0222. S-40-3054	2.000 EACH	_____._____	_____._____
0458	531.6010 Foundation Two-Shaft Type FC-I (structure) 0215. S-40-3047	1.000 EACH	_____._____	_____._____
0460	531.6010 Foundation Two-Shaft Type FC-I (structure) 0216. S-40-3048	1.000 EACH	_____._____	_____._____
0462	531.6010 Foundation Two-Shaft Type FC-I (structure) 0225. S-40-3057	1.000 EACH	_____._____	_____._____
0464	531.6120 Foundation Two-Shaft Type FF-II (structure) 0201. S-40-461	2.000 EACH	_____._____	_____._____
0466	531.8990 Anchor Assemblies Poles on Structures	3.000 EACH	_____._____	_____._____
0468	532.5020 Butterfly 2-Chord NS (structure) 0203. S-40-3034	1.000 EACH	_____._____	_____._____
0470	532.5020 Butterfly 2-Chord NS (structure) 0208. S-40-3039	1.000 EACH	_____._____	_____._____
0472	532.5220 Monotube Full Span Type II (structure) 0213. S-40-3045	1.000 EACH	_____._____	_____._____
0474	532.5220 Monotube Full Span Type II (structure) 0214. S-40-3046	1.000 EACH	_____._____	_____._____
0476	532.5220 Monotube Full Span Type II (structure) 0218. S-40-3050	1.000 EACH	_____._____	_____._____
0478	532.5310 Truss Cantilever 2-Chord Type I (structure) 0211. S-40-3043	1.000 EACH	_____._____	_____._____
0480	532.5330 Truss Cantilever 2-Chord Type III (structure) 0220. S-40-3052	1.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0482	532.5330 Truss Cantilever 2-Chord Type III (structure) 0221. S-40-3053	1.000 EACH	_____._____	_____._____
0484	532.5420 Truss Full Span 2-Chord Type II (structure) 0209. S-40-3040	1.000 EACH	_____._____	_____._____
0486	532.5420 Truss Full Span 2-Chord Type II (structure) 0217. S-40-3049	1.000 EACH	_____._____	_____._____
0488	532.5420 Truss Full Span 2-Chord Type II (structure) 0223. S-40-3055	1.000 EACH	_____._____	_____._____
0490	532.5420 Truss Full Span 2-Chord Type II (structure) 0224. S-40-3056	1.000 EACH	_____._____	_____._____
0492	532.5430 Truss Full Span 2-Chord Type III (structure) 0210. S-40-3041	1.000 EACH	_____._____	_____._____
0494	532.5440 Truss Full Span 2-Chord Type IV (structure) 0207. S-40-3038	1.000 EACH	_____._____	_____._____
0496	532.5440 Truss Full Span 2-Chord Type IV (structure) 0212. S-40-3044	1.000 EACH	_____._____	_____._____
0498	532.5440 Truss Full Span 2-Chord Type IV (structure) 0219. S-40-3051	1.000 EACH	_____._____	_____._____
0500	532.5440 Truss Full Span 2-Chord Type IV (structure) 0222. S-40-3054	1.000 EACH	_____._____	_____._____
0502	532.6010 Truss Cantilever 4-Chord Type I (structure) 0204. S-40-3035	1.000 EACH	_____._____	_____._____
0504	532.6010 Truss Cantilever 4-Chord Type I (structure) 0205. S-40-3036	1.000 EACH	_____._____	_____._____
0506	532.6010 Truss Cantilever 4-Chord Type I (structure) 0206. S-40-3037	1.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0508	532.6010 Truss Cantilever 4-Chord Type I (structure) 0215. S-40-3047	1.000 EACH	_____.____	_____.____
0510	532.6010 Truss Cantilever 4-Chord Type I (structure) 0216. S-40-3048	1.000 EACH	_____.____	_____.____
0512	532.6010 Truss Cantilever 4-Chord Type I (structure) 0225. S-40-3057	1.000 EACH	_____.____	_____.____
0514	532.6020 Truss Cantilever 4-Chord Type II (structure) 0202. S-40-3033	1.000 EACH	_____.____	_____.____
0516	532.6120 Truss Full Span 4-Chord Type II (structure) 0201. S-40-461	1.000 EACH	_____.____	_____.____
0518	541.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 0301. N-40-99	54,400.000 SF	_____.____	_____.____
0520	541.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 0302. N-40-100	145,600.000 SF	_____.____	_____.____
0522	541.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 0303. N-40-102	47,310.000 SF	_____.____	_____.____
0524	541.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 0304. N-40-103	49,600.000 SF	_____.____	_____.____
0526	550.0010 Pre-Boring Unconsolidated Materials	225.000 LF	_____.____	_____.____
0528	550.0500 Pile Points	109.000 EACH	_____.____	_____.____
0530	550.1100 Piling Steel HP 10-Inch X 42 Lb	2,350.000 LF	_____.____	_____.____
0532	550.1120 Piling Steel HP 12-Inch X 53 Lb	1,320.000 LF	_____.____	_____.____
0534	601.0319 Concrete Curb & Gutter 19-Inch	847.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0536	601.0331 Concrete Curb & Gutter 31-Inch	8,656.000 LF	_____._____	_____._____
0538	601.0407 Concrete Curb & Gutter 18-Inch Type D	284.000 LF	_____._____	_____._____
0540	601.0409 Concrete Curb & Gutter 30-Inch Type A	10,441.000 LF	_____._____	_____._____
0542	601.0411 Concrete Curb & Gutter 30-Inch Type D	18,044.000 LF	_____._____	_____._____
0544	601.0413 Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type G	592.000 LF	_____._____	_____._____
0546	601.0555 Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type A	1,142.000 LF	_____._____	_____._____
0548	601.0557 Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	322.000 LF	_____._____	_____._____
0550	601.0580 Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type R	220.000 LF	_____._____	_____._____
0552	601.0600 Concrete Curb Pedestrian	50.000 LF	_____._____	_____._____
0554	602.0410 Concrete Sidewalk 5-Inch	104,688.000 SF	_____._____	_____._____
0556	602.0505 Curb Ramp Detectable Warning Field Yellow	980.000 SF	_____._____	_____._____
0558	602.0605 Curb Ramp Detectable Warning Field Radial Yellow	646.000 SF	_____._____	_____._____
0560	603.1442 Concrete Barrier Type S42C	1,297.000 LF	_____._____	_____._____
0562	603.1456 Concrete Barrier Type S56C	780.000 LF	_____._____	_____._____
0564	603.3513 Concrete Barrier Transition Type S32 to S36	3.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0566	603.3535 Concrete Barrier Transition Type S36 to S42	6.000 EACH	_____.____	_____.____
0568	603.3559 Concrete Barrier Transition Type S42 to S56	54.000 EACH	_____.____	_____.____
0570	603.3613 Concrete Barrier Transition Type V32 to S36	3.000 EACH	_____.____	_____.____
0572	603.8000 Concrete Barrier Temporary Precast Delivered	107,459.000 LF	_____.____	_____.____
0574	603.8125 Concrete Barrier Temporary Precast Installed	184,001.000 LF	_____.____	_____.____
0576	603.8500 Anchoring Concrete Barrier Temporary Precast	146,096.000 LF	_____.____	_____.____
0578	604.0400 Slope Paving Concrete	90.000 SY	_____.____	_____.____
0580	606.0100 Riprap Light	31.000 CY	_____.____	_____.____
0582	606.0200 Riprap Medium	166.000 CY	_____.____	_____.____
0584	606.0300 Riprap Heavy	1,091.000 CY	_____.____	_____.____
0586	608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	174.000 LF	_____.____	_____.____
0588	608.0315 Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	1,950.000 LF	_____.____	_____.____
0590	608.0318 Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	14,034.000 LF	_____.____	_____.____
0592	608.0324 Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	18,759.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0594	608.0330 Storm Sewer Pipe Reinforced Concrete Class III 30-Inch	6,303.000 LF	_____.____	_____.____
0596	608.0336 Storm Sewer Pipe Reinforced Concrete Class III 36-Inch	2,430.000 LF	_____.____	_____.____
0598	608.0342 Storm Sewer Pipe Reinforced Concrete Class III 42-Inch	977.000 LF	_____.____	_____.____
0600	608.0348 Storm Sewer Pipe Reinforced Concrete Class III 48-Inch	1,144.000 LF	_____.____	_____.____
0602	608.0354 Storm Sewer Pipe Reinforced Concrete Class III 54-Inch	228.000 LF	_____.____	_____.____
0604	608.0384 Storm Sewer Pipe Reinforced Concrete Class III 84-Inch	2,418.000 LF	_____.____	_____.____
0606	608.0412 Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	297.000 LF	_____.____	_____.____
0608	608.0415 Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	1,061.000 LF	_____.____	_____.____
0610	608.0418 Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	4,162.000 LF	_____.____	_____.____
0612	608.0424 Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	1,690.000 LF	_____.____	_____.____
0614	608.0430 Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch	655.000 LF	_____.____	_____.____
0616	608.0436 Storm Sewer Pipe Reinforced Concrete Class IV 36-Inch	1,591.000 LF	_____.____	_____.____
0618	608.0442 Storm Sewer Pipe Reinforced Concrete Class IV 42-Inch	293.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0620	608.0448 Storm Sewer Pipe Reinforced Concrete Class IV 48-Inch	1,192.000 LF	_____.____	_____.____
0622	608.0454 Storm Sewer Pipe Reinforced Concrete Class IV 54-Inch	900.000 LF	_____.____	_____.____
0624	608.0472 Storm Sewer Pipe Reinforced Concrete Class IV 72-Inch	189.000 LF	_____.____	_____.____
0626	608.0512 Storm Sewer Pipe Reinforced Concrete Class V 12-Inch	28.000 LF	_____.____	_____.____
0628	608.0518 Storm Sewer Pipe Reinforced Concrete Class V 18-Inch	152.000 LF	_____.____	_____.____
0630	608.0524 Storm Sewer Pipe Reinforced Concrete Class V 24-Inch	636.000 LF	_____.____	_____.____
0632	608.0536 Storm Sewer Pipe Reinforced Concrete Class V 36-Inch	751.000 LF	_____.____	_____.____
0634	608.0542 Storm Sewer Pipe Reinforced Concrete Class V 42-Inch	32.000 LF	_____.____	_____.____
0636	608.3012 Storm Sewer Pipe Class III-A 12-Inch	40.000 LF	_____.____	_____.____
0638	608.3015 Storm Sewer Pipe Class III-A 15-Inch	704.000 LF	_____.____	_____.____
0640	608.3018 Storm Sewer Pipe Class III-A 18-Inch	937.000 LF	_____.____	_____.____
0642	608.3036 Storm Sewer Pipe Class III-A 36-Inch	822.000 LF	_____.____	_____.____
0644	608.6008 Storm Sewer Pipe Composite 8-Inch	7.000 LF	_____.____	_____.____
0646	611.0420 Reconstructing Manholes	19.000 EACH	_____.____	_____.____
0648	611.0430 Reconstructing Inlets	67.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0650	611.0530 Manhole Covers Type J	30.000 EACH	_____.____	_____.____
0652	611.0535 Manhole Covers Type J-Special	50.000 EACH	_____.____	_____.____
0654	611.0550 Manhole Covers Type M	1.000 EACH	_____.____	_____.____
0656	611.0610 Inlet Covers Type BW	489.000 EACH	_____.____	_____.____
0658	611.0612 Inlet Covers Type C	1.000 EACH	_____.____	_____.____
0660	611.0615 Inlet Covers Type F	7.000 EACH	_____.____	_____.____
0662	611.0624 Inlet Covers Type H	202.000 EACH	_____.____	_____.____
0664	611.0627 Inlet Covers Type HM	1.000 EACH	_____.____	_____.____
0666	611.0642 Inlet Covers Type MS	103.000 EACH	_____.____	_____.____
0670	611.0657 Inlet Covers Type W	27.000 EACH	_____.____	_____.____
0672	611.0666 Inlet Covers Type Z	7.000 EACH	_____.____	_____.____
0674	611.1004 Catch Basins 4-FT Diameter	73.000 EACH	_____.____	_____.____
0676	611.1005 Catch Basins 5-FT Diameter	7.000 EACH	_____.____	_____.____
0678	611.1006 Catch Basins 6-FT Diameter	15.000 EACH	_____.____	_____.____
0680	611.2004 Manholes 4-FT Diameter	11.000 EACH	_____.____	_____.____
0682	611.2005 Manholes 5-FT Diameter	100.000 EACH	_____.____	_____.____
0684	611.2006 Manholes 6-FT Diameter	58.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0686	611.2007 Manholes 7-FT Diameter	30.000 EACH	_____.____	_____.____
0688	611.2008 Manholes 8-FT Diameter	41.000 EACH	_____.____	_____.____
0690	611.3004 Inlets 4-FT Diameter	448.000 EACH	_____.____	_____.____
0692	611.3901 Inlets Median 1 Grate	13.000 EACH	_____.____	_____.____
0694	611.3902 Inlets Median 2 Grate	45.000 EACH	_____.____	_____.____
0696	611.8110 Adjusting Manhole Covers	24.000 EACH	_____.____	_____.____
0698	611.8115 Adjusting Inlet Covers	82.000 EACH	_____.____	_____.____
0700	611.8120.S Cover Plates Temporary	220.000 EACH	_____.____	_____.____
0702	611.9800.S Pipe Grates	1.000 EACH	_____.____	_____.____
0704	612.0106 Pipe Underdrain 6-Inch	83,365.000 LF	_____.____	_____.____
0706	612.0206 Pipe Underdrain Unperforated 6-Inch	1,716.000 LF	_____.____	_____.____
0708	612.0406 Pipe Underdrain Wrapped 6-Inch	21,214.000 LF	_____.____	_____.____
0710	612.0806 Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	44.000 EACH	_____.____	_____.____
0712	614.0150 Anchor Assemblies for Steel Plate Beam Guard	2.000 EACH	_____.____	_____.____
0714	614.0397 Guardrail Mow Strip Emulsified Asphalt	26.000 SY	_____.____	_____.____
0716	614.0800 Crash Cushions Permanent	2.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0718	614.0805 Crash Cushions Permanent Low Maintenance	6.000 EACH	_____.____	_____.____
0720	614.0905 Crash Cushions Temporary	31.000 EACH	_____.____	_____.____
0722	614.0920 Salvaged Rail	9,353.000 LF	_____.____	_____.____
0724	614.0930 Salvaged Crash Cushions	2.000 EACH	_____.____	_____.____
0726	614.2300 MGS Guardrail 3	487.000 LF	_____.____	_____.____
0728	614.2310 MGS Guardrail 3 HS	150.000 LF	_____.____	_____.____
0730	614.2500 MGS Thrie Beam Transition	236.000 LF	_____.____	_____.____
0732	614.2610 MGS Guardrail Terminal EAT	6.000 EACH	_____.____	_____.____
0734	614.2620 MGS Guardrail Terminal Type 2	4.000 EACH	_____.____	_____.____
0736	614.8010 Anchor Post Assembly Top Mount	22.000 EACH	_____.____	_____.____
0738	616.0206 Fence Chain Link 6-FT	22,536.000 LF	_____.____	_____.____
0740	616.0329 Gates Chain Link (width) 0001. 4-FT	2.000 EACH	_____.____	_____.____
0742	616.0329 Gates Chain Link (width) 0002. 8-FT	1.000 EACH	_____.____	_____.____
0744	616.0329 Gates Chain Link (width) 0003. 12-FT	5.000 EACH	_____.____	_____.____
0746	616.0700.S Fence Safety	60,000.000 LF	_____.____	_____.____
0748	618.0100 Maintenance And Repair of Haul Roads (project) 0001. 1229-04-71	1.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0750	618.0100 Maintenance And Repair of Haul Roads (project) 0002. 1229-04-72	1.000 EACH	_____._____	_____._____
0752	618.0100 Maintenance And Repair of Haul Roads (project) 0002. 1229-04-73	1.000 EACH	_____._____	_____._____
0754	618.0100 Maintenance And Repair of Haul Roads (project) 0004. 1229-04-77	1.000 EACH	_____._____	_____._____
0756	619.1000 Mobilization	1.000 EACH	_____._____	_____._____
0758	620.0100 Concrete Corrugated Median	520.000 SF	_____._____	_____._____
0760	620.0200 Concrete Median Blunt Nose	148.000 SF	_____._____	_____._____
0762	620.0300 Concrete Median Sloped Nose	3,710.000 SF	_____._____	_____._____
0764	624.0100 Water	1,967.000 MGAL	_____._____	_____._____
0766	627.0200 Mulching	30,000.000 SY	_____._____	_____._____
0768	628.1104 Erosion Bales	950.000 EACH	_____._____	_____._____
0770	628.1504 Silt Fence	43,610.000 LF	_____._____	_____._____
0772	628.1520 Silt Fence Maintenance	43,610.000 LF	_____._____	_____._____
0774	628.1530.S Silt Fence Heavy Duty	13,177.000 LF	_____._____	_____._____
0776	628.1535.S Silt Fence Heavy Duty Maintenance	13,177.000 LF	_____._____	_____._____
0778	628.1905 Mobilizations Erosion Control	61.000 EACH	_____._____	_____._____
0780	628.1910 Mobilizations Emergency Erosion Control	68.000 EACH	_____._____	_____._____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0782	628.2002 Erosion Mat Class I Type A	253,433.000 SY	_____.____	_____.____
0784	628.2006 Erosion Mat Urban Class I Type A	123,482.000 SY	_____.____	_____.____
0786	628.2008 Erosion Mat Urban Class I Type B	16,189.000 SY	_____.____	_____.____
0788	628.6505 Soil Stabilizer Type A	5.000 ACRE	_____.____	_____.____
0790	628.6510 Soil Stabilizer Type B	30.800 ACRE	_____.____	_____.____
0792	628.7005 Inlet Protection Type A	659.000 EACH	_____.____	_____.____
0794	628.7010 Inlet Protection Type B	268.000 EACH	_____.____	_____.____
0796	628.7015 Inlet Protection Type C	292.000 EACH	_____.____	_____.____
0798	628.7020 Inlet Protection Type D	261.000 EACH	_____.____	_____.____
0800	628.7504 Temporary Ditch Checks	4,076.000 LF	_____.____	_____.____
0802	628.7515.S Stone Ditch Checks	100.000 CY	_____.____	_____.____
0804	628.7555 Culvert Pipe Checks	86.000 EACH	_____.____	_____.____
0806	628.7560 Tracking Pads	30.000 EACH	_____.____	_____.____
0808	628.7570 Rock Bags	70.000 EACH	_____.____	_____.____
0810	629.0210 Fertilizer Type B	242.600 CWT	_____.____	_____.____
0812	630.0140 Seeding Mixture No. 40	29.000 LB	_____.____	_____.____
0814	630.0200 Seeding Temporary	4,970.000 LB	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0816	630.0500 Seed Water	3,400.000 MGAL	_____.____	_____.____
0818	633.0200 Delineators Flexible	6.000 EACH	_____.____	_____.____
0820	633.1000 Delineators Barrier Wall	896.000 EACH	_____.____	_____.____
0822	633.5200 Markers Culvert End	53.000 EACH	_____.____	_____.____
0824	634.0618 Posts Wood 4x6-Inch X 18-FT	282.000 EACH	_____.____	_____.____
0826	634.0622 Posts Wood 4x6-Inch X 22-FT	96.000 EACH	_____.____	_____.____
0828	634.0814 Posts Tubular Steel 2x2-Inch X 14-FT	168.000 EACH	_____.____	_____.____
0830	634.0885 Posts Tubular Steel 2x2-Inch X 8.5-FT	119.000 EACH	_____.____	_____.____
0832	635.0200 Sign Supports Structural Steel HS	11,300.000 LB	_____.____	_____.____
0834	636.0050.S Foundation Drilling (diameter) 0010. 36-Inch	5,104.000 LF	_____.____	_____.____
0836	637.1220 Signs Type I Reflective SH	5,054.000 SF	_____.____	_____.____
0838	637.2210 Signs Type II Reflective H	4,631.400 SF	_____.____	_____.____
0840	637.2215 Signs Type II Reflective H Folding	414.140 SF	_____.____	_____.____
0842	637.2230 Signs Type II Reflective F	1,084.630 SF	_____.____	_____.____
0844	638.2101 Moving Signs Type I	2.000 EACH	_____.____	_____.____
0846	638.2102 Moving Signs Type II	17.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0848	638.2601 Removing Signs Type I	29.000 EACH	_____.____	_____.____
0850	638.2602 Removing Signs Type II	471.000 EACH	_____.____	_____.____
0852	638.3000 Removing Small Sign Supports	438.000 EACH	_____.____	_____.____
0854	638.3100 Removing Structural Steel Sign Supports	33.000 EACH	_____.____	_____.____
0856	640.1303.S Pond Liner Clay	5,175.000 CY	_____.____	_____.____
0858	643.0300 Traffic Control Drums	508,187.000 DAY	_____.____	_____.____
0860	643.0420 Traffic Control Barricades Type III	50,707.000 DAY	_____.____	_____.____
0862	643.0500 Traffic Control Flexible Tubular Marker Posts	392.000 EACH	_____.____	_____.____
0864	643.0600 Traffic Control Flexible Tubular Marker Bases	392.000 EACH	_____.____	_____.____
0866	643.0705 Traffic Control Warning Lights Type A	105,624.000 DAY	_____.____	_____.____
0868	643.0715 Traffic Control Warning Lights Type C	67,516.000 DAY	_____.____	_____.____
0870	643.0800 Traffic Control Arrow Boards	3,990.000 DAY	_____.____	_____.____
0872	643.0900 Traffic Control Signs	364,133.000 DAY	_____.____	_____.____
0874	643.0910 Traffic Control Covering Signs Type I	20.000 EACH	_____.____	_____.____
0876	643.0920 Traffic Control Covering Signs Type II	71.000 EACH	_____.____	_____.____
0878	643.1000 Traffic Control Signs Fixed Message	2,490.500 SF	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0880	643.1050 Traffic Control Signs PCMS	1,328.000 DAY	_____.____	_____.____
0882	643.1051 Traffic Control Signs PCMS with Cellular Communications	250.000 DAY	_____.____	_____.____
0884	643.1055.S Truck or Trailer Mounted Attenuator	20.000 DAY	_____.____	_____.____
0886	643.1070 Traffic Control Cones 42-Inch	4,151.000 DAY	_____.____	_____.____
0888	643.1205.S Basic Traffic Queue Warning System	1,160.000 DAY	_____.____	_____.____
0890	643.4100.S Traffic Control Interim Lane Closure	480.000 EACH	_____.____	_____.____
0892	643.5000 Traffic Control	1.000 EACH	_____.____	_____.____
0894	645.0111 Geotextile Type DF Schedule A	46,386.000 SY	_____.____	_____.____
0896	645.0120 Geotextile Type HR	10,093.000 SY	_____.____	_____.____
0898	645.0130 Geotextile Type R	85.000 SY	_____.____	_____.____
0900	645.0220 Geogrid Type SR	73,978.000 SY	_____.____	_____.____
0902	646.1020 Marking Line Epoxy 4-Inch	55,061.000 LF	_____.____	_____.____
0904	646.1040 Marking Line Grooved Wet Ref Epoxy 4-Inch	127,901.000 LF	_____.____	_____.____
0906	646.1545 Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	280.000 LF	_____.____	_____.____
0908	646.1555 Marking Line Grooved Contrast Permanent Tape 4-Inch	39,985.000 LF	_____.____	_____.____
0910	646.3020 Marking Line Epoxy 8-Inch	7,863.000 LF	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0914	646.5020 Marking Arrow Epoxy	185.000 EACH	_____.____	_____.____
0916	646.5120 Marking Word Epoxy	41.000 EACH	_____.____	_____.____
0918	646.5220 Marking Symbol Epoxy	55.000 EACH	_____.____	_____.____
0920	646.6120 Marking Stop Line Epoxy 18-Inch	1,351.000 LF	_____.____	_____.____
0922	646.6464 Cold Weather Marking Epoxy 4-Inch	30,000.000 LF	_____.____	_____.____
0924	646.6468 Cold Weather Marking Epoxy 8-Inch	8,000.000 LF	_____.____	_____.____
0926	646.7120 Marking Diagonal Epoxy 12-Inch	12,783.000 LF	_____.____	_____.____
0928	646.7220 Marking Chevron Epoxy 24-Inch	519.000 LF	_____.____	_____.____
0930	646.7420 Marking Crosswalk Epoxy Transverse Line 6-Inch	4,746.000 LF	_____.____	_____.____
0932	646.8120 Marking Curb Epoxy	990.000 LF	_____.____	_____.____
0934	646.8220 Marking Island Nose Epoxy	44.000 EACH	_____.____	_____.____
0936	646.9000 Marking Removal Line 4-Inch	65,823.000 LF	_____.____	_____.____
0938	646.9010 Marking Removal Line Water Blasting 4-Inch	170,844.000 LF	_____.____	_____.____
0940	646.9110 Marking Removal Line Water Blasting 8-Inch	5,000.000 LF	_____.____	_____.____
0942	646.9200 Marking Removal Line Wide	3,340.000 LF	_____.____	_____.____
0944	649.0105 Temporary Marking Line Paint 4-Inch	377,709.000 LF	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0946	649.0120 Temporary Marking Line Epoxy 4-Inch	304,480.000 LF	_____.____	_____.____
0948	649.0150 Temporary Marking Line Removable Tape 4-Inch	11,660.000 LF	_____.____	_____.____
0950	649.0205 Temporary Marking Line Paint 8-Inch	5,498.000 LF	_____.____	_____.____
0952	649.0220 Temporary Marking Line Epoxy 8-Inch	11,550.000 LF	_____.____	_____.____
0954	649.0760 Temporary Marking Raised Pavement Marker Type I	20,667.000 EACH	_____.____	_____.____
0956	649.0805 Temporary Marking Stop Line Paint 18-Inch	1,358.000 LF	_____.____	_____.____
0958	652.0125 Conduit Rigid Metallic 2-Inch	207.000 LF	_____.____	_____.____
0960	652.0130 Conduit Rigid Metallic 2 1/2-Inch	28.000 LF	_____.____	_____.____
0962	652.0135 Conduit Rigid Metallic 3-Inch	296.000 LF	_____.____	_____.____
0964	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch	52,402.000 LF	_____.____	_____.____
0966	652.0230 Conduit Rigid Nonmetallic Schedule 40 2 1/2-Inch	693.000 LF	_____.____	_____.____
0968	652.0235 Conduit Rigid Nonmetallic Schedule 40 3-Inch	21,575.000 LF	_____.____	_____.____
0970	652.0605 Conduit Special 2-Inch	506.000 LF	_____.____	_____.____
0972	652.0615 Conduit Special 3-Inch	1,957.000 LF	_____.____	_____.____
0974	652.0700.S Install Conduit into Existing Item	5.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0976	652.0800 Conduit Loop Detector	15,565.000 LF	_____.____	_____.____
0978	653.0135 Pull Boxes Steel 24x36-Inch	60.000 EACH	_____.____	_____.____
0980	653.0140 Pull Boxes Steel 24x42-Inch	211.000 EACH	_____.____	_____.____
0982	653.0220 Junction Boxes 18x6x6-Inch	4.000 EACH	_____.____	_____.____
0984	653.0222 Junction Boxes 18x12x6-Inch	3.000 EACH	_____.____	_____.____
0986	653.0905 Removing Pull Boxes	180.000 EACH	_____.____	_____.____
0988	654.0101 Concrete Bases Type 1	61.000 EACH	_____.____	_____.____
0990	654.0102 Concrete Bases Type 2	13.000 EACH	_____.____	_____.____
0992	654.0105 Concrete Bases Type 5	113.000 EACH	_____.____	_____.____
0994	654.0106 Concrete Bases Type 6	6.000 EACH	_____.____	_____.____
0996	654.0110 Concrete Bases Type 10	11.000 EACH	_____.____	_____.____
0998	654.0113 Concrete Bases Type 13	6.000 EACH	_____.____	_____.____
1000	654.0115 Concrete Bases Type F	4.000 EACH	_____.____	_____.____
1002	654.0120 Concrete Bases Type 10-Special	15.000 EACH	_____.____	_____.____
1004	654.0217 Concrete Control Cabinet Bases Type 9 Special	6.000 EACH	_____.____	_____.____
1006	654.0230 Concrete Control Cabinet Bases Type L30	10.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1008	654.1239 Concrete Control Cabinet Bases ITS	3.000 EACH	_____.____	_____.____
1010	655.0144 Cable In Duct 4-4 AWG	4,520.000 LF	_____.____	_____.____
1012	655.0146 Cable In Duct 4-6 AWG	10,727.000 LF	_____.____	_____.____
1014	655.0148 Cable In Duct 4-8 AWG	1,097.000 LF	_____.____	_____.____
1016	655.0210 Cable Traffic Signal 3-14 AWG	4,692.000 LF	_____.____	_____.____
1018	655.0220 Cable Traffic Signal 4-14 AWG	373.000 LF	_____.____	_____.____
1020	655.0230 Cable Traffic Signal 5-14 AWG	6,093.000 LF	_____.____	_____.____
1022	655.0240 Cable Traffic Signal 7-14 AWG	13,172.000 LF	_____.____	_____.____
1024	655.0250 Cable Traffic Signal 9-14 AWG	2,090.000 LF	_____.____	_____.____
1026	655.0260 Cable Traffic Signal 12-14 AWG	9,776.000 LF	_____.____	_____.____
1028	655.0265 Cable Traffic Signal 15-12 AWG	842.000 LF	_____.____	_____.____
1030	655.0270 Cable Traffic Signal 15-14 AWG	2,049.000 LF	_____.____	_____.____
1032	655.0280 Cable Traffic Signal 19-14 AWG	829.000 LF	_____.____	_____.____
1034	655.0320 Cable Type UF 2-10 AWG Grounded	8,829.000 LF	_____.____	_____.____
1036	655.0325 Cable Type UF 2-8 AWG Grounded	834.000 LF	_____.____	_____.____
1038	655.0510 Electrical Wire Traffic Signals 12 AWG	3,511.000 LF	_____.____	_____.____
1040	655.0515 Electrical Wire Traffic Signals 10 AWG	49,651.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1042	655.0610 Electrical Wire Lighting 12 AWG	55,969.000 LF	_____.____	_____.____
1044	655.0615 Electrical Wire Lighting 10 AWG	3,246.000 LF	_____.____	_____.____
1046	655.0620 Electrical Wire Lighting 8 AWG	65,779.000 LF	_____.____	_____.____
1048	655.0625 Electrical Wire Lighting 6 AWG	64,572.000 LF	_____.____	_____.____
1050	655.0630 Electrical Wire Lighting 4 AWG	55,413.000 LF	_____.____	_____.____
1052	655.0635 Electrical Wire Lighting 2 AWG	100.000 LF	_____.____	_____.____
1054	655.0640 Electrical Wire Lighting 1 AWG	180.000 LF	_____.____	_____.____
1056	655.0700 Loop Detector Lead In Cable	59,224.000 LF	_____.____	_____.____
1058	655.0800 Loop Detector Wire	59,365.000 LF	_____.____	_____.____
1060	655.0900 Traffic Signal EVP Detector Cable	7,464.000 LF	_____.____	_____.____
1062	656.0200 Electrical Service Meter Breaker Pedestal (location) 2001. MBCCTV4000238	LS	LUMP SUM	_____.____
1064	656.0200 Electrical Service Meter Breaker Pedestal (location) 2002. MBCCTV400079	LS	LUMP SUM	_____.____
1066	656.0200 Electrical Service Meter Breaker Pedestal (location) 2003. MBFM400023	LS	LUMP SUM	_____.____
1068	656.0200 Electrical Service Meter Breaker Pedestal (location) 2004. MBRM400141	LS	LUMP SUM	_____.____
1070	656.0200 Electrical Service Meter Breaker Pedestal (location) 2005. DMS400039	LS	LUMP SUM	_____.____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1072	656.0200 Electrical Service Meter Breaker Pedestal (location) 2006. MBSDS400141	LS	LUMP SUM	_____.____
1074	656.0200 Electrical Service Meter Breaker Pedestal (location) 3201. Port Washington Rd & W Bender Rd/W Devon St	LS	LUMP SUM	_____.____
1076	656.0200 Electrical Service Meter Breaker Pedestal (location) 3202. Port Washington Rd & Clovernook Ln	LS	LUMP SUM	_____.____
1078	656.0200 Electrical Service Meter Breaker Pedestal (location) 3301. IH 43 Ramps & Good Hope Rd	LS	LUMP SUM	_____.____
1080	656.0200 Electrical Service Meter Breaker Pedestal (location) 3302. Good Hope Rd & Port Washington Rd	LS	LUMP SUM	_____.____
1082	656.0200 Electrical Service Meter Breaker Pedestal (location) 3303. IH 43 SB Ramps & STH100/Brown Deer Rd	LS	LUMP SUM	_____.____
1084	656.0200 Electrical Service Meter Breaker Pedestal (location) 3304. IH 43 NB Ramps & STH100/Brown Deer Rd	LS	LUMP SUM	_____.____
1086	656.0200 Electrical Service Meter Breaker Pedestal (location) 3305. STH 32/Brown Deer Rd & CTH W/Port Washington Rd	LS	LUMP SUM	_____.____
1088	656.0200 Electrical Service Meter Breaker Pedestal (location) 3501. STH 57/Green Bay Rd & Range Line Rd	LS	LUMP SUM	_____.____
1090	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1001. HL-40-FS	LS	LUMP SUM	_____.____
1092	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1002. HL-40-GH	LS	LUMP SUM	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1094	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1003. HL-40-BR	LS	LUMP SUM	_____.____
1096	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1004. HL-40-NM	LS	LUMP SUM	_____.____
1098	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1005. LCC-TFS1	LS	LUMP SUM	_____.____
1100	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1006. LCC-TNC1	LS	LUMP SUM	_____.____
1102	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1007. LCC-TNM1	LS	LUMP SUM	_____.____
1104	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1008. LLC-GL3	LS	LUMP SUM	_____.____
1106	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1011. LCC-GL1	LS	LUMP SUM	_____.____
1108	656.0400 Electrical Service Main Lugs Only Meter Pedestal (location) 1012. LCC-GL2	LS	LUMP SUM	_____.____
1110	656.0500 Electrical Service Breaker Disconnect Box (location) 2001. CCTV400238	LS	LUMP SUM	_____.____
1112	656.0500 Electrical Service Breaker Disconnect Box (location) 2002. CCTV400079	LS	LUMP SUM	_____.____
1114	656.0500 Electrical Service Breaker Disconnect Box (location) 2003. CBRM400023	LS	LUMP SUM	_____.____
1116	656.0500 Electrical Service Breaker Disconnect Box (location) 2004. SDS400055	LS	LUMP SUM	_____.____
1118	656.0500 Electrical Service Breaker Disconnect Box (location) 2005. DMS400039	LS	LUMP SUM	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1120	656.0500 Electrical Service Breaker Disconnect Box (location) 2006. CCTV400089	LS	LUMP SUM	_____.____
1122	656.0500 Electrical Service Breaker Disconnect Box (location) 2007. SDS400141	LS	LUMP SUM	_____.____
1124	657.0100 Pedestal Bases	59.000 EACH	_____.____	_____.____
1126	657.0210 Transformer Bases Breakaway 15-17 Inch Bolt Circle	72.000 EACH	_____.____	_____.____
1128	657.0255 Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	137.000 EACH	_____.____	_____.____
1130	657.0310 Poles Type 3	12.000 EACH	_____.____	_____.____
1132	657.0315 Poles Type 4	1.000 EACH	_____.____	_____.____
1134	657.0321 Poles Type 5-Steel	2.000 EACH	_____.____	_____.____
1136	657.0322 Poles Type 5-Aluminum	115.000 EACH	_____.____	_____.____
1138	657.0327 Poles Type 6-Aluminum	4.000 EACH	_____.____	_____.____
1140	657.0375 Poles Type A	73.000 EACH	_____.____	_____.____
1142	657.0381 Poles Type F	3.000 EACH	_____.____	_____.____
1144	657.0405 Traffic Signal Standards Aluminum 3.5-FT	10.000 EACH	_____.____	_____.____
1146	657.0420 Traffic Signal Standards Aluminum 13-FT	28.000 EACH	_____.____	_____.____
1148	657.0425 Traffic Signal Standards Aluminum 15-FT	12.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1150	657.0430 Traffic Signal Standards Aluminum 10-FT	9.000 EACH	_____.____	_____.____
1152	657.0605 Luminaire Arms Single Member 4 1/2-Inch Clamp 4-FT	42.000 EACH	_____.____	_____.____
1154	657.0609 Luminaire Arms Single Member 4-Inch Clamp 6-FT	18.000 EACH	_____.____	_____.____
1156	657.0610 Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	94.000 EACH	_____.____	_____.____
1158	657.0620 Luminaire Arms Single Member 6-Inch Clamp 4-FT	118.000 EACH	_____.____	_____.____
1160	658.0173 Traffic Signal Face 3S 12-Inch	129.000 EACH	_____.____	_____.____
1162	658.0174 Traffic Signal Face 4S 12-Inch	15.000 EACH	_____.____	_____.____
1164	658.0175 Traffic Signal Face 5S 12-Inch	10.000 EACH	_____.____	_____.____
1166	658.0416 Pedestrian Signal Face 16-Inch	62.000 EACH	_____.____	_____.____
1168	658.0500 Pedestrian Push Buttons	54.000 EACH	_____.____	_____.____
1170	658.5069 Signal Mounting Hardware (location) 3201. Port Washington Rd & W Bender Rd/W Devon St	LS	LUMP SUM	_____.____
1172	658.5069 Signal Mounting Hardware (location) 3202. Port Washington Rd & Clovernook Ln	LS	LUMP SUM	_____.____
1174	658.5069 Signal Mounting Hardware (location) 3301. IH 43 Ramps & Good Hope Rd	LS	LUMP SUM	_____.____
1176	658.5069 Signal Mounting Hardware (location) 3302. Good Hope Rd & Port Washington Rd	LS	LUMP SUM	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1178	658.5069 Signal Mounting Hardware (location) 3303. IH 43 SB Ramps & STH100/Brown Deer Rd	LS	LUMP SUM	_____.____
1180	658.5069 Signal Mounting Hardware (location) 3304. IH 43 NB Ramps & STH100/Brown Deer Rd	LS	LUMP SUM	_____.____
1182	658.5069 Signal Mounting Hardware (location) 3305. STH 32/Brown Deer Rd & CTH W/Port Washington Rd	LS	LUMP SUM	_____.____
1184	658.5069 Signal Mounting Hardware (location) 3501. STH 57/Green Bay Rd & Range Line Rd	LS	LUMP SUM	_____.____
1186	659.0600 Underdeck Lighting (location) 1001. (B-40-734)	LS	LUMP SUM	_____.____
1188	659.0600 Underdeck Lighting (location) 1002. (B-40-735)	LS	LUMP SUM	_____.____
1190	659.0600 Underdeck Lighting (location) 1003. (B-40-732)	LS	LUMP SUM	_____.____
1192	659.0600 Underdeck Lighting (location) 1004. (B-40-733)	LS	LUMP SUM	_____.____
1194	659.1120 Luminaires Utility LED B	4.000 EACH	_____.____	_____.____
1196	659.1125 Luminaires Utility LED C	175.000 EACH	_____.____	_____.____
1198	659.1130 Luminaires Utility LED D	152.000 EACH	_____.____	_____.____
1200	659.1210 Luminaires Underdeck LED B	16.000 EACH	_____.____	_____.____
1202	659.2230 Lighting Control Cabinets 240/480 30-Inch	10.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1204	659.5000.S Lamp, Ballast, LED, Switch Disposal by Contractor	331.000 EACH	_____._____	_____._____
1206	661.0200 Temporary Traffic Signals for Intersections (location) 3201. Port Washington Rd & W Bender Rd/W Devon St	LS	LUMP SUM	_____._____
1208	661.0200 Temporary Traffic Signals for Intersections (location) 3301. IH 43 SB Ramps & Good Hope Rd	LS	LUMP SUM	_____._____
1210	661.0200 Temporary Traffic Signals for Intersections (location) 3302. IH 43 NB Ramps & Good Hope Rd	LS	LUMP SUM	_____._____
1212	661.0200 Temporary Traffic Signals for Intersections (location) 3303. Good Hope Rd & Port Washington Rd	LS	LUMP SUM	_____._____
1214	661.0200 Temporary Traffic Signals for Intersections (location) 3304. IH 43 SB Ramps & STH100/Brown Deer Rd Stage 1A-1B	LS	LUMP SUM	_____._____
1216	661.0200 Temporary Traffic Signals for Intersections (location) 3305. IH 43 SB Ramps & STH100/Brown Deer Rd Stage 4A-4B	LS	LUMP SUM	_____._____
1218	661.0200 Temporary Traffic Signals for Intersections (location) 3306. IH 43 NB Ramps & STH100/Brown Deer Rd Stage 2	LS	LUMP SUM	_____._____
1220	661.0200 Temporary Traffic Signals for Intersections (location) 3307. IH 43 NB Ramps & STH100/Brown Deer Rd Stage 4B	LS	LUMP SUM	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1222	661.0200 Temporary Traffic Signals for Intersections (location) 3308. STH 32/Brown Deer Rd & CTH W/Port Washington Rd	LS	LUMP SUM	_____.____
1224	661.0300 Generators	14.000 DAY	_____.____	_____.____
1226	670.0100 Field System Integrator	LS	LUMP SUM	_____.____
1228	670.0100 Field System Integrator 3201. Port Washington Rd	LS	LUMP SUM	_____.____
1230	670.0100 Field System Integrator 3301. 1229-04-73 Traffic Signals	LS	LUMP SUM	_____.____
1232	670.0200 ITS Documentation	LS	LUMP SUM	_____.____
1234	670.0200 ITS Documentation 3201. Port Washington Rd	LS	LUMP SUM	_____.____
1236	670.0200 ITS Documentation 3301. 1229-04-73 Traffic Signals	LS	LUMP SUM	_____.____
1238	671.0132 Conduit HDPE 3-Duct 2-Inch	22,465.000 LF	_____.____	_____.____
1240	671.0232 Conduit HDPE Directional Bore 3-Duct 2-Inch	60.000 LF	_____.____	_____.____
1242	673.0105 Communication Vault Type 1	27.000 EACH	_____.____	_____.____
1244	673.0200 Tracer Wire Marker Posts	6.000 EACH	_____.____	_____.____
1246	673.1200.S Install ITS Field Cabinet	3.000 EACH	_____.____	_____.____
1248	673.1225.S Install Pole Mounted Cabinet	6.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1250	674.0200 Cable Microwave Detector	17,660.000 LF	_____.____	_____.____
1252	674.0300 Remove Cable	25,457.000 LF	_____.____	_____.____
1254	674.0400 Reinstall Cable	1,494.000 LF	_____.____	_____.____
1256	675.0100 Install Controller Ramp Meter Processor Assembly	3.000 EACH	_____.____	_____.____
1258	675.0300 Install Mounted Controller Microwave Detector Assembly	20.000 EACH	_____.____	_____.____
1260	677.0150 Install Camera Pole 50-FT	3.000 EACH	_____.____	_____.____
1262	677.0200 Install Camera Assembly	12.000 EACH	_____.____	_____.____
1264	677.9051.S Removing 50-FT Camera Pole	3.000 EACH	_____.____	_____.____
1266	677.9200.S Removing CCTV Camera	3.000 EACH	_____.____	_____.____
1268	678.0006 Install Fiber Optic Cable Outdoor Plant 6-CT	6,705.000 LF	_____.____	_____.____
1270	678.0036 Install Fiber Optic Cable Outdoor Plant 36-CT	1,120.000 LF	_____.____	_____.____
1272	678.0072 Install Fiber Optic Cable Outdoor Plant 72-CT	22,505.000 LF	_____.____	_____.____
1274	678.0100.S Install Overhead Freeway DMS Full Matrix	1.000 EACH	_____.____	_____.____
1276	678.0200 Fiber Optic Splice Enclosure	9.000 EACH	_____.____	_____.____
1278	678.0300 Fiber Optic Splice	362.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1280	678.0400 Fiber Optic Termination	54.000 EACH	_____._____	_____._____
1282	678.0500 Communication System Testing	LS	LUMP SUM	_____._____
1284	678.0500 Communication System Testing 3201. Port Washington Rd	LS	LUMP SUM	_____._____
1286	678.0500 Communication System Testing 3301. 1229-04-73 Traffic Signals	LS	LUMP SUM	_____._____
1288	678.0600 Install Ethernet Switches	17.000 EACH	_____._____	_____._____
1290	690.0150 Sawing Asphalt	7,598.000 LF	_____._____	_____._____
1292	690.0250 Sawing Concrete	66,796.000 LF	_____._____	_____._____
1294	715.0502 Incentive Strength Concrete Structures	25,078.000 DOL	1.00000	25,078.00
1296	715.0603 Incentive Strength Concrete Barrier	34,630.000 DOL	1.00000	34,630.00
1298	715.0715 Incentive Flexural Strength Concrete Pavement	119,813.000 DOL	1.00000	119,813.00
1300	740.0440 Incentive IRI Ride	61,634.000 DOL	1.00000	61,634.00
1302	801.0117 Railroad Flagging Reimbursement	297,000.000 DOL	1.00000	297,000.00
1304	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0001. B-40-577	1.000 EACH	_____._____	_____._____
1306	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0002. B-40-578	1.000 EACH	_____._____	_____._____
1308	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0003. B-40-732	1.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1310	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0004. B-40-733	1.000 EACH	_____._____	_____._____
1312	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0005. B-40-734	1.000 EACH	_____._____	_____._____
1314	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0006. B-40-735	1.000 EACH	_____._____	_____._____
1316	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0007. B-40-24	1.000 EACH	_____._____	_____._____
1318	ASP.1T0A On-the-Job Training Apprentice at $5.00/HR	8,400.000 HRS	5.00000	42,000.00
1320	ASP.1T0G On-the-Job Training Graduate at $5.00/HR	17,280.000 HRS	5.00000	86,400.00
1322	SPV.0035 Special 0001. Roadway Embankment	232,938.000 CY	_____._____	_____._____
1324	SPV.0035 Special 4000. HPC Masonry Structures	658.000 CY	_____._____	_____._____
1326	SPV.0035 Special 4005. Concrete Masonry Soldier Pile Footings	894.000 CY	_____._____	_____._____
1328	SPV.0035 Special 4010. Backfill Controlled Low Strength UPRR	40.840 CY	_____._____	_____._____
1330	SPV.0035 Special 4020. Concrete Masonry Bridges UPRR	966.000 CY	_____._____	_____._____
1332	SPV.0045 Special 1001. Truck Entering Warning System	2,320.000 DAY	_____._____	_____._____
1334	SPV.0045 Special 1002. Combination Work Zone Digital Speed Limit - Speed Feedback Sign Trailer	4,710.000 DAY	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1336	SPV.0060 Special 0001. Survey Project 1229-04-71	1.000 EACH	_____._____	_____._____
1338	SPV.0060 Special 0002. Survey Project 1229-04-72	1.000 EACH	_____._____	_____._____
1340	SPV.0060 Special 0003. Survey Project 1229-04-73	1.000 EACH	_____._____	_____._____
1342	SPV.0060 Special 0004. Survey Project 1229-04-77	1.000 EACH	_____._____	_____._____
1344	SPV.0060 Special 0020. Maintain and Remove Crash Cushion Temporary Left in Place	1.000 EACH	_____._____	_____._____
1346	SPV.0060 Special 0030. Concrete Barrier Transition Type G1	1.000 EACH	_____._____	_____._____
1348	SPV.0060 Special 0031. Concrete Barrier Transition Type G2	1.000 EACH	_____._____	_____._____
1350	SPV.0060 Special 0032. Concrete Barrier Transition Type G3	1.000 EACH	_____._____	_____._____
1352	SPV.0060 Special 0033. Concrete Barrier Transition Type G4	1.000 EACH	_____._____	_____._____
1354	SPV.0060 Special 0034. Concrete Barrier Transition Type M1	1.000 EACH	_____._____	_____._____
1356	SPV.0060 Special 0035. Concrete Barrier Transition Type M2	1.000 EACH	_____._____	_____._____
1358	SPV.0060 Special 0036. Concrete Barrier Transition Type S1	4.000 EACH	_____._____	_____._____
1360	SPV.0060 Special 0037. Concrete Barrier Transition Type Special S42 to S56	2.000 EACH	_____._____	_____._____
1362	SPV.0060 Special 0100. Coring Concrete Wingwalls	2.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1364	SPV.0060 Special 0105. Temporary Concrete Barrier Gate, 24-FT	9.000 EACH	_____.____	_____.____
1366	SPV.0060 Special 0106. Inlets Type Tee Special	5.000 EACH	_____.____	_____.____
1368	SPV.0060 Special 0107. Temporary Storm Sewer Plug	99.000 EACH	_____.____	_____.____
1370	SPV.0060 Special 0108. Structural Concrete Collars	251.000 EACH	_____.____	_____.____
1372	SPV.0060 Special 0110. Reconnect Storm Sewer	244.000 EACH	_____.____	_____.____
1376	SPV.0060 Special 0125. Section Corner Monuments Special	5.000 EACH	_____.____	_____.____
1378	SPV.0060 Special 0130. Salvage and Reinstall Ramp Gate 24-Foot	1.000 EACH	_____.____	_____.____
1380	SPV.0060 Special 0131. Salvage and Reinstall Ramp Gate 28-Foot	2.000 EACH	_____.____	_____.____
1382	SPV.0060 Special 0132. Salvage and Reinstall Ramp Gate 32-Foot	7.000 EACH	_____.____	_____.____
1384	SPV.0060 Special 0133. Salvage and Reinstall Ramp Gate 37-Foot	2.000 EACH	_____.____	_____.____
1386	SPV.0060 Special 0140. Crack and Damage Survey Single or Double Unit Residential	60.000 EACH	_____.____	_____.____
1388	SPV.0060 Special 0141. Crack and Damage Survey Multi-Unit Residential	13.000 EACH	_____.____	_____.____
1390	SPV.0060 Special 0142. Crack and Damage Survey Commercial, Public, or Industrial	37.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1392	SPV.0060 Special 0200. Fastening Sewer Access Covers	30.000 EACH	_____.____	_____.____
1394	SPV.0060 Special 0206. Detention Pond Anti-Seep Collar	1.000 EACH	_____.____	_____.____
1396	SPV.0060 Special 0208. Manhole, 10X10-FT	9.000 EACH	_____.____	_____.____
1398	SPV.0060 Special 0210. Riser Pipe Grate	9.000 EACH	_____.____	_____.____
1400	SPV.0060 Special 0601. Baseline CPM Progress Schedule	1.000 EACH	_____.____	_____.____
1402	SPV.0060 Special 0602. Monthly CPM Progress Schedule Updates	30.000 EACH	_____.____	_____.____
1404	SPV.0060 Special 0700. Brown Deer Pond Outlet Storm Sewer Structure	1.000 EACH	_____.____	_____.____
1406	SPV.0060 Special 0701. Outlet Control Manhole, 10x10 FT	6.000 EACH	_____.____	_____.____
1408	SPV.0060 Special 0710. Temporary Water Diversion Indian Creek	1.000 EACH	_____.____	_____.____
1410	SPV.0060 Special 0800. Geotechnical Instrumentation Track Embankment UPRR	1.000 EACH	_____.____	_____.____
1412	SPV.0060 Special 0910. Traffic Control Open-Close Freeway Entrance Ramp	284.000 EACH	_____.____	_____.____
1414	SPV.0060 Special 0918. Traffic Control Full Freeway Closure	92.000 EACH	_____.____	_____.____
1416	SPV.0060 Special 0920. Install, Maintain, and Remove State Furnished Signs	6.000 EACH	_____.____	_____.____

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1418	SPV.0060 Special 0940. Emergency Response to Traffic Involving Conc Barrier Temp Precast	11.000 EACH	_____.____	_____.____
1420	SPV.0060 Special 0945. Emergency Response to Traffic Incident Involving Crash Cushion	6.000 EACH	_____.____	_____.____
1422	SPV.0060 Special 0950. Exposing Existing Infrastructure Paved Area	12.000 EACH	_____.____	_____.____
1424	SPV.0060 Special 0955. Exposing Existing Infrastructure Unpaved Area	12.000 EACH	_____.____	_____.____
1426	SPV.0060 Special 0960. Contractor Staging Area	1.000 EACH	_____.____	_____.____
1428	SPV.0060 Special 1001. Maintenance of Lighting Systems (1229-04-73)	1.000 EACH	_____.____	_____.____
1430	SPV.0060 Special 1002. Lighting System Intergrator (1229-04-73)	1.000 EACH	_____.____	_____.____
1432	SPV.0060 Special 1003. Lighting System Survey (1229-04-73)	1.000 EACH	_____.____	_____.____
1434	SPV.0060 Special 1004. Installing Conduit and Junction Boxes on the Bridge (B-40-735)	1.000 EACH	_____.____	_____.____
1436	SPV.0060 Special 1005. Wood Pole 60-Foot	8.000 EACH	_____.____	_____.____
1438	SPV.0060 Special 1006. Removing 60-Foot Wood Pole and Floodlights	79.000 EACH	_____.____	_____.____
1440	SPV.0060 Special 1007. Removing 60-Foot Wood Pole	8.000 EACH	_____.____	_____.____
1442	SPV.0060 Special 1008. Luminaires Floodlight 400W HPS	82.000 EACH	_____.____	_____.____

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Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

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Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1444	SPV.0060 Special 1009. Remove Electrical Service Meter Breaker Pedestal Lighting	7.000 EACH	_____.____	_____.____
1446	SPV.0060 Special 1010. Concrete Bases Type B	73.000 EACH	_____.____	_____.____
1448	SPV.0060 Special 1011. Concrete Bases Type 5 Special	5.000 EACH	_____.____	_____.____
1450	SPV.0060 Special 1012. Remove and Salvage Municipal Lighting Units	19.000 EACH	_____.____	_____.____
1452	SPV.0060 Special 1013. Install Salvaged Municipal Lighting Units	4.000 EACH	_____.____	_____.____
1454	SPV.0060 Special 1014. Wood Pole Lighting 60-Foot	79.000 EACH	_____.____	_____.____
1456	SPV.0060 Special 1021. Decorative Lighting Pole And Luminaire Single	11.000 EACH	_____.____	_____.____
1458	SPV.0060 Special 1022. Decorative Lighting Pole and Luminaires Twin	3.000 EACH	_____.____	_____.____
1460	SPV.0060 Special 1023. Concrete Bases Type 5 Modified	14.000 EACH	_____.____	_____.____
1462	SPV.0060 Special 2000. Removing Electrical Service Meter Breaker Pedestal	6.000 EACH	_____.____	_____.____
1464	SPV.0060 Special 2001. Removing Controller Cabinet	8.000 EACH	_____.____	_____.____
1466	SPV.0060 Special 2002. Removing Controller Cabinet Base	8.000 EACH	_____.____	_____.____
1468	SPV.0060 Special 2004. Removing Ramp Control Signal Assembly Sidemount	6.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1470	SPV.0060 Special 2008. Remove Pole	10.000 EACH	_____.____	_____.____
1472	SPV.0060 Special 2010. Temporary Poles Wood 40-Foot	7.000 EACH	_____.____	_____.____
1474	SPV.0060 Special 2011. Temporary Poles Wood 60-Foot	2.000 EACH	_____.____	_____.____
1476	SPV.0060 Special 2013. Ground Rod	10.000 EACH	_____.____	_____.____
1478	SPV.0060 Special 2015. Refocus Vehicle Detector Assembly	20.000 EACH	_____.____	_____.____
1480	SPV.0060 Special 2016. Install Ethernet Radio	13.000 EACH	_____.____	_____.____
1482	SPV.0060 Special 2018. Signal Assembly Advance Flasher Type 1	6.000 EACH	_____.____	_____.____
1484	SPV.0060 Special 2021. Install State-Furnished Pole	2.000 EACH	_____.____	_____.____
1486	SPV.0060 Special 2024. Loop Detector Protection	8.000 EACH	_____.____	_____.____
1488	SPV.0060 Special 2025. Signal Assembly Ramp Control Overhead	9.000 EACH	_____.____	_____.____
1490	SPV.0060 Special 2026. Install Temporary Traffic Camera Assembly	2.000 EACH	_____.____	_____.____
1492	SPV.0060 Special 2027. Install Temporary Traffic Camera Power Assembly	2.000 EACH	_____.____	_____.____
1494	SPV.0060 Special 2028. Remove Temporary Traffic Camera Assembly	2.000 EACH	_____.____	_____.____
1496	SPV.0060 Special 2029. Remove Temporary Traffic Camera Power Assembly	2.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1498	SPV.0060 Special 3001. Install Poles Type 9	7.000 EACH	_____.____	_____.____
1500	SPV.0060 Special 3002. Install Poles Type 10	4.000 EACH	_____.____	_____.____
1502	SPV.0060 Special 3003. Install Poles Type 9-Special	5.000 EACH	_____.____	_____.____
1504	SPV.0060 Special 3004. Install Poles Type 10-Special	10.000 EACH	_____.____	_____.____
1506	SPV.0060 Special 3006. Install Poles Type 13	6.000 EACH	_____.____	_____.____
1508	SPV.0060 Special 3007. Install Monotube Arms 15-FT	1.000 EACH	_____.____	_____.____
1510	SPV.0060 Special 3008. Install Monotube Arms 20-FT	4.000 EACH	_____.____	_____.____
1512	SPV.0060 Special 3009. Install Monotube Arms 25-FT	2.000 EACH	_____.____	_____.____
1514	SPV.0060 Special 3010. Install Monotube Arms 30-FT	4.000 EACH	_____.____	_____.____
1516	SPV.0060 Special 3012. Install Monotube Arms 35-FT-Special	6.000 EACH	_____.____	_____.____
1518	SPV.0060 Special 3014. Install Monotube Arms 40-FT-Special	3.000 EACH	_____.____	_____.____
1520	SPV.0060 Special 3016. Install Monotube Arms 45-FT-Special	6.000 EACH	_____.____	_____.____
1522	SPV.0060 Special 3017. Install Monotube Arms 50-FT	5.000 EACH	_____.____	_____.____
1524	SPV.0060 Special 3018. Install Monotube Arms 55-FT	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1526	SPV.0060 Special 3019. Install Luminaire Arms Steel 15-FT	25.000 EACH	_____.____	_____.____
1528	SPV.0060 Special 3201. Backplates with Reflective Border 3 Section 12-Inch	27.000 EACH	_____.____	_____.____
1530	SPV.0060 Special 3202. Backplates with Reflective Border 4 Section 12-Inch	13.000 EACH	_____.____	_____.____
1532	SPV.0060 Special 3203. Backplates with Reflective Border 5 Section 12-Inch	2.000 EACH	_____.____	_____.____
1534	SPV.0060 Special 3204. Contractor Furn Traffic Signal Control Cabinet Port Wash Rd & Bender Rd	1.000 EACH	_____.____	_____.____
1536	SPV.0060 Special 3205. Contractor Furn Traffic Signal Control Cabinet Port Wash Rd & Clovernook	1.000 EACH	_____.____	_____.____
1538	SPV.0060 Special 3206. Trnspt Traffic Sig & Inter Lighting Materials Port Wash Rd & Bender Rd	1.000 EACH	_____.____	_____.____
1540	SPV.0060 Special 3207. Trnspt Traffic Sig & Inter Lighting Materials Port wash Rd & Clovernook	1.000 EACH	_____.____	_____.____
1542	SPV.0060 Special 3208. Emergency Vehicle Detection System Port Wash Rd & Bender Rd	1.000 EACH	_____.____	_____.____
1544	SPV.0060 Special 3209. Emergency Vehicle Detection System Port Washington Rd & Clovernook Ln	1.000 EACH	_____.____	_____.____
1546	SPV.0060 Special 3210. Trnsprt & Install S-F FO Cable Pigtail Port Wash Rd & Bender Rd	1.000 EACH	_____.____	_____.____
1548	SPV.0060 Special 3301. Traffic Signal Vault	2.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1550	SPV.0060 Special 3302. Trnspt & Install S-F Traffic Signal Cabinet IH 43 Ramps & Good Hope Rd	2.000 EACH	_____.____	_____.____
1552	SPV.0060 Special 3303. Trnspt & Install S-F Traffic Signal Cabinet IH 43 SB Ramps & STH100	1.000 EACH	_____.____	_____.____
1554	SPV.0060 Special 3304. Trnspt & Install S-F Traffic Signal Cabinet IH 43 NB Ramps & STH100	1.000 EACH	_____.____	_____.____
1556	SPV.0060 Special 3305. Trnspt & Install S-F Traffic Signal Cabinet Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
1558	SPV.0060 Special 3306. Traffic Signal Cabinet 16-Phase, Good Hope Rd & Port Washington Rd	1.000 EACH	_____.____	_____.____
1560	SPV.0060 Special 3307. Trnspt Traffic Sig & Inter Lighting materials IH 43 Ramps & Good Hope	1.000 EACH	_____.____	_____.____
1562	SPV.0060 Special 3308. Trnspt Traffic Sig & Inter Lighting Materials Good Hope & Port Wash Rd	1.000 EACH	_____.____	_____.____
1564	SPV.0060 Special 3309. Trnspt Traffic Signals & Inter Lighting Materials IH 43 SB Ramps & STH100	1.000 EACH	_____.____	_____.____
1566	SPV.0060 Special 3310. Trnspt Traffic Signals & Inter Lighting Materials IH 43 NB Ramps & STH100	1.000 EACH	_____.____	_____.____
1568	SPV.0060 Special 3311. Trnspt Traffic Signals & Inter Lighting Materials Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
1570	SPV.0060 Special 3312. Trnsprt & Install S-F Radar Detection System IH 43 Ramps & Good Hope	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1572	SPV.0060 Special 3313. Trnsprt & Install S-F Radar Detection System IH 43 SB Ramps & STH100	1.000 EACH	_____.____	_____.____
1574	SPV.0060 Special 3314. Trnsprt & Install S-F Radar Detection System IH 43 NB Ramps & STH100	1.000 EACH	_____.____	_____.____
1576	SPV.0060 Special 3315. Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 Ramps & Good Hope	1.000 EACH	_____.____	_____.____
1578	SPV.0060 Special 3316. Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 SB Ramps & STH100	1.000 EACH	_____.____	_____.____
1580	SPV.0060 Special 3317. Trnspt & Install S-F EVP Heads With Confirm Lights IH 43 NB Ramps & STH100	1.000 EACH	_____.____	_____.____
1582	SPV.0060 Special 3318. Trnspt & Install S-F EVP Heads With Confirm Lights Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
1584	SPV.0060 Special 3319. Remove & Reinstall EVP Equipment Good Hope Rd & Port Washington Rd	1.000 EACH	_____.____	_____.____
1586	SPV.0060 Special 3320. Install Pull Box Rings and Covers Brown Deer Rd & CTH W	5.000 EACH	_____.____	_____.____
1588	SPV.0060 Special 3321. Temporary EVP System IH 43 Ramps & Good Hope Rd	1.000 EACH	_____.____	_____.____
1590	SPV.0060 Special 3322. Temporary EVP System Good Hope Rd & Port Washington Rd	1.000 EACH	_____.____	_____.____
1592	SPV.0060 Special 3323. Temporary EVP System IH 43 SB Ramps & STH 100/Brown Deer Rd	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1594	SPV.0060 Special 3324. Temporary EVP System IH 43 NB Ramps & STH 100/Brown Deer Rd	1.000 EACH	_____.____	_____.____
1596	SPV.0060 Special 3325. Temporary EVP System STH 32/Brown Deer Rd & CTH W/Port Washington Rd	1.000 EACH	_____.____	_____.____
1598	SPV.0060 Special 3331. Trnsprt & Install S-F FO Cable Pigtail IH 43 Ramps & Good Hope	1.000 EACH	_____.____	_____.____
1600	SPV.0060 Special 3332. Trnsprt & Install S-F FO Cable Pigtail Good Hope Rd & Port Wash Rd	1.000 EACH	_____.____	_____.____
1602	SPV.0060 Special 3333. Trnsprt & Install S-F FO Cable Pigtail IH 43 SB Ramps & STH 100	1.000 EACH	_____.____	_____.____
1604	SPV.0060 Special 3334. Trnsprt & Install S-F FO Cable Pigtail IH 43 NB Ramps & STH 100	1.000 EACH	_____.____	_____.____
1606	SPV.0060 Special 3335. Trnsprt & Install S-F FO Cable Pigtail Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
1608	SPV.0060 Special 3336. Accessible Pedestrian Push Button System	1.000 EACH	_____.____	_____.____
1610	SPV.0060 Special 3337. Concrete Control Cabinet Bases Type 9 Special Super P	3.000 EACH	_____.____	_____.____
1612	SPV.0060 Special 3501. Trnspt & Install S-F Traffic Signal Cabinet STH 57/Green Bay & Range Line	1.000 EACH	_____.____	_____.____
1614	SPV.0060 Special 3502. Trnspt Traffic Sig & Inter Lighting Materials STH 57/Green Bay&Range Line	1.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1616	SPV.0060 Special 3503. Trnspt & Install State Furn EVP Heads STH 57/Green Bay Rd & Range Line Rd	1.000 EACH	_____._____	_____._____
1618	SPV.0060 Special 4000. Pile Dynamic Analyzer (PDA) Testing	9.000 EACH	_____._____	_____._____
1620	SPV.0060 Special 4001. Pile Dynamic Analyzer (PDA) Restrikes	9.000 EACH	_____._____	_____._____
1622	SPV.0060 Special 4002. CAse Pile Wave Analysis Program (CAPWAP) Evaluation	5.000 EACH	_____._____	_____._____
1624	SPV.0060 Special 4005. Removing and Resetting Noise Wall Panels B-40-578	1.000 EACH	_____._____	_____._____
1626	SPV.0060 Special 4006. Anchor Assemblies Noise Barrier Structures B-40-578	2.000 EACH	_____._____	_____._____
1628	SPV.0060 Special 4010. Eye Bolt Drilled In	116.000 EACH	_____._____	_____._____
1630	SPV.0060 Special 4015. Bearing Assemblies Fixed UPRR B-40-921	20.000 EACH	_____._____	_____._____
1632	SPV.0060 Special 4016. Bearing Assemblies Expansion UPRR B-40-921	20.000 EACH	_____._____	_____._____
1634	SPV.0060 Special 4020. Crosshole Sonic Log (CSL) Testing, Wall Secant Pile 59.06-Inch	162.000 EACH	_____._____	_____._____
1636	SPV.0060 Special 4025. Thermal Integrity Profiler (TIP) Testing, Wall Secant Pile 59.06-Inch	162.000 EACH	_____._____	_____._____
1638	SPV.0060 Special 4030. Trial Wall Panel Secant Pile 59.06-Inch	1.000 EACH	_____._____	_____._____
1640	SPV.0060 Special 4031. Trial Wall Panel Secant Pile 59.06-Inch UPRR	1.000 EACH	_____._____	_____._____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1642	SPV.0060 Special 4040. Track, Shoring and Existing Structure Monitoring UPRR	1.000 EACH	_____.____	_____.____
1644	SPV.0060 Special 4050. Tieback Anchors	21.000 EACH	_____.____	_____.____
1646	SPV.0060 Special 4051. Tieback Anchor Performance Tests	4.000 EACH	_____.____	_____.____
1648	SPV.0060 Special 4052. Tieback Anchors Extended Creep Tests	2.000 EACH	_____.____	_____.____
1650	SPV.0060 Special 4060. MSE Wall Sleeve Type 1	1.000 EACH	_____.____	_____.____
1652	SPV.0060 Special 4061. MSE Wall Sleeve Type 13	1.000 EACH	_____.____	_____.____
1654	SPV.0060 Special 4062. MSE Wall Sleeve Temporary Signal Pole	2.000 EACH	_____.____	_____.____
1656	SPV.0060 Special 4070. Bar Couplers No. 14	546.000 EACH	_____.____	_____.____
1658	SPV.0060 Special 4071. Bar Couplers No. 18	1,231.000 EACH	_____.____	_____.____
1660	SPV.0060 Special 5000. Adjusting Sanitary Manhole	18.000 EACH	_____.____	_____.____
1662	SPV.0060 Special 5001. Reconstruct Sanitary Manhole	7.000 EACH	_____.____	_____.____
1664	SPV.0060 Special 5002. Furnish Sanitary Manhole Cover	10.000 EACH	_____.____	_____.____
1666	SPV.0060 Special 5003. Sanitary Manhole Type A 48-Inch	2.000 EACH	_____.____	_____.____
1668	SPV.0060 Special 5004. Sanitary Manhole Type D 48-Inch	3.000 EACH	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1670	SPV.0060 Special 5005. Abandoning Sanitary Manhole	1.000 EACH	_____.____	_____.____
1672	SPV.0060 Special 5010. Adjusting Water Valve Boxes	50.000 EACH	_____.____	_____.____
1674	SPV.0060 Special 5011. Reconstruct Water Manhole	3.000 EACH	_____.____	_____.____
1676	SPV.0075 Special 0600. Pavement Cleanup Project 1229-04-71	250.000 HRS	_____.____	_____.____
1678	SPV.0075 Special 0601. Pavement Cleanup Project 1229-04-73	1,500.000 HRS	_____.____	_____.____
1680	SPV.0075 Special 0602. Pavement Cleanup Project 1229-04-77	100.000 HRS	_____.____	_____.____
1682	SPV.0075 Special 4000. Obstructions Wall Secant Pile	85.000 HRS	_____.____	_____.____
1684	SPV.0075 Special 4001. Obstructions Foundation Drilling	72.000 HRS	_____.____	_____.____
1686	SPV.0085 Special 0003. Seeding Mixture No. 30 Special	5,285.000 LB	_____.____	_____.____
1688	SPV.0085 Special 0004. Native Pollinator Seeding Mixture No. 90A	152.000 LB	_____.____	_____.____
1690	SPV.0090 Special 0001. Maintain and Remove Temporary Precast Barrier Left in Place	1,884.000 LF	_____.____	_____.____
1692	SPV.0090 Special 0002. Concrete Barrier Type S42 Special	73,875.000 LF	_____.____	_____.____
1694	SPV.0090 Special 0003. Concrete Barrier Type S56 Special	19,508.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1696	SPV.0090 Special 0004. Salvage and Reinstall Fence	65.000 LF	_____.____	_____.____
1698	SPV.0090 Special 0005. Concrete Curb and Gutter 66-Inch Type D	1,894.000 LF	_____.____	_____.____
1700	SPV.0090 Special 0006. Concrete Curb and Gutter 78-Inch Type D	2,407.000 LF	_____.____	_____.____
1702	SPV.0090 Special 0007. Concrete Barrier Transition Type Parapet to V32	12.000 LF	_____.____	_____.____
1704	SPV.0090 Special 0008. Temporary Fence Chain Link 4-FT	3,085.000 LF	_____.____	_____.____
1706	SPV.0090 Special 0300. Fence Chain Link Polymer-Coated 4-FT Road Barrier	10.000 LF	_____.____	_____.____
1708	SPV.0090 Special 0800. Remove and Dispose of UPRR Track	3,187.000 LF	_____.____	_____.____
1710	SPV.0090 Special 0805. Construct 136LB ISHH CWR on Wood Ties	3,162.000 LF	_____.____	_____.____
1712	SPV.0090 Special 0808. Furnish 136LB ISHH Rail, Wood Ties and Other Track Material (OTM)	1,188.000 LF	_____.____	_____.____
1714	SPV.0090 Special 0810. Construct Double Inside Guard Rail	412.000 LF	_____.____	_____.____
1716	SPV.0090 Special 0820. Jack and Bore Storm Sewer, 36-Inch	156.000 LF	_____.____	_____.____
1718	SPV.0090 Special 0830. Geo-Web Underlayment	80.000 LF	_____.____	_____.____
1720	SPV.0090 Special 0910. Glare Screens Temporary	26,224.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1722	SPV.0090 Special 1001. Cable Aerial Aluminum 6 AWG Quadruplex	8,549.000 LF	_____.____	_____.____
1724	SPV.0090 Special 1002. Cable Aerial Aluminum 4 AWG Quadruplex	4,457.000 LF	_____.____	_____.____
1726	SPV.0090 Special 1003. Cable Aerial Aluminum 6 AWG Triplex	1,155.000 LF	_____.____	_____.____
1728	SPV.0090 Special 1004. Cable Aerial Aluminum 4 AWG Triplex	190.000 LF	_____.____	_____.____
1730	SPV.0090 Special 3001. Woven Pull Tape	364.000 LF	_____.____	_____.____
1732	SPV.0090 Special 4000. Piling Steel HP 14-Inch X 89 LB	4,275.000 LF	_____.____	_____.____
1734	SPV.0090 Special 4005. Wall Secant Pile 59.06-Inch	8,910.000 LF	_____.____	_____.____
1736	SPV.0090 Special 4006. Wall Secant Pile 59.06-Inch UPRR	3,150.000 LF	_____.____	_____.____
1738	SPV.0090 Special 4010. Handrail B-40-921	824.000 LF	_____.____	_____.____
1740	SPV.0090 Special 4011. Handrail R-40-649	296.000 LF	_____.____	_____.____
1742	SPV.0090 Special 4015. Fence Chain Link Polymer-Coated 6-FT R-40-641	599.000 LF	_____.____	_____.____
1744	SPV.0090 Special 4020. Railing Tubular Screening 8-FT	321.000 LF	_____.____	_____.____
1746	SPV.0090 Special 5000. Sanitary Sewer 8-Inch PVC	141.000 LF	_____.____	_____.____
1748	SPV.0090 Special 5001. Sanitary Sewer 10-Inch PVC	497.000 LF	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1750	SPV.0090 Special 5002. Abandoning Sanitary Sewer 10-Inch	416.000 LF	_____.____	_____.____
1752	SPV.0090 Special 8031. Precast Trench Drain	3,886.000 LF	_____.____	_____.____
1754	SPV.0090 Special 8036. Temporary Precast Trench Drain	9,785.000 LF	_____.____	_____.____
1756	SPV.0110 Special 4000. Timber Lagging	42.000 MBM	_____.____	_____.____
1758	SPV.0135 Special 0001. Field Office Special	30.000 MON	_____.____	_____.____
1760	SPV.0135 Special 0150. Vibration Monitoring	1,332.000 MON	_____.____	_____.____
1762	SPV.0165 Special 0001. Wall Modular Block Mechanically Stabilized Earth	125.000 SF	_____.____	_____.____
1764	SPV.0165 Special 4000. Temporary Shoring Railroad	2,655.000 SF	_____.____	_____.____
1766	SPV.0165 Special 4005. Precast Concrete Modular Retaining Wall	4,790.000 SF	_____.____	_____.____
1768	SPV.0165 Special 4006. Precast Concrete Modular Wingwall	410.000 SF	_____.____	_____.____
1770	SPV.0165 Special 4010. Geocomposite Wall Drain	4,185.000 SF	_____.____	_____.____
1772	SPV.0165 Special 4015. Prestressed Precast Concrete Wall Panel R-40-641	3,750.000 SF	_____.____	_____.____
1774	SPV.0165 Special 4016. Prestressed Precast Concrete Wall Panel R-40-642	4,550.000 SF	_____.____	_____.____
1776	SPV.0165 Special 4020. Geocomposite Drain Board	13,177.000 SF	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1778	SPV.0165 Special 4030. Temporary Wall Wire Faced Mechanically Stabilized Earth	368.000 SF	_____.____	_____.____
1780	SPV.0165 Special 4412. Wall Concrete Panel Mechanically Stabilized Earth R-40-412	3,699.000 SF	_____.____	_____.____
1782	SPV.0165 Special 4413. Wall Concrete Panel Mechanically Stabilized Earth R-40-413	2,985.000 SF	_____.____	_____.____
1784	SPV.0165 Special 4414. Wall Concrete Panel Mechanically Stabilized Earth R-40-414	3,034.000 SF	_____.____	_____.____
1786	SPV.0165 Special 4415. Wall Concrete Panel Mechanically Stabilized Earth R-40-415	207.000 SF	_____.____	_____.____
1788	SPV.0165 Special 4636. Wall Concrete Panel Mechanically Stabilized Earth R-40-636	7,295.000 SF	_____.____	_____.____
1790	SPV.0165 Special 4637. Wall Concrete Panel Mechanically Stabilized Earth R-40-637	7,541.000 SF	_____.____	_____.____
1792	SPV.0165 Special 4639. Wall Concrete Panel Mechanically Stabilized Earth R-40-639	13,950.000 SF	_____.____	_____.____
1794	SPV.0165 Special 4640. Wall Concrete Panel Mechanically Stabilized Earth R-40-640	19,450.000 SF	_____.____	_____.____
1796	SPV.0165 Special 4642. Wall Concrete Panel Mechanically Stabilized Earth R-40-642	1,800.000 SF	_____.____	_____.____
1798	SPV.0165 Special 4645. Wall Concrete Panel Mechanically Stabilized Earth R-40-645	17,262.000 SF	_____.____	_____.____
1800	SPV.0165 Special 4646. Wall Concrete Panel Mechanically Stabilized Earth R-40-646	11,751.000 SF	_____.____	_____.____
1802	SPV.0165 Special 4647. Wall Concrete Panel Mechanically Stabilized Earth R-40-647	662.000 SF	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1804	SPV.0165 Special 4648. Wall Concrete Panel Mechanically Stabilized Earth R-40-648	3,767.000 SF	_____.____	_____.____
1806	SPV.0180 Special 0001. Topsoil Special	291,403.000 SY	_____.____	_____.____
1808	SPV.0180 Special 0002. Removing Surface Milling Special	1,791.000 SY	_____.____	_____.____
1810	SPV.0180 Special 0003. Concrete Pavement 8-Inch Special	51,692.000 SY	_____.____	_____.____
1812	SPV.0180 Special 0004. Concrete Pavement 10.5-Inch Special	146,928.000 SY	_____.____	_____.____
1814	SPV.0180 Special 0005. Concrete Pavement 11.5-Inch Special	160,150.000 SY	_____.____	_____.____
1816	SPV.0180 Special 0106. Asphaltic Material Binder	10,838.000 SY	_____.____	_____.____
1818	SPV.0180 Special 4000. Membrane Waterproofing UPRR	870.000 SY	_____.____	_____.____
1820	SPV.0180 Special 4005. Geotextile Type DF UPRR	388.000 SY	_____.____	_____.____
1822	SPV.0180 Special 4006. Geotextile Type SAS UPRR	1,023.000 SY	_____.____	_____.____
1824	SPV.0195 Special 0001. HMA Longitudinal Joint Repair	150.000 TON	_____.____	_____.____
1826	SPV.0195 Special 0002. HMA Transverse Joint Repair	60.000 TON	_____.____	_____.____
1828	SPV.0195 Special 0840. Subballast UPRR	9,887.000 TON	_____.____	_____.____
1830	SPV.0195 Special 4000. Base Aggregate Open Graded Special	5,720.000 TON	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1832	SPV.0195 Special 4005. Excavation, Hauling, and Disposal Of Solid Waste Soil	7,560.000 TON	_____._____	_____._____
1834	SPV.0195 Special 4010. Course Aggregate Mix for Stream Bed	1,297.000 TON	_____._____	_____._____
1836	SPV.0200 Special 5000. Reconstruct MMSD Sanitary Manhole	40.000 VF	_____._____	_____._____
1838	205.0501.S Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	3.400 TON	_____._____	_____._____
1840	646.3555 Marking Line Grooved Contrast Permanent Tape 8-Inch	14,351.000 LF	_____._____	_____._____
1842	SPV.0060 Special 0935. Emergency Response Pavement Repairs	30.000 EACH	_____._____	_____._____
	Section: 0001		Total:	_____._____

Total Bid: _____._____

Wisconsin Department of Transportation

Division of Transportation Systems Development
Bureau of Project Development
4822 Madison Yards Way, 4th Floor South
Madison, WI 53705

Telephone: (608) 266-1631
Facsimile (FAX): (608) 266-8459

September 30, 2022

NOTICE TO ALL CONTRACTORS:

Proposal #03:

1229-04-71, WISC 2023001
City Glendale, N Port Washington Rd
Bender Rd to W Daphne Rd
Local Street
Milwaukee County

1229-04-72, WISC 2023002
I-43 North-South Freeway
Union Pacific RR Bridge B-40-921
IH-43
Milwaukee County

1229-04-73, WISC 2023003
I-43 North-South Freeway Bender Rd to Brown Deer Rd
IH-43
Milwaukee County

1229-04-77
C Glendale, Green Bay Road
Intersection with Range Line Rd
STH 57
Milwaukee County

Letting of October 11, 2022

This is Addendum No. 02, which provides for the following:

Special Provisions:

Revised Special Provisions	
Article No.	Description
5	Prosecution and Progress
7	Traffic
9	Utilities
130	Traffic Control
161	Survey Project 1229-04-71, Item SPV.0060.0001; Survey Project 1229-04-72, Item SPV.0060.0002; Survey Project 1229-04-73, Item SPV.0060.0003; Survey Project 1229-04-77, Item SPV.0060.0004.
181	Temporary Water Diversion Indian Creek, Item SPV.0060.0710

Schedule of Items:

Revised Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
205.0100	Excavation Common	CY	746,952	-2,912	744,040
305.0120	Base Aggregate Dense 1 ¼-Inch	TON	250,124	271	250,395
310.0110	Base Aggregate Open-Graded	TON	2,692	349	3,041
311.0110	Breaker Run	TON	423,518	22,090	445,608
455.0605	Tack Coat	GAL	26,849	57	26,906
465.0125	Asphaltic Surface Temporary	TON	7,278	113	7,391
603.8000	Concrete Barrier Temporary Precast Delivered	LF	107,459	1,275	108,734
603.8125	Concrete Barrier Temporary Precast Installed	LF	184,001	1,275	185,276
603.8500	Anchoring Concrete Barrier Temporary Precast	LF	146,096	1,275	147,371
611.8115	Adjusting Inlet Covers	EACH	82	1	83
611.8120.S	Cover Plates Temporary	EACH	220	1	221
614.0905	Crash Cushions Temporary	EACH	31	5	36
649.0105	Temporary Marking Line Paint 4-Inch	LF	377,709	738	378,447
SPV.0035.0001	Roadway Embankment	CY	232,938	-1,057	231,881

Plan Sheets:

Revised Plan Sheets	
Plan Sheet	Plan Sheet Title (brief description of changes to sheet)
104-105	Construction Details – width of temporary diversion channel updated
112	Construction Details – note added to detail
354	Plan Details – Temporary widening callouts updated
355	Plan Details – Temporary widening callouts updated
1118	Traffic Signal Plan – Controller logic updated
1216	Traffic Control Typical Sections – Port Washington Road typicals updated
1218	Traffic Control Stage 1A Overview – limits of temporary widening updated
1223-1224, 1230,1232	Traffic Control Stage 1A – Ramp note updated
1248-1249	Traffic Control – work zone added for temporary widening from Karl Campus Drive to Brentwood Lane
1253	Traffic Control Stage 1B Overview – limits of traffic shift updated
1255	Traffic Control – Port Washington traffic control devices updated
1281-1282	Traffic Control – TC devices added for temporary widening from Karl Campus Drive to Brentwood Lane
1606	Miscellaneous Quantities – Earthwork Table updated
1610	Miscellaneous Quantities – Base Aggregate Dense 1 ¼-Inch updated
1611	Miscellaneous Quantities – Asphaltic Surface Temporary updated
1623	Miscellaneous Quantities – Cover Plate Temporary/Adjusting Inlet Covers updated
1633	Miscellaneous Quantities – Temp Barrier and Crash Cushion table updated
1635	Miscellaneous Quantities – Temporary Pavement Marking table updated
1685-1686	Miscellaneous Quantities – Earthwork tables updated

1700-1701	Miscellaneous Quantities – Breaker Run table updated
1833	Miscellaneous Quantities – Temp Barrier and Crash Cushion table updated
3068	Earthwork Tables – Port Washington Road Stage 1B table updated

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

Mike Coleman

Proposal Development Specialist
Proposal Management Section

ADDENDUM NO. 02

1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

September 30, 2022

Special Provisions

5. Prosecution and Progress.

Replace the second bullet under subsection titled Railroad Construction *under section titled* **Stage 1A Construction** *with the following:*

- Begin UPRR Embankment Construction.
    - Construction trucks and equipment entering and exiting the work zone for construction of the UPRR embankment and structures are limited to right in/right out access.

Replace the third bullet under subsection titled Local Road Construction *under section titled* **Stage 1A Construction** *with the following:*

- Construct temporary pavement on the Port Washington Road NB outside lane from Bender Road to Brentwood Lane.

Replace the first bullet under subsection titled Railroad Construction *under section titled* **Stage 1B Construction** *with the following:*

- Continue construction of UPRR Embankment.
    - Construction trucks and equipment entering and exiting the work zone for construction of the UPRR embankment and structures are limited to right in/right out access.

Replace the first bullet under subsection titled Railroad Construction *under section titled* **Stage 2A Construction** *with the following:*

- Continue construction of UPRR Embankment.
    - Construction trucks and equipment entering and exiting the work zone for construction of the UPRR embankment and structures are limited to right in/right out access.

Replace the first bullet under subsection titled Railroad Construction *under section titled* **Stage 2B Construction** *with the following:*

- Complete construction of UPRR Embankment.
    - Construction trucks and equipment entering and exiting the work zone for construction of the UPRR embankment and structures are limited to right in/right out access.

Replace section titled **C. Nightly Freeway Shoulder Restoration** *with the following:*

When working on the IH 43 NB and SB shoulders without the protection of concrete barrier temporary precast, no open excavation or storing of materials and equipment within the clear zones and no vertical drop-offs greater than two-inches adjacent to the travel lanes will be permitted during Peak Hours and Off Peak Hours with no lane closures. Work zone clear zone widths are defined in the Traffic Control article. At the end of every Off Peak and nighttime closure, fill all excavated areas, restore the shoulders with base aggregate dense as shown on the plans, and remove all materials and equipment from the clear zones. Provide shoulder cross slopes with an 8% maximum rollover with the adjacent travel lanes for Peak Hour

and Off Peak Hour freeway traffic operations providing two lanes in each direction. Before opening to two lanes of traffic, place traffic control drums at the inside edge of shoulder as shown on the plans. Nightly freeway shoulder restoration will be paid for under the Base Aggregate Dense 1 ¼-Inch bid item.

In Stage 1, when placing HMA pavement lower layers per the layers and gradations shown on the plans, no vertical drop-offs greater than 2 inches will be permitted where the shoulder abuts the adjacent travel lanes for Peak Hour and Off Peak Hour freeway traffic operations providing two lanes in each direction. Before opening to two lanes of traffic, place traffic control drums at the inside edge of shoulder as shown on the plans.

7. Traffic.

Replace the second bullet under subsection titled Freeway and Ramps *under section titled* **Stage 1A Traffic** *with the following:*

- Reduce IH 43 SB traffic to one lane during Freeway Lane Closure Hours only.

Replace the second bullet under subsection titled Local Roads *under section titled* **Stage 1A Traffic** *with the following:*

- The temporary traffic signal at the intersection of IH 43 SB Ramps & STH 100/Brown Deer Road shall be operational. Refer to Temporary Traffic Signal Plans for further instruction.
    - Do not restrict left turns to EB Brown Deer Road until the exit ramp at County Line interchange is open.

Replace the second bullet under subsection titled Local Roads *under section titled* **Stage 1B Traffic** *with the following:*

- Shift Port Washington Road from Bender Road to Brentwood Lane to temporary pavement built in Stage 1A. Maintain one lane of traffic in each direction.

9. Utilities.

Replace the eighth paragraph with the following:

All utility timelines are based on an anticipated start of construction of the project on March 13, 2023. Anticipate utility relocations through mid-March.

Replace second full-bullet paragraph and sub-bullet paragraph under subsection titled **AT&T Wisconsin** *under section titled* **1229-04-71: Port Washington Road (Bender to Coventry)** *with the following:*

- An existing overhead communication line on We Energies' poles beginning beyond the easterly project limits running westerly to a pole at Station 117PN+33, 22'LT and then turning northerly running along the east side of Port Washington Road to a pole at Station 128PN+93, 43'LT and then turning easterly and continuing to beyond the project limits.
    - Prior to construction AT&T Wisconsin will construct new overhead wires on We Energies' poles beginning beyond the easterly project limits running westerly to a new pole at Station 117PN+08, 50'RT and then turning northerly running along the proposed east sidewalk of Port Washington Road to a pole at Station 128PN+75, 45'RT and then turning northeasterly to a new pole at Station 128PN+94, 85'RT. The existing overhead communication lines will be removed off of We Energies' poles.

Replace the first sub-bullet paragraph under the third full-bullet paragraph under subsection titled **Fox Point, Village of - Water** *under section titled* **1229-04-71: Port Washington Road (Bender to Coventry)** *with the following:*

- Prior to construction, Fox Point Water will install insulation board over their existing water main from Station 107PN+95, 21'RT and running northerly to Station 109PN+00, 21'RT.
- Prior to construction Fox Point Water will construct a new water main in the same location as the existing main connecting into the existing water main at Station 109PN+00, 21'RT and running northerly to Station 110PN+05, 25'RT and then turning northeasterly and connecting into the existing water main at Station 110PN+30, 78'RT.

Replace the first full-bullet paragraph and sub-bullet paragraph under subsection titled **Midwest Fiber Networks** *under section titled* **1229-04-71: Port Washington Road (Bender to Coventry)** *with the following:*

- An existing underground duct beginning at a handhole at Station 99PN+62, 57'LT where it runs southeasterly to Station 99PN+49, 52'LT and then turns easterly crossing Port Washington Road to 99PN+49, 43'RT where it turns northeasterly to a handhole at Station 99PN+55, 56'RT.
  - During construction and in conjunction with grading operations Midwest Fiber Networks will relocate the existing handhole at Station 99PN+62, 57'LT approximately 2' to the west. The relocation of this handhole is related to the installation of the WisDOT Communications handhole next to it. Allow three working days for Midwest Fiber Networks to perform their adjustments.

Replace the sub-bullet paragraph under subsection titled **AT&T Local Network** *under section titled* **1229-04-73: South End Mainline (Jean Nicolet Road: Bender to Green Tree)** *with the following:*

- During construction AT&T Local Network will relocate their facilities into new We Energies - Electric facilities following the same path as We Energies - Electric as described in the We Energies – Electric section below. The existing line will be discontinued in place. Relocations anticipated to occur in August 2023 prior to Stage 2B.

Replace the sub-bullet paragraph under subsection titled **Centurylink Communications** *under section titled* **1229-04-73: South End Mainline (Jean Nicolet Road: Bender to Green Tree)** *with the following:*

- Prior to construction CenturyLink will relocate their facilities by splicing into their existing line at Station 130+50, 21'LT in the UPRR corridor and running easterly to a new handhole at Station 131+88, 35'LT where it turns northerly running along the westerly right of way of Jean Nicolet Road crossing Brentwood Lane to a new handhole at Station 30JN+64, 34'LT. From there it continues northerly crossing Acacia Road, Appletree Road, and Daphne Road and continuing to new handholes at Station 51JN+94, 41'LT, Station 43JN+16, 59'LT, and Station 63JN+26, 38'LT. From there it turns westerly running along the southerly right of way of Green Tree Road to a new handhole at Station 34GT+88, 33'RT where it turns northerly crossing Green Tree Road and continues northerly towards the Good Hope Road interchange. The existing line in Jean Nicolet Road will be discontinued in place.

Replace the sub-bullet paragraph under the first full-bullet paragraph under subsection titled **Midwest Fiber Networks** *under section titled* **1229-04-73: South End Mainline (Jean Nicolet Road: Bender to Green Tree)** *with the following:*

- Prior to construction Midwest Fiber Networks will construct a new underground communication line beginning at an existing handhole at Station 1077+79, 110'LT running northerly crossing Bender Road and continuing along the east side of Jean Nicolet Road to Station 11JN+38, 30'RT where it turns westerly crossing Jean Nicolet Road to a new handhole at Station 11JN+50, 39'LT. From there it turns northerly running along the westerly sidewalk of Jean Nicolet Road crossing under the UPRR and then turning northwesterly across Fairfield Court intersection where it joins into the new CenturyLink facilities described above at Station 21JN+38, 29'LT and continues northerly along the west side of Jean Nicolet Road. The existing line in WisDOT communication facilities will be discontinued in place.

Insert the following after the first full-bullet paragraph under subsection titled **We Energies - Electric** *under section titled* **1229-04-73: South End Mainline (Jean Nicolet Road: Bender to Green Tree)** *with the following:*

- An existing overhead line beginning beyond the westerly project limits running easterly along the north side of Bender Road to a pole at Station 13+48, 29'LT and crossing Jean Nicolet Road to a pole at Station 14+06, 33'LT.
    - During construction We Energies will install new overhead wires beginning at the existing pole at Station 13+48, 29'LT to a new pole at Station 14+28, 33'LT. The existing pole at Station 14+06, 33'LT will be removed. Relocations anticipated to occur in June 2023 prior to Stage 2B.

Replace the fourth sub-bullet paragraph under the third full-bullet paragraph under subsection titled **We Energies - Electric** *under section titled* **1229-04-73: South End Mainline (Jean Nicolet Road: Bender to Green Tree)** *with the following:*

- During construction We Energies – Electric will construct a new underground duct package beginning at the existing manhole at Station 39JN+27, 10'LT running westerly to Station 39JN+27, 32'LT and turning northerly to Station 45JN+06, 37'LT. From there it turns easterly to Station 45JN+06, 14'LT where it turns northerly connecting into the existing manhole at Station 45JN+63, 11'LT. The existing line from Station 39JN+27, 10'LT to Station 45JN+63, 11'LT will be discontinued in place. The existing line running south of the manhole at Station 39JN+27, 10'LT and north of the manhole at Station 45JN+63, 11'LT will remain in place without adjustment. Relocations anticipated to occur from June 2023 through August 2023 prior to Stage 2B.

Replace the sub-bullet paragraph under the first full-bullet paragraph under subsection titled **We Energies - Gas** *under section titled* **1229-04-73: South End Mainline (Jean Nicolet Road: Bender to Green Tree)** *with the following:*

- Prior to construction We Energies - Gas will construct a new underground gas main connecting into the existing main on the south side of Bender Road at Station 9JN+72, 58'LT jogging southerly and then easterly to Station 9JN+67, 21'LT. From there it runs northerly to Station 12JN+88, 51'LT and then turning northeasterly running along the westerly right of way of Jean Nicolet Road to Station 14JN+64, 10'LT. From there it turns northerly running behind the back of sidewalk crossing under the UPRR to Station 20JN+64, 12'LT. From there it turns northwesterly to Station 20JN+76, 23'LT where it turns northerly crossing Fairfield Court to Station 23JN+09, 22'LT where it turns easterly connecting into the existing main at Station 23JN+09, 15'LT. The existing line from Station 9JN+72, 58'LT to Station 23JN+09, 15'LT will be discontinued in place. The existing line north of Station 23JN+09, 15'LT will remain in place without adjustment.

Replace the fourth full-bullet paragraph and sub-bullet paragraph under subsection titled **We Energies - Gas** *under section titled* **1229-04-73: South End Mainline (Jean Nicolet Road: Bender to Green Tree)** *with the following:*

- An existing underground gas main beginning beyond the westerly project limits running easterly in the side road of Daphne Road to Station 41JN+28, 43'LT and turning southerly running along behind the sidewalk of Jean Nicolet Road to Station 39JN+18, 37'LT. This exiting line will remain in place without adjustment.

Replace the sub-bullet paragraph under the fifth full-bullet paragraph under subsection titled **We Energies - Gas** *under section titled* **1229-04-73: South End Mainline (Jean Nicolet Road: Bender to Green Tree)** *with the following:*

- Prior to construction We Energies - Gas will construct a new underground gas main connecting into the existing main at Station 32JN+86, 47'LT and running northerly and jogging easterly to Station 32JN+94, 36'LT and then turning northerly running behind the back of walk of Jean Nicolet Road and crossing Apple Tree Road to Station 38JN+44, 36'LT. From there it turns northeasterly to Station 38JN+65, 16'LT and then runs northerly crossing Daphne Road to Station 42JN+55, 33'LT and then turns northwesterly to Station 42JN+99, 51'LT. From there it turns northerly to Station 60JN+36, 22'LT and turning easterly and connecting into the existing main at Station 60JN+36, 2'LT. The existing line from Station 50JN+52, 26'LT to Station 60JN+36, 2'LT will be

discontinued in place. The existing line north of Station 60JN+36, 2'LT will remain in place without adjustment.

Replace the sub-bullet paragraph under the second full-bullet paragraph under subsection titled **We Energies - Gas** *under section titled* **1229-04-73: South End Mainline (IH 43: Bender to Green Tree)** *with the following:*

- Prior to construction We Energies will construct a new underground gas main beginning in Jean Nicolet Road at a tee and running easterly crossing IH 43 at Station 1110+02 to a tee in Port Washington Road. The existing gas main will be discontinued in place.

Replace the sub-bullet paragraph under the tenth full-bullet paragraph under subsection titled **We Energies - Electric** *under section titled* **1229-04-73: South End Mainline (Good Hope Road Interchange: Green Tree to Bradley)** *with the following:*

- During construction We Energies will construct a new underground electric line beginning at manhole located at Station 32GHE+08, 15'RT and portions to the north to avoid a conflict with the proposed storm sewer. The existing underground line will be discontinued in place. Relocations anticipated to occur from March 2023 through May 2023 prior to Stage 2A.

Replace the sub-bullet paragraph under the fourteenth full-bullet paragraph under subsection titled **We Energies - Electric** *under section titled* **1229-04-73: South End Mainline (Good Hope Road Interchange: Green Tree to Bradley)** *with the following:*

- During construction We Energies will construct new underground electric beginning at an existing pole at Station 1158+39, 162'RT running northerly along the existing easterly right of way of IH 43 and tying into an existing underground electric line at Station 1167+22, 130'RT. The overhead electric lines will be removed off of the existing poles and the poles will be removed. Relocations anticipated to occur in July 2023 prior to Stage 2C.

Replace the sub-bullet paragraph under the sevenrteenth full-bullet paragraph under subsection titled **We Energies - Electric** *under section titled* **1229-04-73: South End Mainline (Good Hope Road Interchange: Green Tree to Bradley)** *with the following:*

- During construction We Energies will remove the existing poles and wires from Station 1182+63, 101'LT to Station 1197+75, 98'LT. The poles and overhead wires from Station 1198+52, 98'LT to Station 1203+27, 99'LT will remain in place without adjustment. Relocations anticipated to occur from July 2023 through August 2023 prior to Stage 2C.

Replace the sub-bullet paragraph under the fifth full-bullet paragraph under subsection titled **We Energies - Gas** *under section titled* **1229-04-73: South End Mainline (Good Hope Road Interchange: Green Tree to Bradley)** *with the following:*

- Prior to construction We Energies will construct a new underground gas line beginning at Station 33GHE+09, 131'RT and running easterly to Station 33GHE+13, 131'RT where it turns and runs northerly to Station 33GHE+03, 88'RT and then turns northeasterly to Station 33GHE+37, 31'RT. From there it turns and runs easterly running along the southerly right of way of Good Hope Road to Station 33GHE+57, 30'RT and then turns northerly connecting into the existing main at Station 33GHE+57, 23'RT. The existing underground gas line from Station 33GHE+09, 131'RT to Station 33GHE+57, 23'RT will be discontinued in place

Replace the sub-bullet paragraph under the seventh full-bullet paragraph under subsection titled **We Energies - Gas** *under section titled* **1229-04-73: South End Mainline (Good Hope Road Interchange: Green Tree to Bradley)** *with the following:*

- Prior to construction We Energies will construct a new gas main beginning at Station 1198+18, 172' LT and running easterly crossing IH 43 at Station 1198+18 and continuing to Station 1198+18,

204' RT where it turns southerly and tying into the existing main at Station 1198+11, 204'RT. The existing underground gas line from Station 1198+18, 172' LT to Station 1198+11, 204'RT will be discontinued in place.

Replace the sub-bullet paragraph under the full-bullet paragraph under subsection titled **CenturyLink Communications** *under section titled* **1229-04-73: South End Mainline (Brown Deer Road Interchange: Bradley to Fairy Chasm)** *with the following:*

- Prior to construction CenturyLink will relocate their facilities beginning at Bradley Road where it runs northerly along the westerly right of way of IH 43 crossing Indian Creek and Dean Road where it follows along the east side pf Pheasant Lane curving northwesterly and then easterly to a new handhole located at Station 20PHBD+64, 18'RT. From there it turns northerly running along the westerly right of way of IH 43, crossing Brown Deer Road at Station 613BDE+26, and continuing northerly beyond the project limits towards the County Line Road interchange. The existing line will be discontinued in place.

Insert the following before the first full-bullet paragraph under subsection titled **Spectrum** *under section titled* **1229-04-73: South End Mainline (Brown Deer Road Interchange: Bradley to Fairy Chasm)** *with the following:*

- An existing overhead communication line on We Energies' poles beginning beyond the westerly project limits running easterly along the north side of Bradley Road crossing IH 43 at Station 1198+54 and continuing to beyond the project limits.
  - During construction We Energies will construct a new pole at Station 1198+55, 107'RT and Spectrum will transfer their wires to the new pole. Relocations anticipated to occur in July 2023 prior to Stage 2C.

Replace the two sub-bullet paragraphs under the sixth full-bullet paragraph under subsection titled **Spectrum** *under section titled* **1229-04-73: South End Mainline (Brown Deer Road Interchange: Bradley to Fairy Chasm)** *with the following:*

- During construction Spectrum will construct new overhead wires on We Energies' poles beginning beyond the westerly project limits running easterly along the northerly right of way of Fairy Chasm Road crossing IH 43 at Station 1280+89 and continuing to beyond the project limits. The overhead communication lines will be removed off of We Energies' poles. Relocations anticipated to occur from July 2023 through August 2023 prior to Stage 2C.
- During construction Spectrum will construct new overhead wires on We Energies' poles beginning at an existing pole at Station 1279+71, 95'LT and running northwesterly along the existing westerly right of way of IH 43 to a new We Energies pole at Station 1281+32, 95'LT. The overhead communication lines will be removed off of We Energies' poles. Relocations anticipated to occur from July 2023 through August 2023 prior to Stage 2C.

Replace the sub-bullet paragraph under the first full-bullet paragraph under subsection titled **We Energies - Electric** *under section titled* **1229-04-73: South End Mainline (Brown Deer Road Interchange: Bradley to Fairy Chasm)** *with the following:*

- During construction We Energies will construct a new pole at Station 1198+55, 107'RT. The overhead electric lines will be removed off of the existing poles and transferred to the new poles. Relocations anticipated to occur in July 2023 prior to Stage 2C.

Replace the sub-bullet paragraphs under the nineteenth full-bullet paragraph under subsection titled **We Energies - Electric** *under section titled* **1229-04-73: South End Mainline (Brown Deer Road Interchange: Bradley to Fairy Chasm)** *with the following:*

- During construction We Energies will construct new poles and overhead wires beginning beyond the westerly project limits running easterly along the northerly right of way of Fairy Chasm Road crossing IH 43 at Station 1280+89 and continuing to beyond the project limits. The overhead

electric lines will be removed off of the existing poles and the poles will be removed. Relocations anticipated to occur from July 2023 through August 2023 prior to Stage 2C.

- During construction We Energies will construct a new underground electric line beginning beyond the westerly project limits running easterly along the northerly right of way of Fairy Chasm Road, crossing IH 43 at Station 1280+69, and continuing to beyond the project limits. Relocations anticipated to occur from July 2023 through August 2023 prior to Stage 2C.

130. Traffic Control.

Add the following after the sixth paragraph:

Clear zone during Freeway No Closures (Peak Hours) is measured as 20' from the edge of traveled way. The clear zone may be reduced to 10' (measured from the edge of traveled way) during a single lane closure that occurs within the Freeway Lane Closure Hours (Off Peak Hours) in Stage 1A to construct the temporary widening only.

161. Survey Project 1229-04-71, Item SPV.0060.0001; Survey Project 1229-04-72, Item SPV.0060.0002; Survey Project 1229-04-73, Item SPV.0060.0003; Survey Project 1229-04-77, Item SPV.0060.0004.

Replace entire section titled **C Construction** *with the following:*

C Construction

Add the following to standard spec 650.3.1 (5):

Confirm with engineer before using global positioning methods to establish the following:

1. Structure layout horizontal or vertical locations.
2. Concrete pavement vertical locations.
3. Curb, gutter, and curb and gutter vertical locations.
4. Concrete barrier vertical locations.
5. Storm Sewer layout horizontal or vertical locations, including structure centers, offsets, access openings, rim and invert elevations.

Replace standard spec 650.3.1.1(2) with the following:
Maintain neat, orderly, and complete survey notes, drawings, and computations used in establishing the lines and grades. This includes:

- Raw data files
- Digital stakeout reports
- Control check reports
- Supplemental control files (along with method used to establish coordinates and elevation)
- Calibration report

181. Temporary Water Diversion Indian Creek, Item SPV.0060.0710.

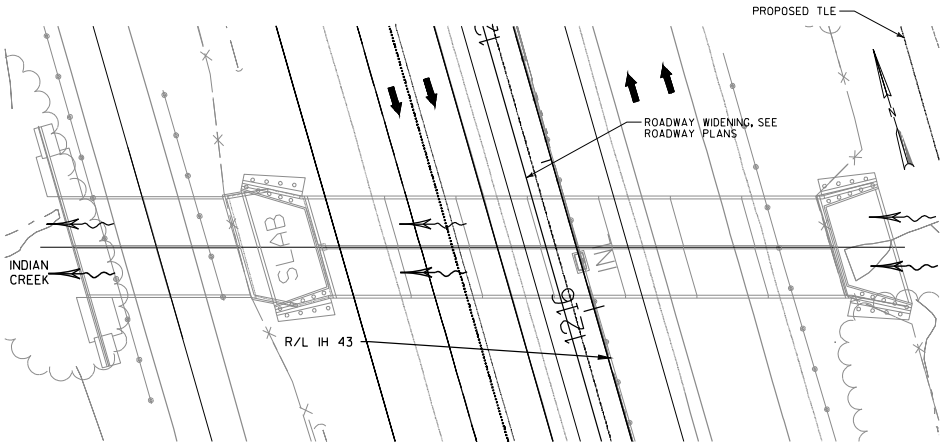
Replace the 'Q10' note in paragraph (1) in section titled **C Construction** *with the following:*

Q10 = 694 cfs with an estimated water surface elevation of 658.

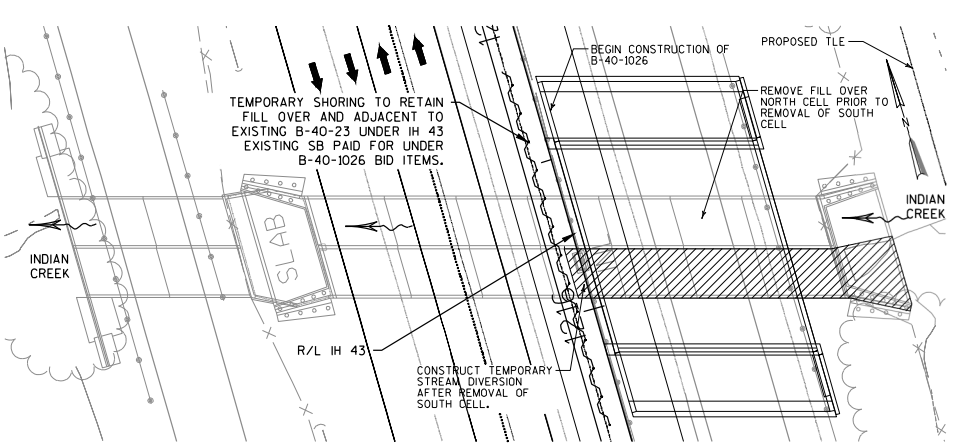
Schedule of Items
Attached, dated September 30, 2022, are the revised Schedule of Items Pages 6, 7, 9, 21, 25, 26, 32, and 46.

Plan Sheets
The following 8½ x 11-inch sheets are attached and made part of the plans for this proposal:
Revised: 104-105, 112, 354, 355, 1118, 1216, 1218, 1223-1224, 1230, 1232, 1248, 1249, 1253, 1255, 1281-1282, 1606, 1610, 1611, 1623, 1633, 1635, 1685-1686, 1700-1701, 1801-1802, 1833, 3068

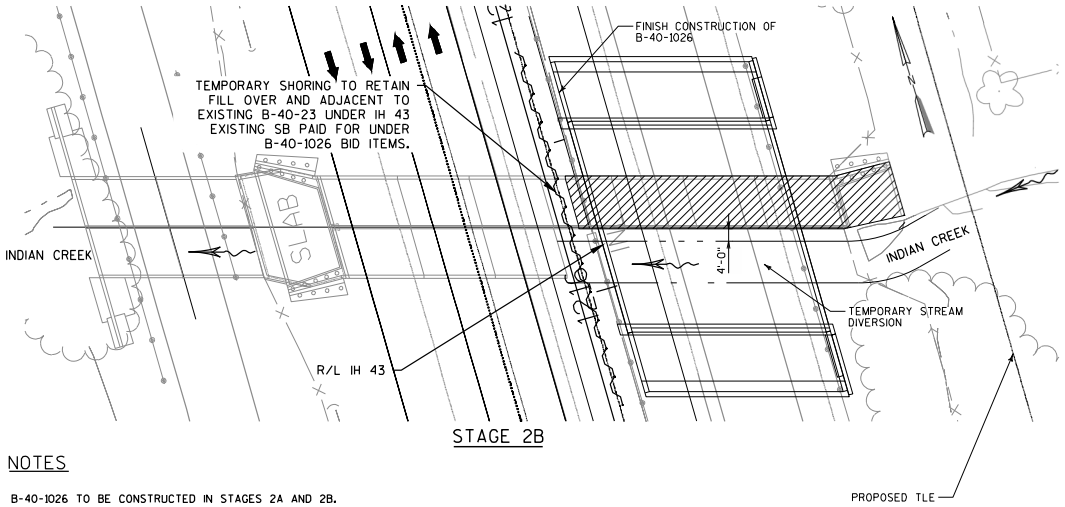
END OF ADDENDUM



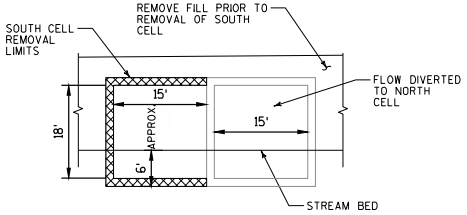
STAGE 1



STAGE 2A

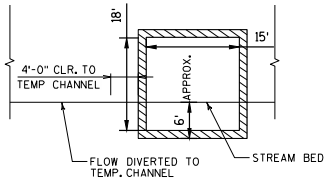


STAGE 2B



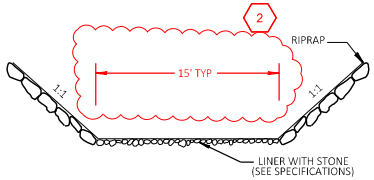
STAGE 2A REMOVAL SECTION

(LOOKING WEST)



STAGE 2B REMOVAL SECTION

(LOOKING WEST)



TEMPORARY DIVERSION CHANNEL SECTION

LEGEND

FLOW DIRECTION

REMOVAL LIMITS

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 104
September 30, 2022

NOTES

B-40-1026 TO BE CONSTRUCTED IN STAGES 2A AND 2B.

REMOVE EXISTING STRUCTURE B-40-23 FULL DEPTH. EXISTING TIMBER PILES TO BE CUT BELOW BOTTOM SLAB AND LEFT IN PLACE.

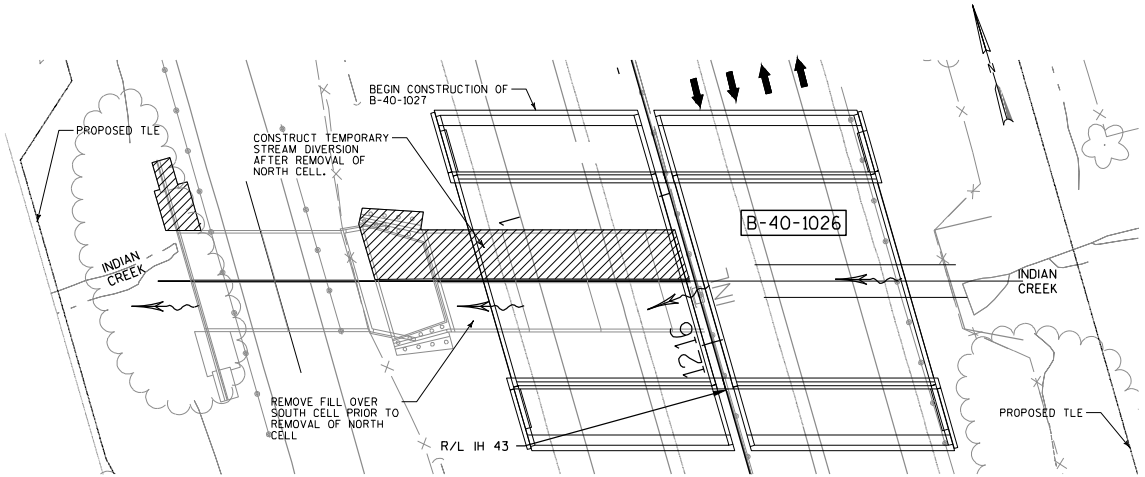
ANY TEMPORARY SHORING ELECTED TO BE USED FOR STREAM DIVERSION IS INCIDENTAL TO BID ITEM "TEMPORARY WATER DIVERSION INDIAN CREEK". ANY TEMPORARY SHORING ELECTED TO BE USED FOR REMOVAL OF STRUCTURE B-40-23 BEYOND WHAT IS SHOWN IN THE PLANS IS INCIDENTAL TO ITEM "REMOVING EXISTING STRUCTURE B-40-23".

ESTIMATED FLOW RATES:
Q2 = 398 CFS
Q10 = 694 CFS

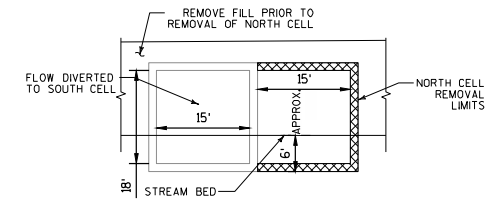
PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - B-40-1026, B-40-1027, B-40-1028 STAGING AND REMOVAL	SHEET 104	E

FILE NAME : C:\CADD\LIB\PW\HNTB_KARIMULLAH.HABIBUR\GREATLAKES\D0256213\021009_CD.DWG
LAYOUT NAME - 01
PLOT DATE : 9/27/2022 8:57 AM
PLOT BY : KARIMULLAH HABIBUR
PLOT NAME :
PLOT SCALE : 1" = 1'
WISDOT/CADDS SHEET 42

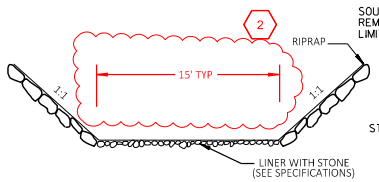
Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 105
September 30, 2022



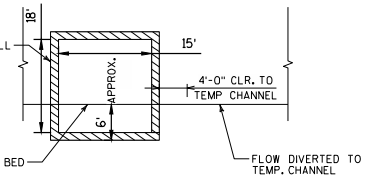
STAGE 4A



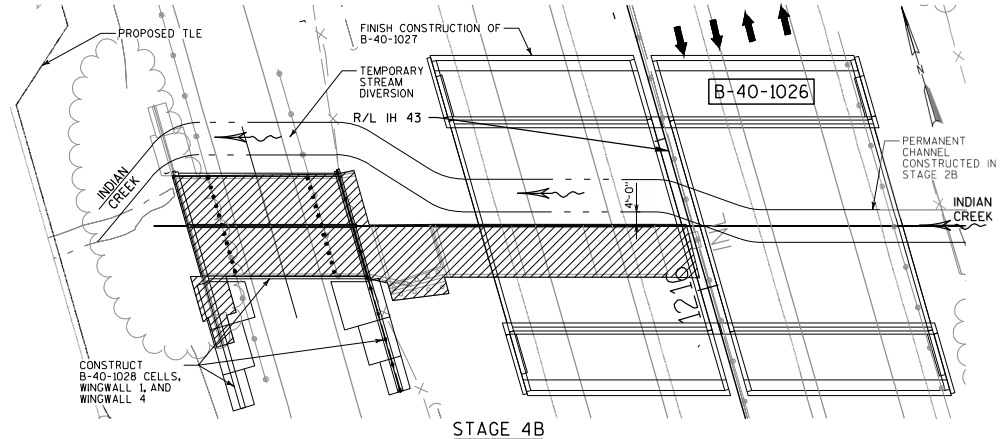
STAGE 4A REMOVAL SECTION
(LOOKING WEST)



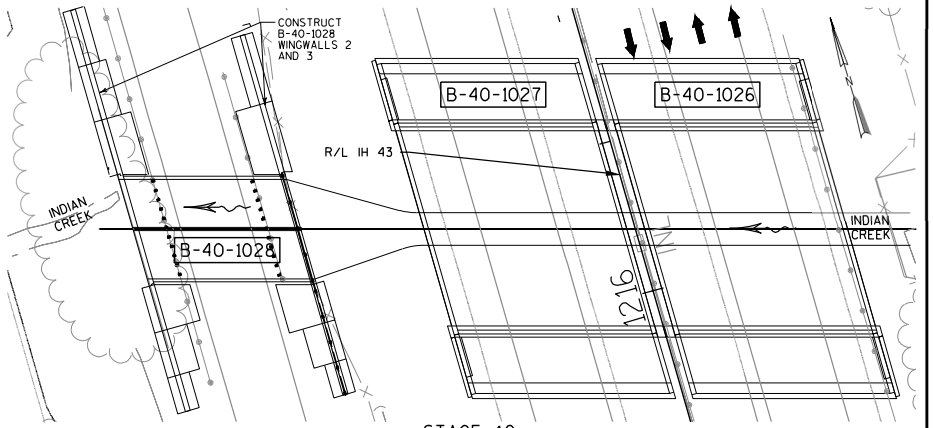
TEMPORARY DIVERSION CHANNEL SECTION



STAGE 4B REMOVAL SECTION
(LOOKING WEST)



STAGE 4B



STAGE 4C

NOTES

CONSTRUCTION SHOWN IN STAGE 4, ASSUMING IN-STREAM RESTRICTIONS WILL PREVENT CONSTRUCTION OF B-40-1027 AND B-40-1028 IN STAGE 3.

REMOVE EXISTING STRUCTURE B-40-23 FULL DEPTH. CUT EXISTING TIMBER PILES BELOW BOTTOM SLAB AND LEAVE IN PLACE.

ANY TEMPORARY SHORING ELECTED TO BE USED FOR STREAM DIVERSION IN IS INCIDENTAL TO BID ITEM "TEMPORARY WATER DIVERSION INDIAN CREEK". ANY TEMPORARY SHORING ELECTED TO BE USED FOR REMOVAL OF STRUCTURE B-40-23 BEYOND WHAT IS SHOWN IN THE PLANS IS INCIDENTAL TO ITEM "REMOVING EXISTING STRUCTURE B-40-23".

ESTIMATED FLOW RATES:
02 = 398 CFS
010 = 694 CFS

LEGEND

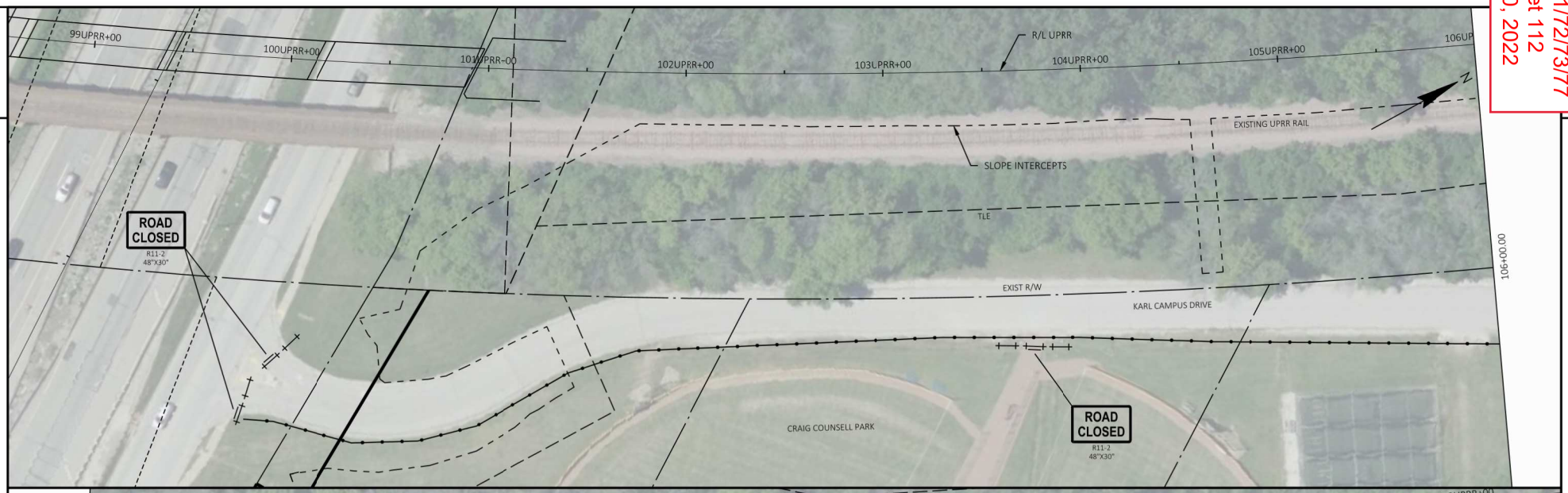
FLOW DIRECTION
REMOVAL LIMITS

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS - B-40-1026, B-40-1027, B-40-1028 STAGING AND REMOVAL	SHEET 105	E

FILE NAME : C:\CADD\IB\PW\HNTB_KARIMULLAH.HABIBUR\GREATLAKES\D0256213\021009_CD.DWG
LAYOUT NAME - 02
PLOT DATE : 9/27/2022 8:58 AM
PLOT BY : KARIMULLAH HABIBUR
PLOT NAME :
PLOT SCALE : 1" = 1'
WISDOT/CADDS SHEET 42

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 112
September 30, 2022

2





LEGEND

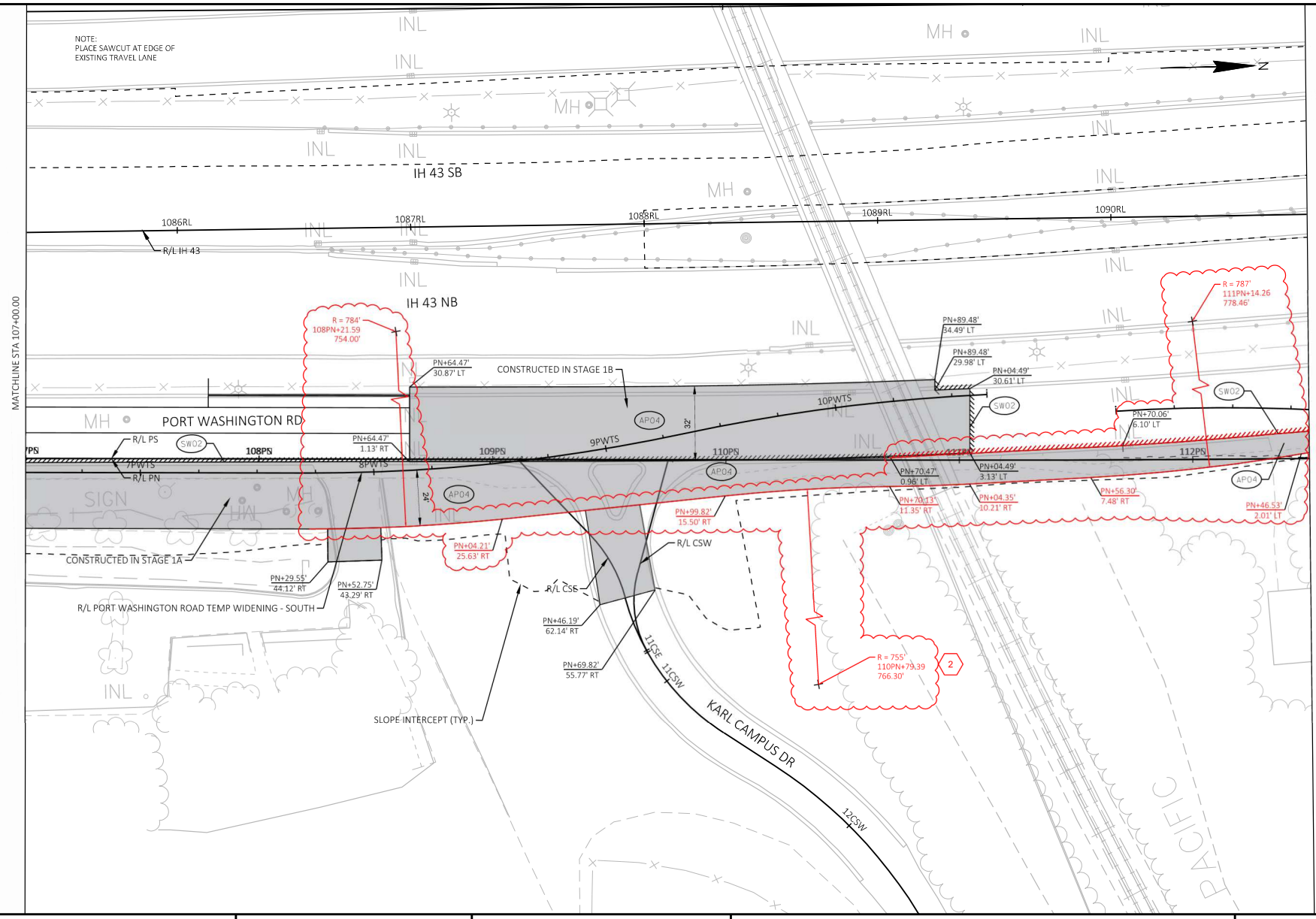
- UPRR ACCESS LOCATION OFF KARL CAMPUS DRIVE
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A AND ATTACHED SIGN
- SAFETY FENCE

NOTES

1. PLACE BARRICADES AND ROAD CLOSED SIGNS PER SDD "BARRICADES AND SIGN FOR VARIOUS CLOSURES".
2. MATERIAL OR VEHICLE STORAGE WITHIN PUBLIC RIGHT OF WAY IS PROHIBITED.
3. INSTALL EROSION MAT CLASS I TYPE A ON DISTURBED SOIL.
4. RESTORE VEGETATION AND ALL DAMAGED TURF USING SEEDING MIXTURE NO. 30 SPECIAL.
5. ADDITIONAL CLEARING MAY BE REQUIRED FOR MATERIAL STORAGE AREA. VERIFY LOCATIONS WITH FIELD ENGINEER PRIOR TO CLEARING.
6. INSTALL FENCING AROUND STORAGE AREAS.

PROJECT NO: 1229-04-72	HWY: IH 43	COUNTY: MILWAUKEE	CONSTRUCTION DETAIL - UPRR ACCESS	SHEET 112	E

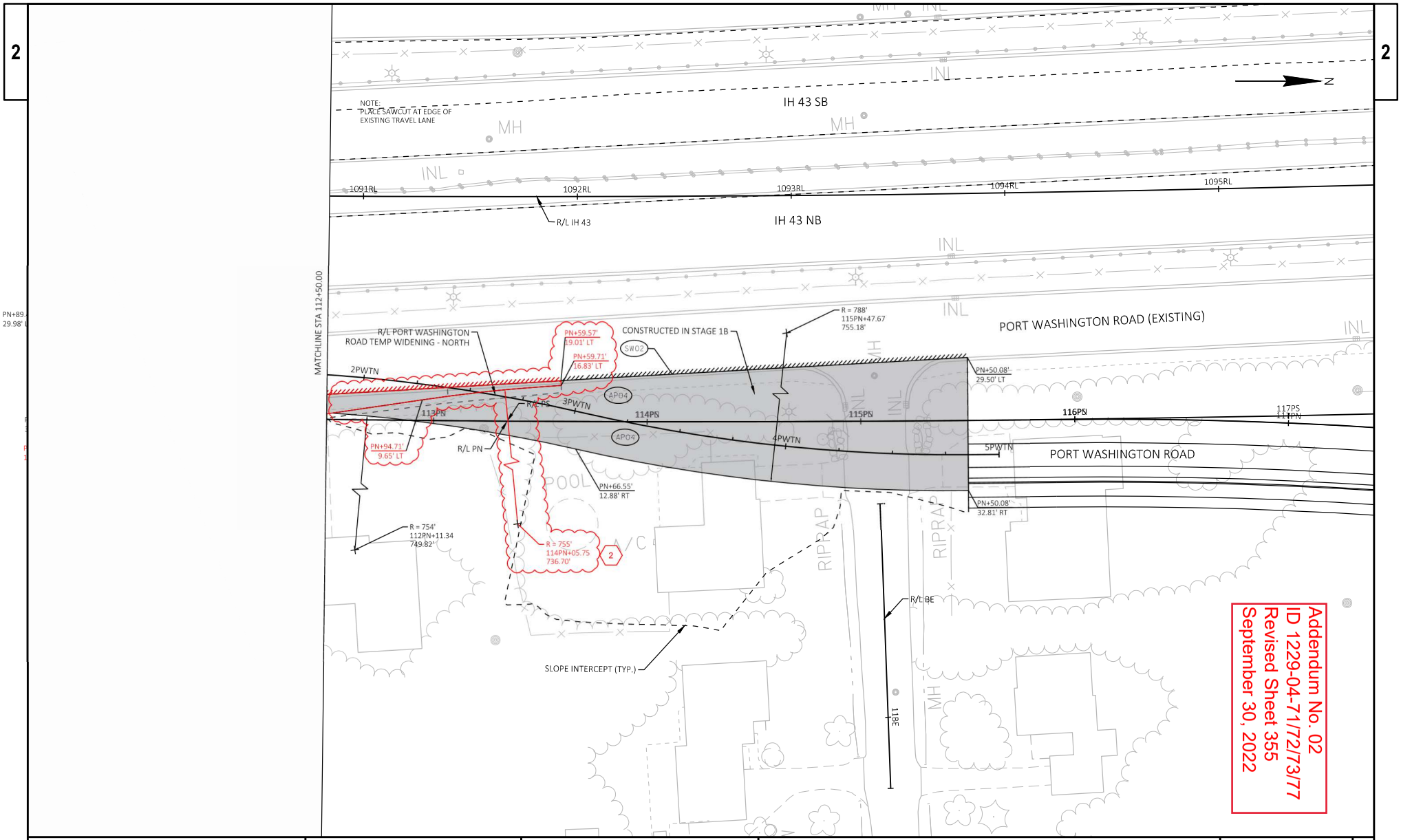
FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021012_CD.DWG
LAYOUT NAME - _001
PLOT DATE : 9/27/2022 11:18 AM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:50 FT



Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 354
September 30, 2022

PROJECT NO: 1229-04-71	HWY: PORT WASHINGTON ROAD	COUNTY: MILWAUKEE	PLAN DETAILS - PORT WASHINGTON ROAD STAGE 1 TEMPORARY WIDENING	SHEET 354	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021205_PD_PW-STG1A.DWG
LAYOUT NAME - _023
PLOT DATE : 9/26/2022 3:48 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

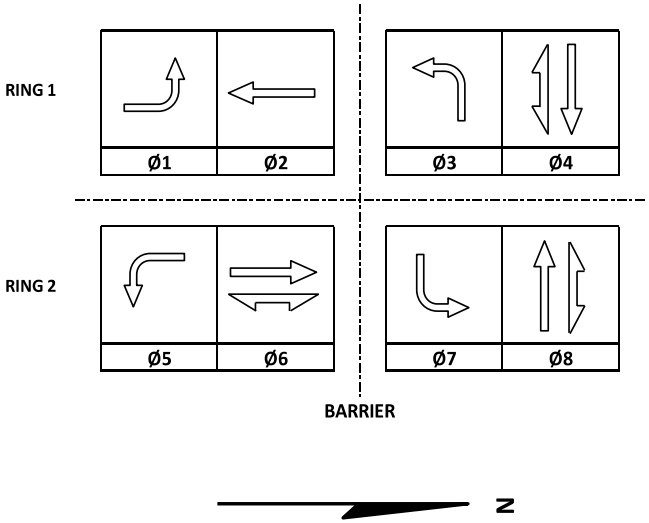


PROJECT NO: 1229-04-71	HWY: PORT WASHINGTON ROAD	COUNTY: MILWAUKEE	PLAN DETAILS - PORT WASHINGTON ROAD STAGE 1 TEMPORARY WIDENING	SHEET 355	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\021205_PD_PW-STG1A.DWG
LAYOUT NAME - _024
PLOT DATE : 9/26/2022 3:47 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

	HEAD NUMBERS	FLASH
Ø1	4,5,6,7	R
Ø2	8,9,10	R
Ø3	18,19,20	R
Ø4	21,22,23	R
Ø5	11,12,13,14	R
Ø6	1,2,3	R
Ø7	24,25,26	R
Ø8	15,16,17	R
Ø2P		
Ø4P	27,28	
Ø6P	31,32	
Ø8P	29,30	
OLA		
OLB		
OLC		
OLD		



TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	X
CELL MODEM	

TYPE OF COORDINATION		
NONE		
TBC		
TRAFFIC RESPONSIVE		X
ADAPTIVE		
*LOCATION OF MASTER CONTROLLER NO:	S-	
SIGNAL SYSTEM NO:	SS-	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
GTT	
TOMAR	
HARDWIRE	
OTHER	
CONFIRMATION LIGHTS	
LIFT BRIDGE	
QUEUE DETECTION	

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6	MAX	X
2		6	MAX	X
3		8	MAX	X
4		8	MAX	X
5		2	MAX	X
6		2	MAX	X
7		4	MAX	X
8		4	MAX	X

2 2

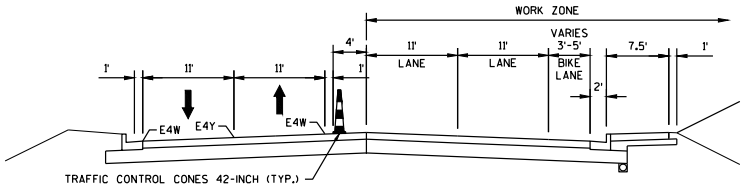
Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1118
September 30, 2022

PORT WASHINGTON RD & W BENDER RD/W DEVON ST
CITY OF GLENDALE
MILWAUKEE COUNTY
SIGNAL NO: LOCAL CABINET TYPE: TEMP
CONTROLLER TYPE: TEMP
DATE: 09/22 PAGE NUMBER: 8 OF 8

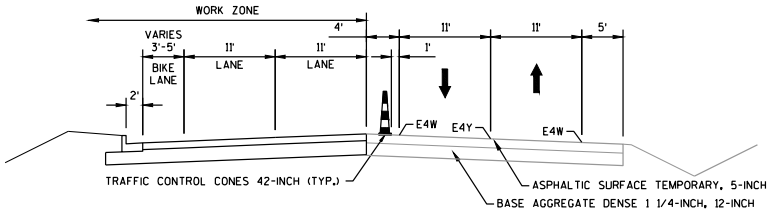
2

PROJECT NO: 1229-04-71	HWY: N PORT WASHINGTON RD	COUNTY: MILWAUKEE	TEMPORARY SEQUENCE OF OPERATIONS – ALL STAGES	SHEET NO: 1118	E

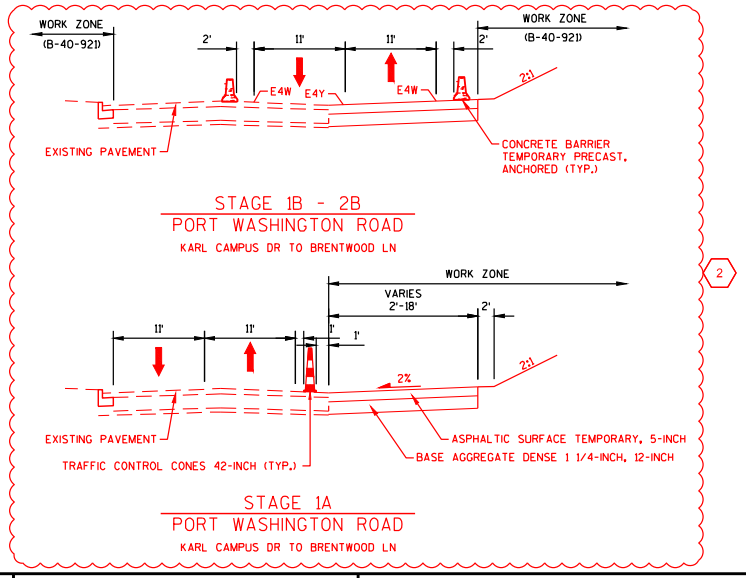
FILE NAME: \\dotwkefile1p\N3PUBLIC\SPO\Operations\Signals\Resources\Design\Sequence of Ops Templates\TS1.xlsx PLOT DATE: ########## PLOT NAME: TS1.xlsx PLOT BY: _____ PLOT SCALE: 1:1



STAGE 2D
PORT WASHINGTON ROAD
KARL CAMPUS DR TO BRENTWOOD LN



STAGE 2C
PORT WASHINGTON ROAD
KARL CAMPUS DR TO BRENTWOOD LN



2

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1216
September 30, 2022

PROJECT NO: 1229-04-71	HWY: PORT WASHINGTON RD	COUNTY: MILWAUKEE	TRAFFIC CONTROL TYPICAL SECTIONS	SHEET 1216	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026100_TC_TS-PW.DWG PLOT DATE : 9/26/2022 1:39 PM PLOT BY : DAN BAUMANN PLOT NAME : PLOT SCALE : 1:15

2

1229-04-71
STAGE 1A:
CONSTRUCTION:
- PORT WASHINGTON ROAD NB LANES FROM BRENTWOOD LANE TO COVENTRY COURT
- TEMPORARY WIDENING PORT WASHINGTON ROAD NB FROM BENDER ROAD TO
2 BRENTWOOD LANE
- TEMPORARY WIDENING PORT WASHINGTON ROAD MEDIANS AT BENDER ROAD
- TEMPORARY WIDENING PORT WASHINGTON ROAD MEDIAN AT COVENTRY COURT

TRAFFIC:
- PORT WASHINGTON ROAD IS OPEN TO TRAFFIC ON EXISTING LANES
- KARL CAMPUS DRIVE IS CLOSED TO TRAFFIC
- BRENTWOOD LANE IS CLOSED TO TRAFFIC
- CLOVERNOOK LANE IS CLOSED TO TRAFFIC
- APPLE TREE ROAD IS CLOSED TO TRAFFIC
- DAPHNE ROAD IS CLOSED TO TRAFFIC

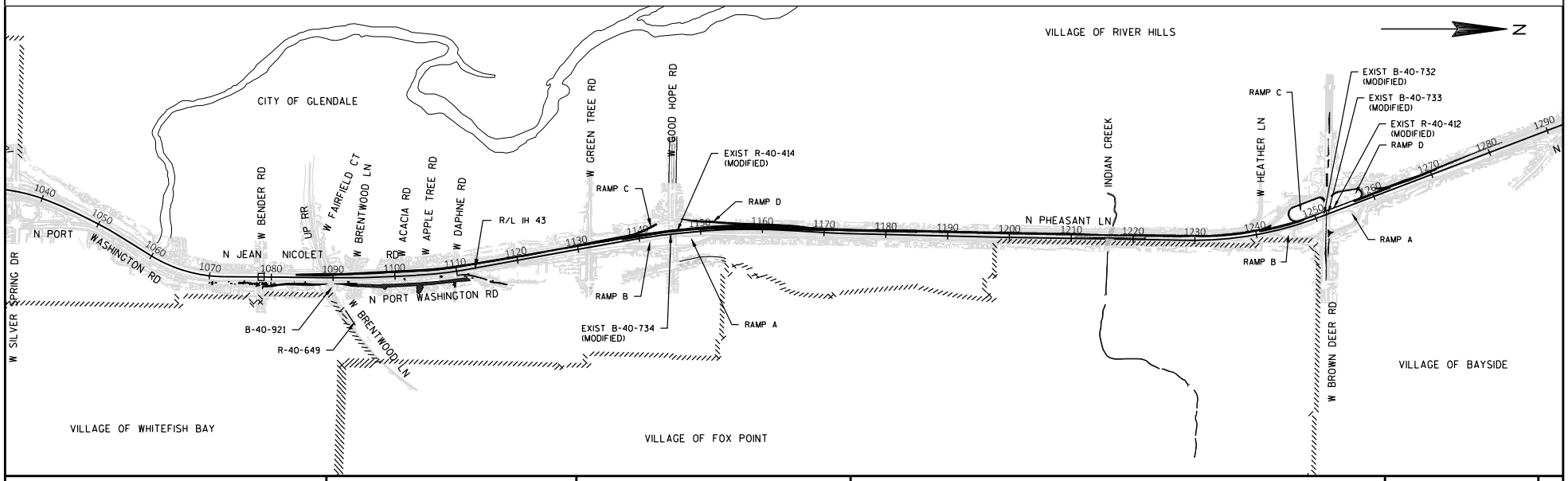
1229-04-72
STAGE 1A:
CONSTRUCTION:
- CONSTRUCT UPRR ACCESS ROAD
- BEGIN UPRR EMBANKMENT
- BEGIN UPRR STRUCTURE B-40-921
- BEGIN RETAINING WALL R-40-649

TRAFFIC:
- UPRR TRAFFIC IS ON EXISTING RAILS

1229-04-73
STAGE 1A:
CONSTRUCTION:
- IH 43 SB OUTSIDE TEMPORARY WIDENING
- TEMPORARY RAMP GOOD HOPE ROAD RAMP C
- TEMPORARY RAMP GOOD HOPE ROAD RAMP D
- TEMPORARY RAMP BROWN DEER ROAD RAMP C
- TEMPORARY RAMP BROWN DEER ROAD RAMP D
- RETAINING WALL R-40-412 (SOUTH OF BROWN DEER ROAD), R-40-414 (SOUTH OF GOOD HOPE ROAD)
- REMOVE MEDIAN ON B-40-732 & B-40-733 (BROWN DEER ROAD BRIDGES) AND B-40-734 (GOOD HOPE ROAD EB BRIDGE)
- CONSTRUCT DRAINAGE SWALE ADJACENT TO GOOD HOPE ROAD RAMP C

TRAFFIC:
- IH 43 NB TO MAINTAIN TWO LANES ON EXISTING LANES
- IH 43 SB TO MAINTAIN TWO LANES ON EXISTING LANES DURING PEAK HOURS, ONE LANE ON EXISTING INSIDE LANE DURING OFF PEAK HOURS
- GOOD HOPE ROAD INTERCHANGE NB RAMPS OPEN TO TRAFFIC
- GOOD HOPE ROAD INTERCHANGE SB RAMPS OPEN TO TRAFFIC
- GOOD HOPE ROAD IS OPEN TO TRAFFIC ON EXISTING LANES
- BROWN DEER ROAD INTERCHANGE RAMPS (NB TO EB, NB TO WB, EB TO NB, SB TO WB, AND EB TO SB) OPEN TO TRAFFIC
- BROWN DEER ROAD INTERCHANGE RAMPS (SB TO EB AND EB TO SB) CLOSED TO TRAFFIC
- BROWN DEER ROAD IS OPEN TO TRAFFIC ON EXISTING LANES
- GOOD HOPE ROAD IS OPEN TO TRAFFIC ON EXISTING LANES
- PORT WASHINGTON ROAD AT GOOD HOPE ROAD IS OPEN TO TRAFFIC
- JEAN NICOLET ROAD IS CLOSED TO TRAFFIC FROM BENDER ROAD TO BRENTWOOD LANE
- JEAN NICOLET ROAD IS OPEN TO TRAFFIC FROM BRENTWOOD LANE TO GREEN TREE ROAD
- FAIRFIELD COURT IS CLOSED TO TRAFFIC

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1218
September 30, 2022



PROJECT NO: 1229-04-71/-72/-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1A OVERVIEW	SHEET 1218	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026101_TC1A-OVERVIEW.DWG PLOT DATE : 9/26/2022 4:13 PM PLOT BY : DAN BAUMANN PLOT NAME : PLOT SCALE : 1 IN:800 FT

WISDOT/CADDS SHEET 44

NOTES:
TRAFFIC CONTROL FOR LOCAL ROAD STAGING IS SHOWN ON SEPARATE SHEETS.

LANE CLOSURES ONLY PERMITTED DURING OFF PEAK HOURS. SEE SPECIFICATIONS FOR LANE CLOSURE RESTRICTIONS.

OFF PEAK LANE CLOSURE SHOWN - SEE SDD 15D12A FOR MORE DETAILS.

DURING PEAK HOURS, INSTALL A RIGHT SHOULDER CLOSURE, SEE SDD 15D27 FOR MORE DETAILS.

CONSTRUCTION WORK IN THIS ~~AREA SHALL BE COMPLETED DURING~~ SHORT TERM RAMP CLOSURES (3 CONSECUTIVE DAYS MAXIMUM); RAMP IS OPEN OUTSIDE OF THESE CLOSURES. DO NOT CLOSE GOOD HOPE RD ENTRANCE RAMP AT THE SAME TIME AS BROWN DEER RD ENTRANCE RAMP. 2

ROAD WORK AHEAD W20.1A

LANE CLOSED R11-2L 48"X30"

END ROAD WORK G20.2A 48"X24"

W GOOD HOPE RD

IH 43 SB

IH 43 NB

R/L IH 43

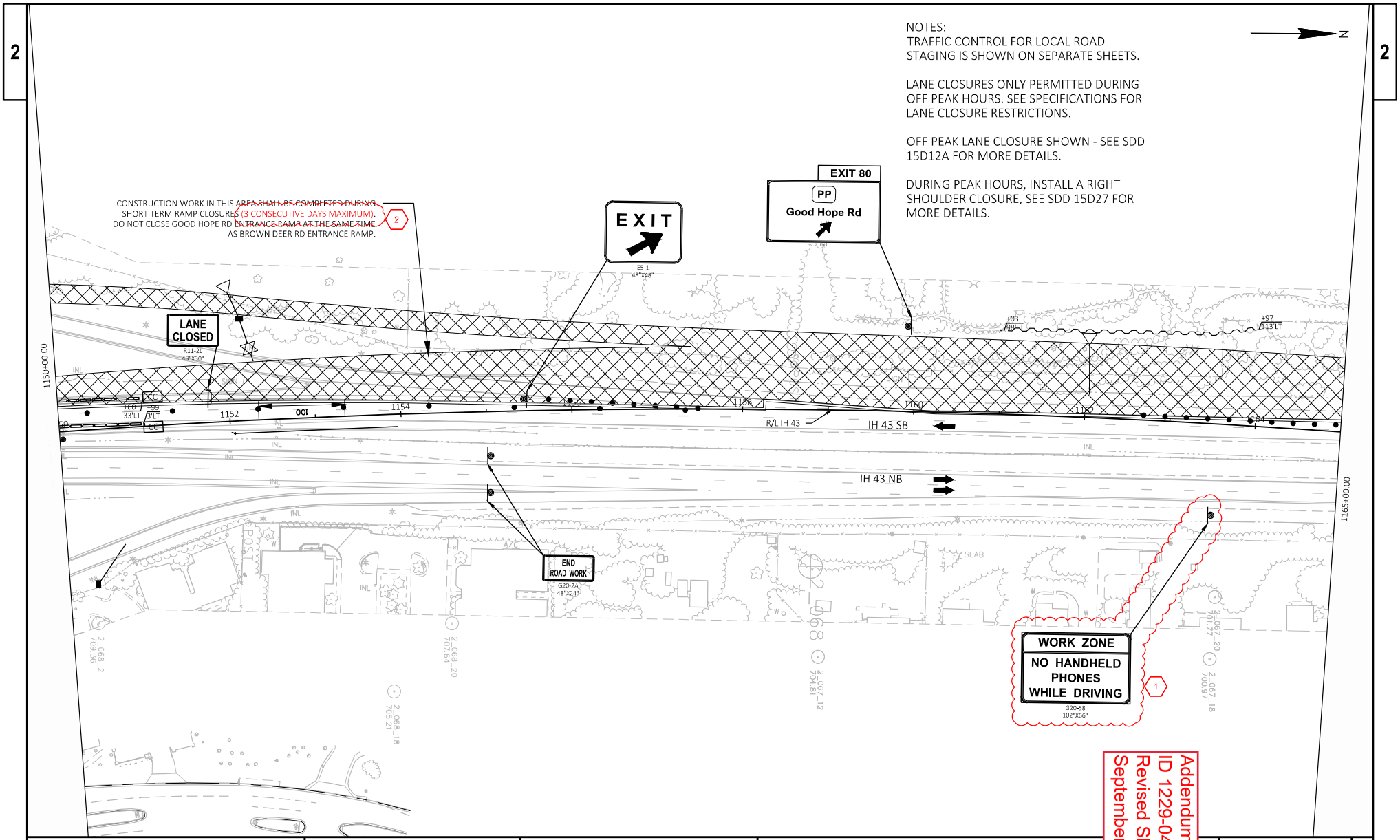
1135+00.00

1150+00.00

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1223
September 30, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1A	SHEET 1223	E

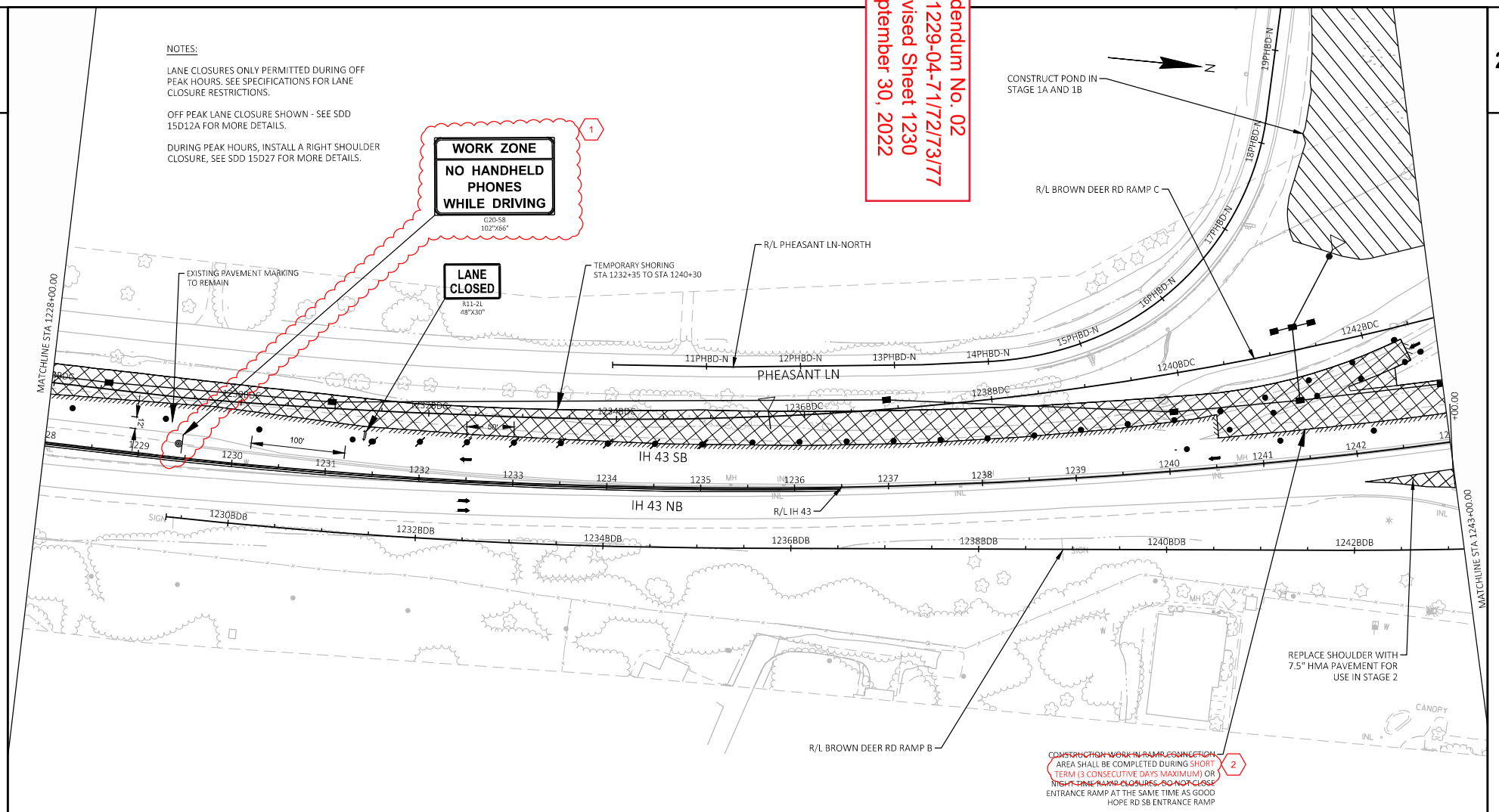
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PLOT DATE : 9/28/2022 1:22 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1A	SHEET 1224	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026101-TC1A.DWG
LAYOUT NAME - Sheet - (6)
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PLOT BY : DAN BAUMANN
PLOT NAME :

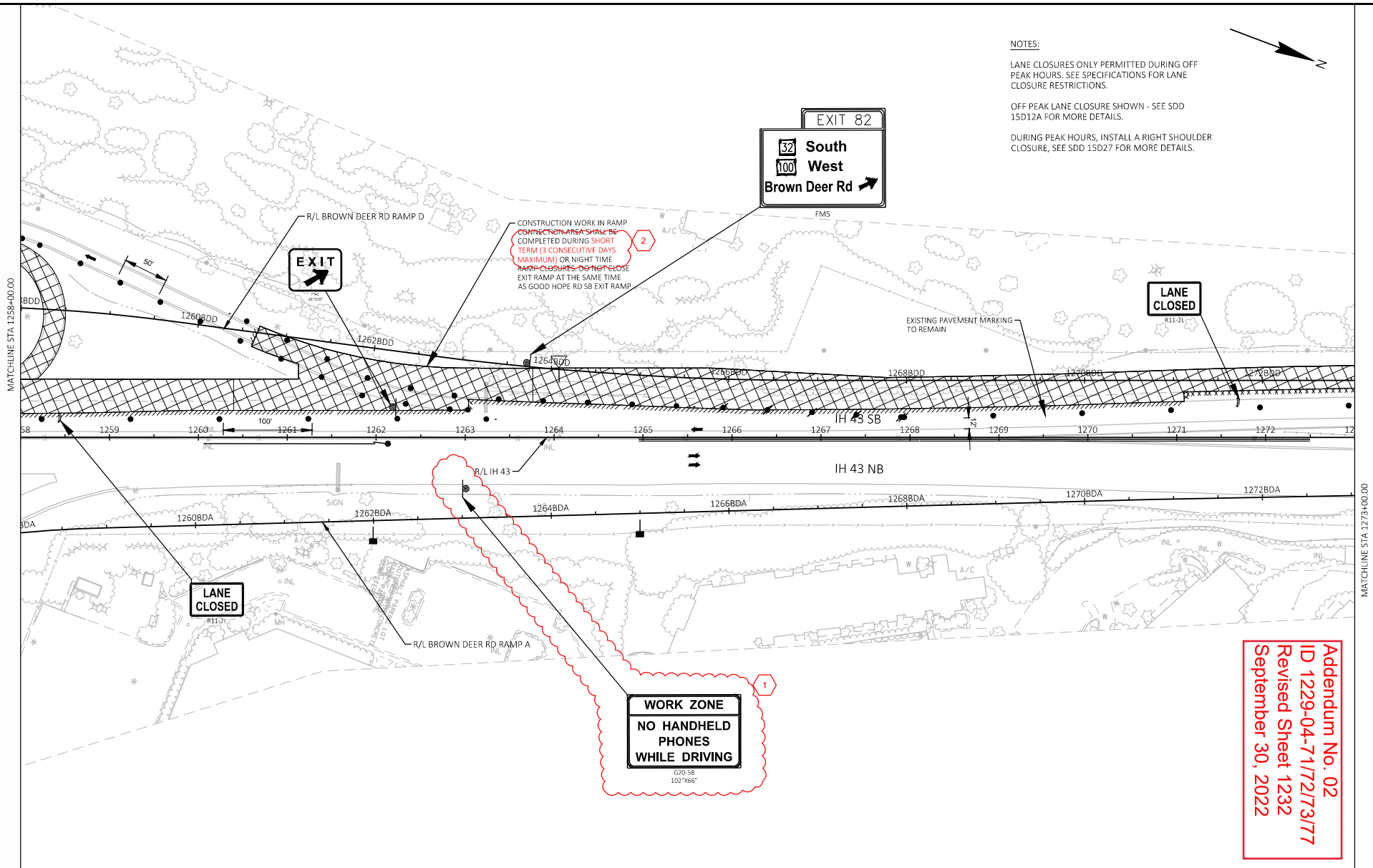
Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1230
September 30, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1A	SHEET 1230	E

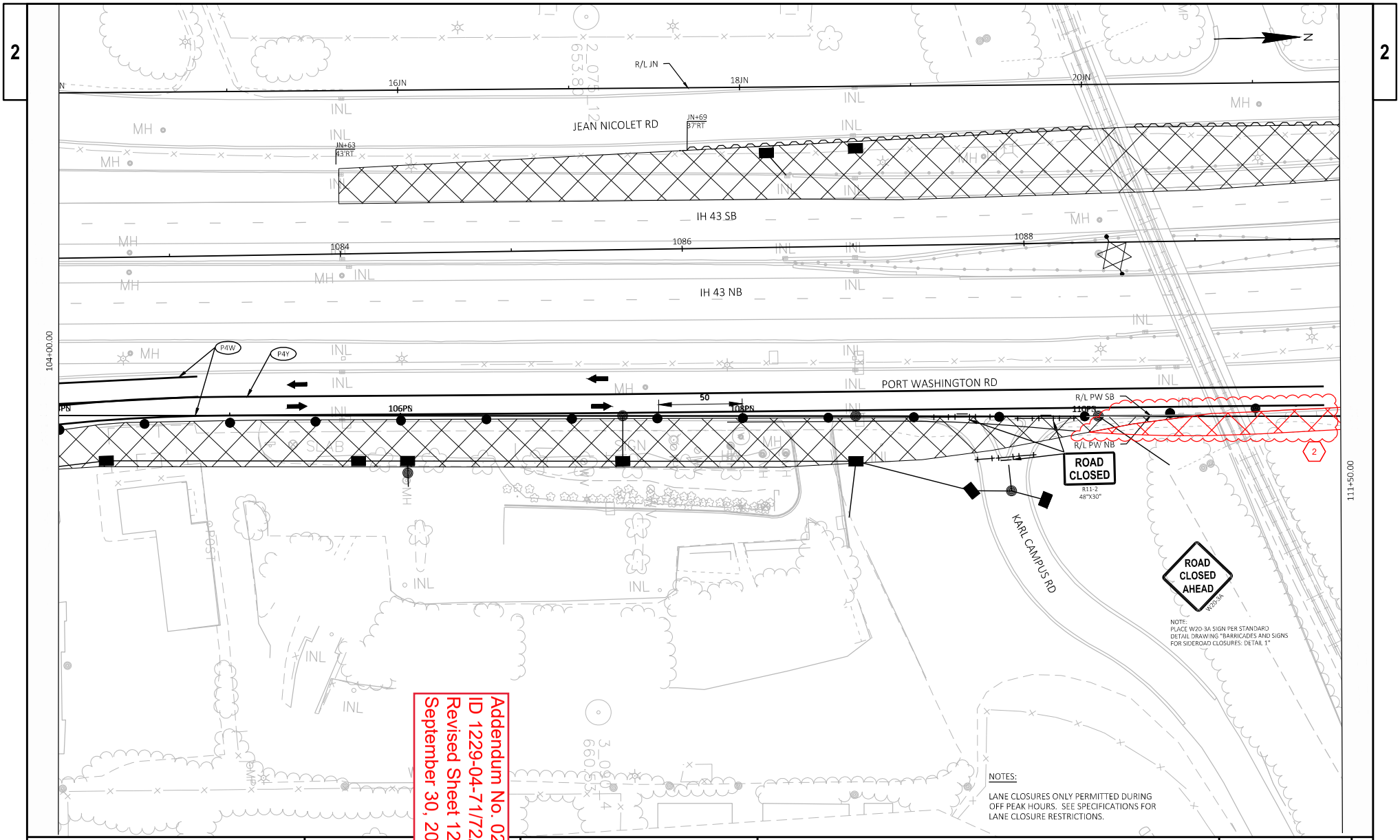
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PLOT NAME :
PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1A	SHEET 1232	E

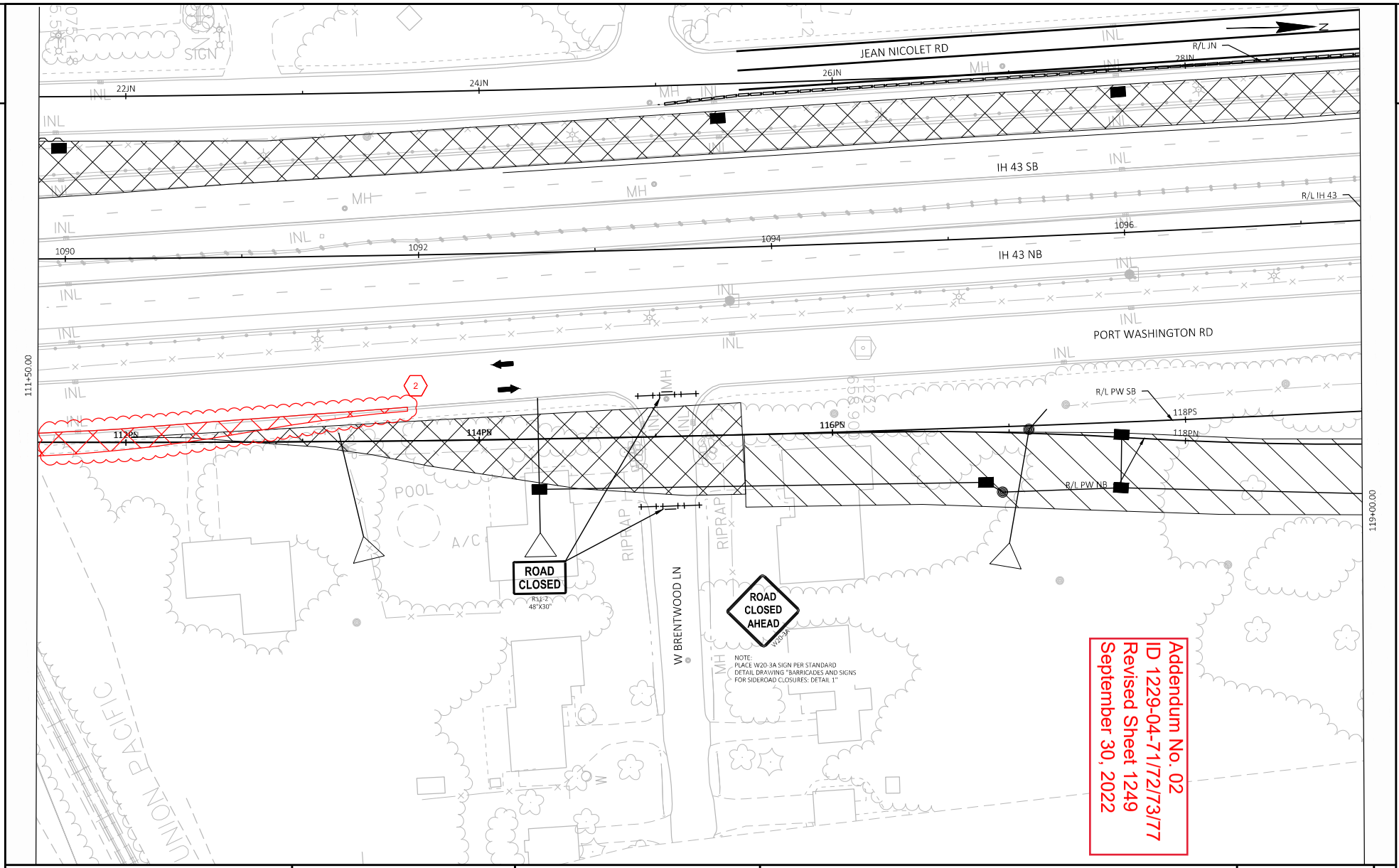
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PLOT BY :
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1248
September 30, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1A	SHEET 1248	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026101-TC1A.DWG
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PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:50 FT



PROJECT NO: 122-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1A	SHEET 1249	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026101-TC1A.DWG
LAYOUT NAME - Sheet - (9)
PLOT DATE : 9/26/2022 10:39 AM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:50 FT

2

1229-04-71
STAGE 1B:
CONSTRUCTION:
- COMPLETE PORT WASHINGTON ROAD NB FROM BRENTWOOD LANE TO DAPHNE ROAD.
- PORT WASHINGTON ROAD NB FROM DAPHNE ROAD TO COVENTRY COURT.
- PORT WASHINGTON ROAD SB FROM BENDER ROAD TO KARL CAMPUS DRIVE.
- TEMPORARY CONNECTION FROM EXISTING PORT WASHINGTON ROAD TO PROPOSED PORT WASHINGTON ROAD NB LANES.
- TEMPORARY CONNECTION FROM PROPOSED PORT WASHINGTON ROAD SB LANES TO EXISTING PORT WASHINGTON ROAD.

TRAFFIC:
- SHIFT PORT WASHINGTON ROAD FROM BENDER ROAD TO BRENTWOOD LANE (2) TO TEMPORARY PAVEMENT. MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION.
- PORT WASHINGTON ROAD IS OPEN TO TRAFFIC ON EXISTING LANES FROM EXISTING UPRR BRIDGE TO COVENTRY COURT.
- KARL CAMPUS IS OPEN TO TRAFFIC
- BRENTWOOD LANE IS CLOSED TO TRAFFIC
- CLOVERLOOK LANE IS CLOSED TO TRAFFIC
- APPLE TREE ROAD IS CLOSED TO TRAFFIC
- DAPHNE LANE IS CLOSED TO TRAFFIC

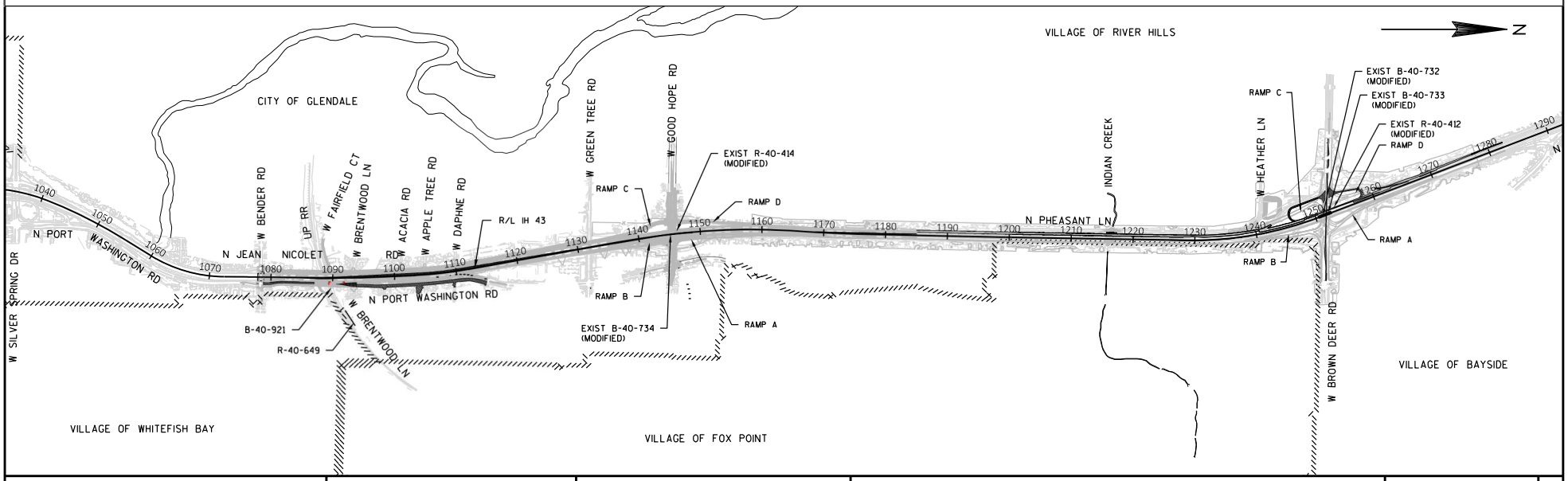
1229-04-72
STAGE 1B:
CONSTRUCTION:
- CONTINUE UPRR EMBANKMENT
- CONTINUE UPRR STRUCTURE B-40-921
- CONTINUE RETAINING WALL R-40-649

TRAFFIC:
- UPRR TRAFFIC IS ON EXISTING RAILS

1229-04-73
STAGE 1B:
CONSTRUCTION:
- TEMPORARY WIDENING PAVEMENT ON THE IH 43 SB INSIDE SHOULDER.
- CONTINUE B-40-732 (BROWN DEER ROAD EB BRIDGE) AND B-40-734 (GOOD HOPE ROAD EB BRIDGE) BRIDGE WIDENING.
- CONTINUE R-40-412 (SOUTH OF BROWN DEER ROAD) AND R-40-414 (SOUTH OF GOOD HOPE ROAD).
- COMPLETE TEMPORARY PAVEMENT IN THE MEDIAN ON BROWN DEER ROAD.
- TEMPORARY PAVEMENT IN THE MEDIAN ON GOOD HOPE ROAD AND PORT WASHINGTON ROAD (AT GOOD HOPE ROAD).
- CONSTRUCT B-40-732 PIER (BROWN DEER ROAD WB BRIDGE).

TRAFFIC:
- SHIFT IH 43 NB TRAFFIC TO OUTSIDE SHOULDER. MAINTAIN TWO LANES OF TRAFFIC.
- SHIFT IH 43 SB TRAFFIC TO TEMPORARY WIDENING. MAINTAIN TWO LANES OF TRAFFIC.
- GOOD HOPE ROAD INTERCHANGE NB RAMPS ARE OPEN TO TRAFFIC ON EXISTING LANES.
- GOOD HOPE ROAD INTERCHANGE SB RAMPS ARE OPEN TO TRAFFIC ON TEMPORARY RAMPS.
- BROWN DEER ROAD INTERCHANGE RAMPS (SB TO EB, AND WB TO SB) ARE CLOSED TO TRAFFIC.
- BROWN DEER ROAD INTERCHANGE RAMPS (NB TO EB, NB TO WB, EB TO NB, WB TO NB, SB TO WB, AND EB TO SB) ARE OPEN TO TRAFFIC.
- SHIFT GOOD HOPE ROAD EB AND WB TO OUTSIDE LANES. REDUCE TO ONE LANE IN EACH DIRECTION.
- BROWN DEER ROAD IS OPEN TO TRAFFIC ON EXISTING LANES.
- JEAN NICOLET ROAD FROM BENDER ROAD TO BRENTWOOD LANE IS CLOSED TO TRAFFIC.
- JEAN NICOLET ROAD FROM BRENTWOOD LANE TO GREEN TREE ROAD IS OPEN TO TRAFFIC.
- FAIRFIELD COURT IS CLOSED TO TRAFFIC.
- SHIFT PORT WASHINGTON ROAD (AT GOOD HOPE ROAD) NB AND SB TO OUTSIDE LANES. REDUCE TO ONE LANE IN EACH DIRECTION.

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1253
September 30, 2022

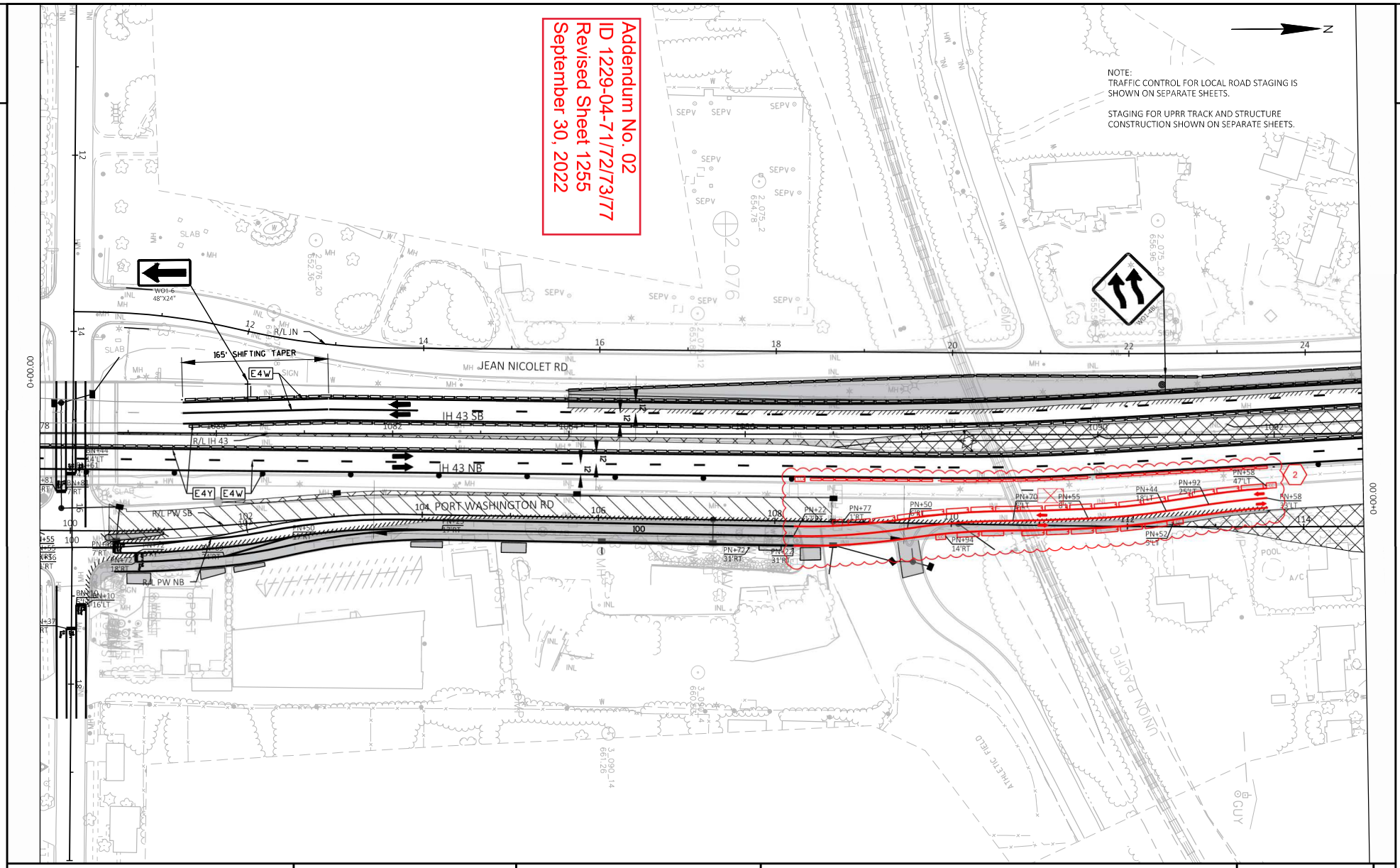


PROJECT NO: 1229-04-71/-72/-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1B OVERVIEW	SHEET 1253	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026101_TC1B-OVERVIEW.DWG PLOT DATE : 9/26/2022 4:31 PM PLOT BY : DAN BAUMANN PLOT NAME : PLOT SCALE : 1 IN:800 FT

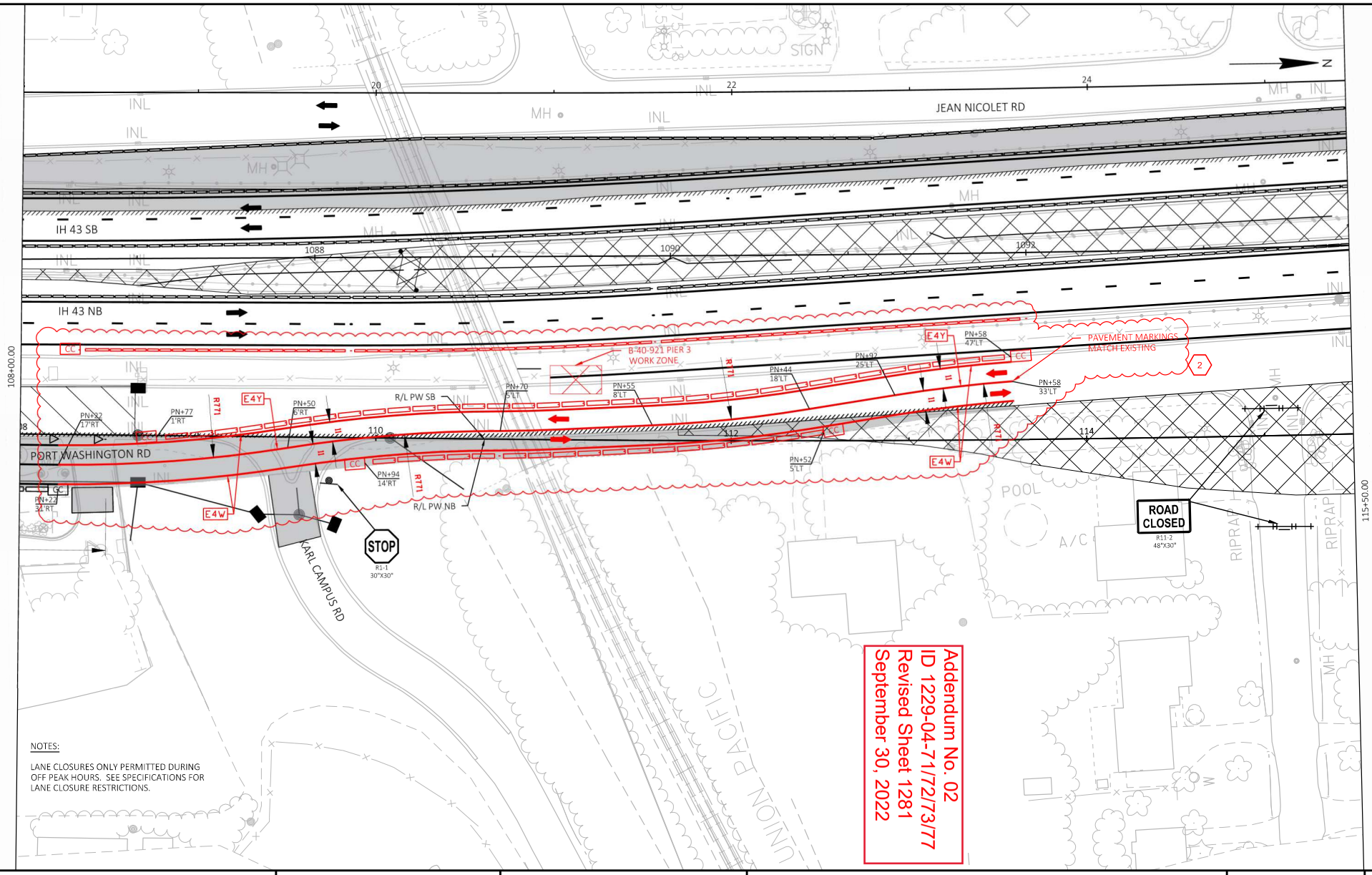
WISDOT/CADDS SHEET 44

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1255
September 30, 2022



PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1B	SHEET 1255	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026102-TC18.DWG
LAYOUT NAME - Sheet - (2)
PLOT DATE : 9/26/2022 1:01 PM
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PLOT NAME :
PLOT SCALE : 1 IN:100 FT



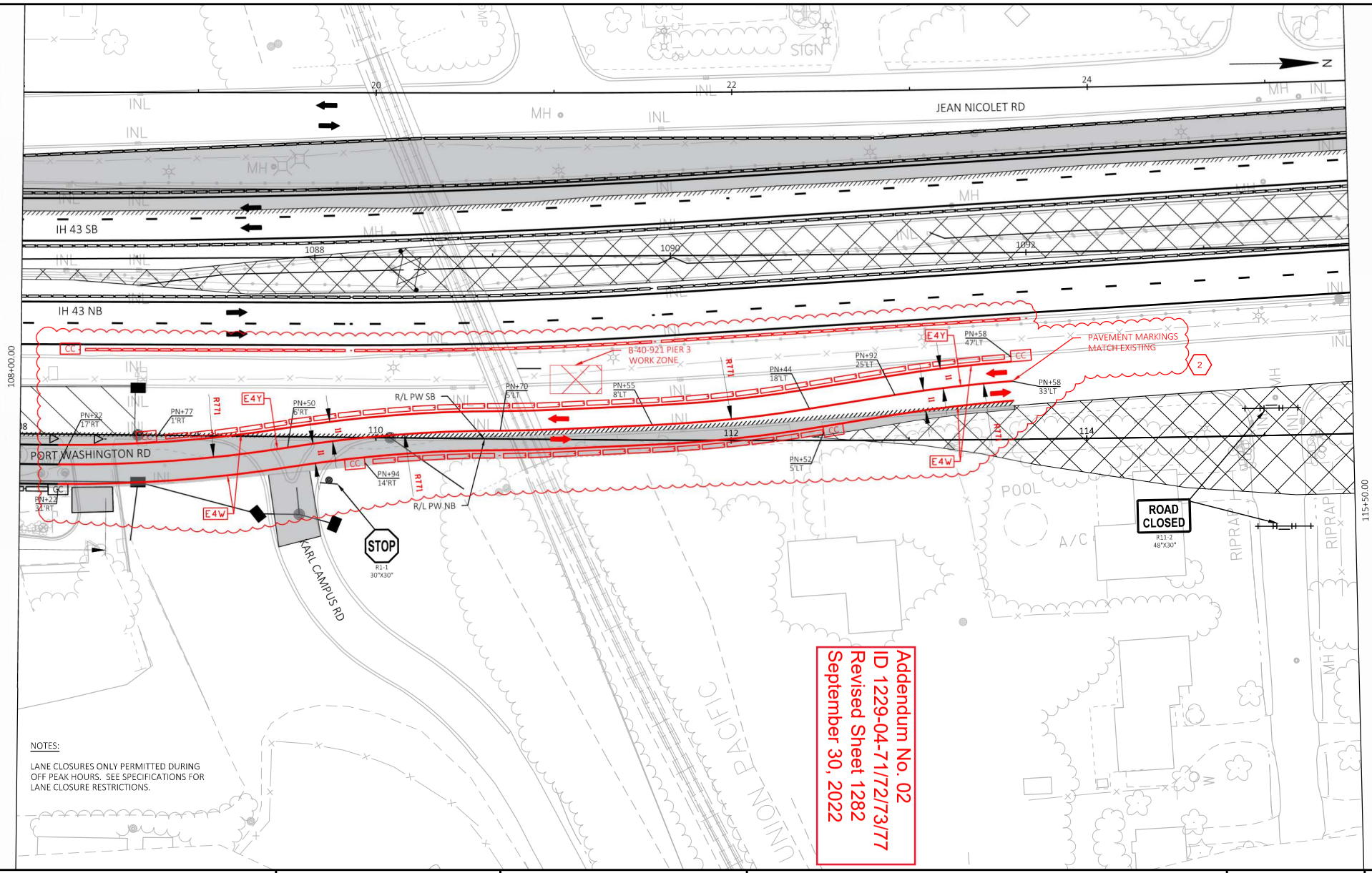
NOTES:

LANE CLOSURES ONLY PERMITTED DURING OFF PEAK HOURS. SEE SPECIFICATIONS FOR LANE CLOSURE RESTRICTIONS.

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1281
September 30, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1B	SHEET 1281	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026102-TC13.DWG
LAYOUT NAME - Sheet - (10)
PLOT DATE : 9/26/2022 12:49 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:50 FT



NOTES:

LANE CLOSURES ONLY PERMITTED DURING OFF PEAK HOURS. SEE SPECIFICATIONS FOR LANE CLOSURE RESTRICTIONS.

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1B	SHEET 1282	E

FILE NAME : C:\CADDLIB\PW\DBAUMANN\PWGREAT_LAKES\D0256213\026102-TC13.DWG
LAYOUT NAME - Sheet - (10)
PLOT DATE : 9/26/2022 1:00 PM
PLOT BY : DAN BAUMANN
PLOT NAME :
PLOT SCALE : 1 IN:50 FT

EARTHWORK SUMMARY

STAGE	ROADWAY	STATION TO STATION	205.0100 COMMON EXCAVATION CUT CY	205.0100 COMMON EXCAVATION EBS EXCAVATION CY	* 310.0110 BREAKER RUN TON	SPV.0035.0001 ROADWAY EMBANKMENT CY
STAGE 1A						
	PORT WASHINGTON ROAD TEMPORARY PAVEMENT - SOUTH	0+01 - 10+28	2,577	0	0	68
	PORT WASHINGTON ROAD TEMPORARY PAVEMENT - NORTH	1+02 - 4+86	2,929	0	0	0
	PORT WASHINGTON ROAD MEDIANS		401	0	0	0
	STAGE 1A SUBTOTAL		5,907	0	0	68
STAGE 1B						
	PORT WASHINGTON ROAD- SOUTH	100+23 - 108+64	339	0	0	311
	PORT WASHINGTON ROAD - NORTH	115+50 - 136+71	14,083	0	0	1,723
	CLOVERNOOK LANE	10+60 - 10+71	16	0	0	0
	APPLETREE ROAD (EAST)	10+04 - 11+35	1,167	0	0	1
	DAPHNE ROAD (EAST)	10+57 - 11+25	124	0	0	9
	STAGE 1B SUBTOTAL		15,729	0	0	2,044
STAGE 2A						
	PORT WASHINGTON ROAD	100+22 - 136+70	5,603	0	0	5,511
	STAGE 2A SUBTOTAL		5,603	0	0	5,511
STAGE 2B						
	PORT WASHINGTON ROAD	108+65 - 115+50	4,533	0	0	352
	STAGE 2B SUBTOTAL		4,533	0	0	352
STAGE 2C						
	PORT WASHINGTON ROAD	108+65 - 115+50	181	0	0	464
	STAGE 2C SUBTOTAL		181	0	0	464
STAGE 2D						
	PORT WASHINGTON ROAD	108+65 - 115+50	1,145	0	0	607
	KARL CAMPUS DRIVE	10+50 - 11+66	317	0	0	2
	BRENTWOOD LANE (EAST)	10+06 - 10+79	219	0	0	18
	STAGE 2D SUBTOTAL		1,681	0	0	627
STAGE 3A						
	PORT WASHINGTON ROAD	100+22 - 107+78	540	0	0	74
	STAGE 3A SUBTOTAL		540	0	0	74
STAGE 3B						
	PORT WASHINGTON ROAD	100+39 - 101+17	7	0	0	1
	STAGE 3B SUBTOTAL		7	0	0	1
GRAND TOTAL			**34,181**	**0**	**0**	**9,141**
		TOTAL COMMON EXC		**34,181**		

NOTES:

(1) ALL EXISTING PAVEMENT SHALL BE REMOVED PER MODIFIED SPEC 205.3.2.5. CUT VOLUME INCLUDES CONCRETE AND ASPHALTIC SURFACE MATERIAL.

(2) EBS EXCAVATION TO BE BACKFILLED WITH BREAKER RUN. ALL EBS MATERIAL IS ASSUMED TO BE WASTED OFFSITE.

(3) ROADWAY EMBANKMENT = UNEXPANDED FILL

(4) ALL EXISTING PAVEMENTS SHALL BE REMOVED PER MODIFIED SPEC 205.3.2.5. EMBANKMENT VOLUME IS BASED ON THE EXISTING SURFACE AND DOES NOT ACCOUNT FOR REMOVAL OF EXISTING CONCRETE AND ASPHALTIC PAVEMENTS.

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1606
September 30, 2022

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1610
September 30, 2022

3

BASE AND SUBBASE ITEMS

CATEGORY	STAGE	ROADWAY	STATION		TO STATION	OFFSET	* CAT 1000 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	* CAT 1020 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
		LOCAL ROADS						
1000	1	PORT WASHINGTON RD	96PWN+67	-	113PWN+59	RL	2,266	--
1020				-			--	205
			100PWN+38	-	110PWN+70	RL	671	--
			100PWN+42	-	108PWN+64	LT	1,277	--
			108PWN+64	-	115PWN+50	RL	1,450	--
			115PWN+50	-	136PWN+71	RT	4,925	--
			137PWN+19	-	140PWN+00	LT	290	--
1000	1	CLOVERNOOK LANE	10CK+26	-	10CK+71	RL	129	--
1000	1	APPLE TREE ROAD	10AE+03	-	11AE+35	RL	569	--
1000	1	DAPHNE ROAD	10DE+29	-	11DE+25	RL	218	--
		STAGE 1 SUBTOTAL					11,793	205
		LOCAL ROADS						
1000	2	PORT WASHINGTON RD	100PWN+20	-	108PWN+64	RT	1,820	--
1020			99PWN+16	-	100PWN+42	RL	--	664
			108PWN+64	-	115PWN+50	RL	2,548	--
			108PWN+64	-	115PWN+50	RL	1,575	--
			115PWN+50	-	136PWN+71	LT	5,245	--
			137PWN+13	-	139PWN+98	LT	320	--
1000	2	KARL CAMPUS DRIVE	10CSW+23	-	11CSW+78	RL	387	--
1000	2	BRENTWOOD LANE	10BE+02	-	10BE+79	RL	330	--
	2	BENDER ROAD	13BN+30	-	14BN+15	RL	--	178
		STAGE 2 SUBTOTAL					12,225	842
		LOCAL ROADS						
1020	3	PORT WASHINGTON RD	96PWN+65	-	99PWN+63	LT	--	208
1000			100PWN+39	-	101PWN+19	LT	41	--
			100PWN+22	-	107PWN+78	LT	340	--
		STAGE 3 SUBTOTAL					381	208
		TOTALS					**24,400**	**1,255**

2

BASE PATCHING CONCRETE

CATEGORY	STAGE	ROADWAY	STATION		TO STATION	OFFSET	390.0303 BASE PATCHING CONCRETE SY
		LOCAL ROADS					
1000	2	PORT WASHINGTON ROAD	97PN+05	-	97PN+23	RT/LT	48
	2	BENDER ROAD	14BN+14	-	14BN+26	RT	27
			18BN+95	-	19BN+07	LT	22
		STAGE 2 SUBTOTAL					97
		TOTALS					**97**

DRIVEWAY ITEMS

CATEGORY	STAGE	ROADWAY	STATION	OFFSET	416.0260 CONCRETE DRIVEWAY HES 6-INCH SY	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON
		LOCAL ROADS				
1000	1	APPLE TREE ROAD	10PWL+28	LT	--	39
			10PWN+94	LT	--	30
			11PWN+20	RT	--	22
	1	DAPHNE ROAD	10DE+87	RT	--	28
		STAGE 1 SUBTOTAL			--	91
		MAINLINE				
1000	2	PORT WASHINGTON ROAD	104PWN+06	RT	28	32
			105PWN+00	RT	--	88
			108PWN+43	RT	--	66
		STAGE 2 SUBTOTAL			28	185
		TOTALS			**28**	**276**

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 1610	E

pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\J_Roadway & Drainage\PSE\1229-04-73 South End Good Hope & Brown Deer\SheetsPlan\03 Estimate of Quantities\71_030204_MQ
PLOT DATE : 9/26/2022 4:59:43 PM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ1 PLOT SCALE : 1:1

3

3

ASPHALT PAVEMENT ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	450.4000 HMA COLD WEATHER PAVING TON	CAT 1000 455.0605 TACK COAT GAL	CAT 1020 455.0605 TACK COAT GAL	CAT 1000 460.6223 HMA PAVEMENT 3 MT 58-28 S TON	CAT 1020 460.6223 HMA PAVEMENT 3 MT 58-28 S TON	CAT 1000 460.6224 HMA PAVEMENT 4 MT 58-28 S TON	CAT 1020 460.6224 HMA PAVEMENT 4 MT 58-28 S TON	465.0110 ASPHALTIC SURFACE PATCHING TON	CAT 1000 465.0125 ASPHALTIC SURFACE TEMPORARY TON	CAT 1020 465.0125 ASPHALTIC SURFACE TEMPORARY TON	465.0310 ASPHALTIC CURB LF
		MAINLINE															
1000	1	PORT WASHINGTON ROAD	96PWN+67	-	113PWN+59	RL	--	476	--	--	--	--	--	--	952	--	--
1020			101PWN+76	-	106PWN+22	LT	--	24	--	--	--	--	--	--	48	--	--
			100PWN+38	-	110PWN+70	RL	--	141	--	--	--	--	--	--	282	--	1,855
			100PWN+42	-	108PWN+64	LT	--	313	--	375	--	250	--	--	--	--	--
			101PWN+33	-	102PWN+21	RT	--	9	--	11	--	7	--	--	--	--	--
			108PWN+64	-	115PWN+50	RL	--	304	--	--	--	--	--	--	609	--	--
			115PWN+50	-	136PWN+71	LT	--	930	--	1,117	--	744	--	--	--	--	--
			137PWN+19	-	140PWN+00	LT	--	61	--	--	--	--	--	--	122	--	--
		LOCAL ROADS															
	1	KARL CAMPUS DRIVE	10CSW+20	-	10CSW+63	RL	--	7	--	--	--	--	--	--	30	--	--
	1	CLOVERNOOK LANE	10CK+27	-	10CK+71	RL	--	12	--	31	--	21	--	--	--	--	--
	1	APPLE TREE ROAD	10AE+08	-	11AE+35	RL	--	56	--	136	--	91	--	--	--	--	--
	1	DAPHNE ROAD	10DE+08	-	11DE+35	RL	--	22	--	54	--	36	--	--	--	--	--
		STAGE 1 SUBTOTAL					--	2,356	--	1,723	--	1,150	--	--	2,041	--	1,855
		MAINLINE															
1020	2	PORT WASHINGTON ROAD	100PWN+20	-	136PWN+71	LT	--	--	167	--	201	--	134	--	--	--	--
1000			99PWN+16	-	100PWN+42	LT	--	1,890	--	2,268	--	1,512	--	--	--	--	--
1000			108PWN+64	-	115PWN+50	RT	--	331	--	--	--	--	--	--	662	--	--
		LOCAL ROADS															
1000	2	KARL CAMPUS DRIVE	10CSW+20	-	10CSW+63	RL	--	6	--	--	--	--	--	--	22	--	--
	2	KARL CAMPUS DRIVE	10CSW+23	-	11CSW+78	RL	--	34	--	82	--	55	--	--	--	--	--
	2	BRENTWOOD LANE	10BE+08	-	10BE+79	RL	--	33	--	79	--	53	--	--	--	--	--
1020	2	BENDER ROAD	13BN+17	-	15BN+47		--	0	73	--	--	0	118	--	--	47	--
		STAGE 2 SUBTOTAL					--	2,293	241	2,429	201	1,620	252	--	684	47	--
		UNDISTRIBUTED					200	--	--	--	--	--	--	5	--	--	--
		TOTALS					**200**	**4,649**	**241**	**4,153**	**201**	**2,770**	**252**	**5**	**2,725**	**47**	**1,855**

2 2 2 2

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1611
September 30, 2022

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 1611	E

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1623
September 30, 2022

COVER PLATES TEMPORARY

STAGE	ROADWAY	STRUCTURE ID	STATION	OFFSET	611.8120.S COVER PLATES TEMPORARY	NOTES
1A						
	PN	204P-S1A	100+60.92	26.50' RT	1	REMOVE IN STAGE 2A
	PN	208P-S1A	102+98.76	26.52' RT	1	REMOVE IN STAGE 2A
	PN	211P-S1A	105+75.46	26.50' RT	1	REMOVE IN STAGE 2A
	PN	213P-S1A	104+27.90	26.50' RT	1	REMOVE IN STAGE 2A
	PN	214P-S1A	108.67.17	26.50' RT	1	REMOVE IN STAGE 2A
	PN	EXIST	100+21.14	49.81' RT	1	REMOVE IN STAGE 2A
	PN	EXIST	111+72.09	5.84' LT	1	REMOVE IN STAGE 2D
STAGE 1A SUBTOTALS		2			7 / 2	
2A						
	PN	EXIST	136+55.97	16.19' RT	1	PERMANENT CONDITION
	PN	EXIST	136+24.68	20.71' LT	1	PERMANENT CONDITION
STAGE 1A SUBTOTALS					2	
PROJECT 1229-04-71 TOTALS					9 / 2	

RECONSTRUCTING/ADJUSTING STRUCTURES

STAGE	LOCATION	STRUCTURE ID	STATION	OFFSET	TEMPORARY TOP OF STRUCTURE ELEVATION	TO	PROPOSED RIM ELEVATION	611.0420 RECONSTRUCTING MANHOLES EACH	611.043 RECONSTRUCTING INLETS EACH	611.8115 ADJUSTING INLET COVERS EACH	611.0610 INLET COVERS TYPE BW EACH	NOTES
1A												
	PN	204P-S1A	--	–	648.01		648.65	–	--	1	–	SEE CD DETAIL B
	PN	208P-S1A	--	–	650.29		650.96	–	--	1	–	SEE CD DETAIL B
	PN	210P-S1A	--	–	650.90		652.10	1	--	–	–	SEE CD DETAIL B
	PN	211P-S1A	--	–	651.66		653.58	–	1	–	–	SEE CD DETAIL B
	PN	213P-S1A	--	–	650.98		652.25	–	1	–	–	SEE CD DETAIL B
	PN	214P-S1A	--	–	653.4		655.1	–	1	--	–	SEE CD DETAIL B
	PN	EXIST	97+03.85	16.92' LT	650.21		650.21	–	1	–	1	SWAP CASTING TO BW
	PN	EXIST	97+08.70	4.14' LT	650.21		650.21	–	1	--	1	SWAP CASTING TO BW
	PN	EXIST	99+57.12	19.73' LT	648.58		648.58	–	1	--	1	SWAP CASTING TO BW
	PN	EXIST	99+57.14	14.19' LT	648.69		648.69	–	1	–	1	SWAP CASTING TO BW
	PN	EXIST	100+49.68	14.58' LT	648.57		648.57	–	1	--	1	SWAP CASTING TO BW
	PN	EXIST	100+49.96	8.14' LT	648.78		648.78	–	1	--	1	SWAP CASTING TO BW
	PN	EXIST	100.21.14	49.81' RT	648.29		649.29	–	--	1	–	SEE CD DETAIL A
	PN	EXIST	100+45.89	15.48' RT	648.57		–	–	1	--	1	SWAP CASTING TO BW
	PN	EXIST	101+85.05	14.74' RT	649.06		–	–	1	--	1	SWAP CASTING TO BW
	PN	EXIST	105+66.28	3.33' RT	651.62		–	–	1	--	1	SWAP CASTING TO BW
	PN	EXIST	108+66.46	2.09' RT	653.33		–	–	1	--	1	SWAP CASTING TO BW
	PN	EXIST	110+56.99	0.13' LT	653.91		–	–	--	1	–	SEE CD DETAIL B
	PN	EXIST	110+67.52	0.14' LT	653.93		–	–	--	1	--	SEE CD DETAIL B
	PN	EXIST	111+72.09	5.84' LT	653.87		654.87	–	--	1	--	SEE CD DETAIL A
STAGE 1A SUBTOTAL		2						1	13	6 / 2	10	
2A												
	PN	EXIST	136+55.97	16.19' RT	685.18		685.18	–	--	1	–	PERMANENT CONDITION
	PN	EXIST	136+24.68	20.71' LT	684.02		684.02	1	--	–	–	PERMANENT CONDITION
STAGE 2A SUBTOTAL								1	0	1 / 2	0	
PROJECT 1229-04-71 TOTALS								2	13	7 / 2	10	

PROJECT NO: 1229-04-71	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET 1623	E

FILE NAME : C:\CADDLIB\PW\HNTB_ALMUELLER\GREATLAKES\D0229151\1229-04-71 - BLANK SHEET.DWG
LAYOUT NAME - _001
PLOT DATE : 3/22/2022 9:29 AM PLOT BY : ALEX MUELLER PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

EMERGENCY RESPONSE TO TRAFFIC INCIDENT INVOLVING CONCRETE BARRIER TEMPORARY PRECAST (1)

CATEGORY	STAGE	LOCATION	SPV.0060.0940 EACH
1000	ALL		1
	TOTAL		1

EMERGENCY RESPONSE TO TRAFFIC INCIDENT INVOLVING CRASH CUSHION (1)

CATEGORY	STAGE	LOCATION	SPV.0060.0945 EACH
1000	ALL		1
	TOTAL		1

EXPOSING EXISTING INFRASTRUCTURE ITEMS

CATEGORY	LOCATION	SPV.0060.0950 EXPOSING EXISTING INFRASTRUCTURE PAVED AREA EACH	SPV.0060.0955 EXPOSING EXISTING INFRASTRUCTURE UNPAVED AREA EACH
1000	UNDISTRIBUTED	2	2
	PROJECT 1229-04-71 TOTAL	2	2

TRAFFIC CONTROL

CATEGORY	STAGE	LOCATION	643.5000 EACH
1000	ALL	PROJECT	0.15
	TOTAL		0.15

CONCRETE BARRIER & CRASH CUSHIONS TEMPORARY

CATEGORY	STAGE	ROADWAY	STA	STA	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	603.8500 ANCHORING CONCRETE BARRIER TEMPORARY PRECAST LF	614.0905 CRASH CUSHIONS TEMPORARY EACH	** BACK WIDTH	** OBJECT MARKING PATTERN	** CRASH TEST LEVEL	** TRAFFIC DIRECTION	** TRAFFIC LOCATION	** CRASH CUSHION SHIELDS
1000	18	PORT WASHINGTON RD	107+72	108+22	50	50	50	--	--	--	--	--	--	--
			107+72		--	--	--	1	2	OM-3R	TL-3	BIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
			108+22		--	--	--	1	2	OM-3L	TL-3	BIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
			108+77	113+58	483	483	483	--	--	--	--	--	--	--
			108+77		--	--	--	1	2	OM-3L	TL-3	BIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
			109+94	112+52	259	259	259	--	--	--	--	--	--	--
			109+94		--	--	--	1	2	OM-3R	TL-3	BIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
			112+52		--	--	--	1	2	OM-3L	TL-3	BIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
			113+58		--	--	--	1	2	OM-3R	TL-3	BIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
	TOTALS				792	792	792	6						

(2)

** FOR INFORMATION ONLY

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1633
September 30, 2022

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

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TEMPORARY MARKING ITEMS

CATEGORY	STAGE	ROADWAY	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH DASHED WHITE 12.5-FT LINE 37.5-FT SKIP WHITE LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH DASHED WHITE 12.5-FT LINE 37.5-FT SKIP LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH DASHED YELLOW LF	649.0805 TEMPORARY MARKING STOP LINE PAINT 18-INCH WHITE LF
1000	1A	PORT WASHINGTON RD	2,410	15	3,228	44
		STAGE 1B SUBTOTAL		5,653		44
	1B	PORT WASHINGTON RD	6,307	49	4,928	100
		STAGE 1B SUBTOTAL		11,284		100
	2A	PORT WASHINGTON RD	8,998	--	4,674	33
		STAGE 2A SUBTOTAL		13,672		33
	2B	PORT WASHINGTON RD	6,102	--	4,160	69
		STAGE 2B SUBTOTAL		10,262		69
	2C	PORT WASHINGTON RD	3,579	--	2,661	--
		STAGE 2C SUBTOTAL		6,240		--
	2D	PORT WASHINGTON RD	3,620	--	2,553	--
		STAGE 2D SUBTOTAL		6,173		--
	2E	PORT WASHINGTON RD	--	--	--	--
		STAGE 2E SUBTOTAL		--		--
	3A	PORT WASHINGTON RD	5,831	--	2,147	44
		STAGE 3A SUBTOTAL		7,978		44
	3B	PORT WASHINGTON RD	1,456	--	1,823	22
		STAGE 3B SUBTOTAL		3,279		22
		TOTAL		64,541		312

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September 30, 2022

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

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PLOT DATE : 9/27/2022 11:43:58 AM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ3 PLOT SCALE : 1:1

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EARTHWORK SUMMARY

STAGE	ROADWAY	STATION TO STATION	205.0100 COMMON EXCAVATION CUT CY	205.0100 COMMON EXCAVATION EBS EXCAVATION CY	* 310.0110 BREAKER RUN TON	SPV.0035.0001 ROADWAY EMBANKMENT CY
PRE-STAGE 1A						
	BROWN DEER ROAD MEDIANS		700	0	0	237
	PRE-STAGE 1A SUBTOTAL		700	0	0	237
STAGE 1A						
	IH 43 TEMORARY PAVEMENT	1084+00 - 1282+50	109,885	0	0	15,238
	RAMP GHC TEMPORARY PAVEMENT	111+72 - 117+27	20,139	0	0	0
	RAMP GHD TEMPORARY PAVEMENT	10+00 - 22+46	4,199	0	0	190
	BROWN DEER ROAD MEDIANS		1,070	0	0	91
	STAGE 1A SUBTOTAL		135,293	0	0	15,519
STAGE 1B						
	IH 43 TEMORARY PAVEMENT	1086+59 - 1183+94	10,040	0	0	11
	GOOD HOPE ROAD MEDIANS		1,258	0	0	0
	PORT WASHINGTON ROAD MEDIANS		483	0	0	0
	STAGE 1B SUBTOTAL		11,781	0	0	11
STAGE 2						
	STAGE 2A/2B/2C IH 43 - GOOD HOPE	1095+90 - 1184+50	98,136	0	0	4,140
	STAGE 2 IH 43 - BROWN DEER	1185+00 - 1282+50	52,823	0	0	10,227
	STAGE 2C IH 43 SOUTH TEMP CONNECTION	12+00 - 17+70	1,456	0	0	28
	STAGE 2C IH 43 CROSSOVER	2190+50 - 2197+67	889	0	0	0
	STAGE 2D IH 43 SOUTH CROSSOVER	10+00 - 19+21	3,111	0	0	195
	STAGE 2D IH 43 NORTH CROSSOVER	1176+15 - 1183+63	448	0	0	78
	STAGE 2A RAMP GHC TEMPORARY PAVEMENT	10+25 - 11+35	85	0	0	54
	STAGE 2A EB GOOD HOPE ROAD	19+50 - 35+71	8,552	0	0	1,948
	STAGE 2A WB GOOD HOPE ROAD	32+00 - 35+34	1,502	0	0	26
	STAGE 2B WB GOOD HOPE ROAD	27+59 - 32+00	2,724	0	0	46
	STAGE 2C RAMP GHD TEMPORARY PAVEMENT	10+95 - 12+39	155	0	0	10
	STAGE 2C WB GOOD HOPE ROAD	19+50 - 26+26	4,896	0	0	342
	STAGE 2D EB GOOD HOPE ROAD	15+16 - 19+50	1,173	0	0	84
	STAGE 2A/2B/2C GOOD HOPE RAMP A	1146+50 - 1166+50	14,371	0	0	3,603
	STAGE 2A/2B/2C GOOD HOPE RAMP B	1128+19 - 1144+25	16,101	0	0	6,992
	STAGE 2 BROWN DEER RAMP A	1250+00 - 1270+75	10,735	0	0	28,760
	STAGE 2 BROWN DEER RAMP A-WN	100+00 - 102+50	534	0	0	58
	STAGE 2 BROWN DEER RAMP B	1237+98 - 1250+83	718	0	0	26,229
	STAGE 2 EB BROWN DEER ROAD - WEST	605+15 - 616+67	7,263	0	0	2,423
	STAGE 2 EB BROWN DEER ROAD - EAST	618+29 - 628+80	12,056	0	0	1,062
	STAGE 2B BRENTWOOD LANE (WEST)	11+27 - 11+29	2	0	0	0
	STAGE 2B FAIRFIELD COURT	10+80 - 15+62	706	0	0	26
	STAGE 2B JEAN NICOLET ROAD	10+58 - 25+50	3,092	0	0	26
	GHB PARKING LOT		196	0	0	0
	STAGE 2 SUBTOTAL		241,724	0	0	86,357

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(CONTINUED ON NEXT PAGE)

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

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PLOT DATE : 9/28/2022 1:14:13 PM PLOT BY : CECELIA TICHELAAR PLOT NAME : PLOT SCALE : 1:1

(CONTINUED FROM PREVIOUS PAGE)

EARTHWORK SUMMARY (COTINUED)

STAGE	ROADWAY	STATION TO STATION	205.0100 COMMON EXCAVATION CUT CY	205.0100 COMMON EXCAVATION EBS EXCAVATION CY	* 310.0110 BREAKER RUN TON	SPV.0035.0001 ROADWAY EMBANKMENT CY
STAGE 3						
	STAGE 3A IH 43 - GOOD HOPE	1078+88 - 1095+90	4,218	0	0	2,295
	STAGE 3B IH 43 - GOOD HOPE	1078+88 - 1154+00	33,309	0	0	2,986
	STAGE 3 IH 43 - BROWN DEER	1185+00 - 1282+50	64,758	0	0	9,805
	STAGE 3 BROWN DEER RAMP C	1232+39 - 1249+73	13,099	0	0	25,087
	STAGE 3 BROWN DEER RAMP C-ES	300+00 - 304+46	2,071	0	0	13,677
	STAGE 3 BROWN DEER RAMP D	1252+87 - 1264+94	7,137	0	0	23,989
	STAGE 3 BROWN DEER RAMP D-SW	400+00 - 405+00	274	0	0	2,176
	STAGE 3 WB BROWN DEER ROAD - WEST	605+15 - 616+67	7,121	0	0	2,292
	STAGE 3 WB BROWN DEER ROAD - EAST	618+29 - 628+80	12,458	0	0	841
	STAGE 3 PHEASANT - SOUTH	101+50 - 103+50	407	0	0	211
	STAGE 3 PHEASANT - NORTH	12+00 - 16+50	844	0	0	31
	STAGE 3 SUBTOTAL		145,696	0	0	83,390
STAGE 4						
	STAGE 4A/4B IH 43	1078+88 - 1185+00	75,159	0	0	7,688
	STAGE 4A/4B RAMP GHC	1126+95 - 1144+50	28,814	0	0	2,686
	STAGE 4A/4B RAMP GHD	1146+50 - 1159+07	12,105	0	0	555
	STAGE 4A JEAN NICOLET ROAD	41+54 - 62+12	12,177	0	0	1,128
	STAGE 4B JEAN NICOLET ROAD	36+56 - 46+00	4,595	0	0	275
	STAGE 4B ACACIA ROAD	10+75 - 11+45	95	0	0	0
	STAGE 4B APPLETREE ROAD (WEST)	11+10 - 11+44	69	0	0	0
	STAGE 4B DAPHNE ROAD (WEST)	10+95 - 11+39	58	0	0	1
	STAGE 4 SUBTOTAL		133,072	0	0	12,333
UNDISTRIBUTED			0	5,000	9,000	0
GRAND TOTAL			**668,266**	**5,000**	**9,000**	**197,847**
		TOTAL COMMON EXC	**673,266**			

NOTES:

(1) ALL EXISTING PAVEMENT SHALL BE REMOVED PER MODIFIED SPEC 205.3.2.5. CUT VOLUME INCLUDES CONCRETE AND ASPHALTIC SURFACE MATERIAL.

(2) EBS EXCAVATION TO BE BACKFILLED WITH BREAKER RUN. ALL EBS MATERIAL IS ASSUMED TO BE WASTED OFFSITE.

(3) ROADWAY EMBANKMENT = UNEXPANDED FILL

(4) ALL EXISTING PAVEMENTS SHALL BE REMOVED PER MODIFIED SPEC 205.3.2.5. EMBANKMENT VOLUME IS BASED ON THE EXISTING SURFACE AND DOES NOT ACCOUNT FOR REMOVAL OF EXISTING CONCRETE AND ASPHALTIC PAVEMENTS.

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

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ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

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PLOT DATE : 9/28/2022 1:14:13 PM PLOT BY : CECELIA TICHELAAR PLOT NAME : PLOT SCALE : 1:1

Addendum No. 02
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Revised Sheet 1700
September 30, 2022

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BASE AND SUBBASE ITEMS

CATEGORY	STAGE	ROADWAY	STATION TO STATION	OFFSET	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	* 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	* 311.0110 BREAKER RUN TON	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
		MAINLINE						
1000	1	IH 43 NB/SB	1087+97 - 1135+25		--	2,190	5,912	--
			1140+89 - 1151+24		--	248	670	--
			1168+74 - 1185+00		--	446	1,204 (2)	--
1000	1	IH 43 SB	1084+00 - 1185+00		--	8,181	22,090	--
			1185+00 - 1282+46		--	9,420	30,021	--
			1185+00 - 1282+46		--	744	--	57
			1210+79 - 1222+06		--	473	1,243	13
			1250+45 - 1252+70		--	189	513	--
		RAMPS						
1000	1	GOOD HOPE RAMP C	1137GHC+76 - 1143GHC+30		--	296	799	--
1000	1	GOOD HOPE RAMP D	1147GHD+00 - 1159GHD+25		--	617	1,666	--
		LOCAL ROADS						
1000	1	GOOD HOPE ROAD	15GHE+00 - 31GHE+56		--	2,607	--	--
1000	1	BROWN DEER ROAD	610BDE+83 - 616BDE+90		--	570	--	--
1000			613BDE+05 - 615BDE+05		--	570	--	--
1000			613BDE+67 - 615BDE+05		--	488	--	--
1000			601BDE+00 - 604BDE+50		--	570	--	--
1000			605BDE+25 - 608BDE+05		--	244	--	--
1000			608BDE+60 - 610BDE+05		--	244	--	--
1000			618BDE+40 - 628BDE+50		--	1,223	--	--
1000			620BDE+00 - 621BDE+25		--	407	--	--
1000			621BDE+30 - 624BDE+70		--	326	--	--
1000	1	PORT WASHINGTON RD	198PNGH+65 - 209PNGH+50		--	966	--	--
		STAGE 1 SUBTOTAL			0	31,019	64,117 (2)	70

BASE AND SUBBASE ITEMS (CONTINUED)

CATEGORY	STAGE	ROADWAY	STATION TO STATION	OFFSET	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	* 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	* 311.0110 BREAKER RUN TON	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
		MAINLINE						
1000	2	IH 43 NB	1095+90 - 1185+03		--	18,364	41,672	--
			1088+53 - 1095+90		--	388	1,048	--
			1185+00 - 1282+50		--	27,405	62,915	--
			1188+68 - 1197+62		--	788	2,127	--
			1240+00 - 1243+50		--	244	659	--
			1258+00 - 1262+00		--	271	733	--
1000	2	IH 43 NB/SB	1097+03 - 1111+42		--	786	2,123	--
		RAMPS						
1000	2	GOOD HOPE RAMP A	1145GHA+99 - 1161GHA+85		--	3,204	6,755	--
			1161GHA+85 - 1174GHA+51		--	1,577	3,426	--
1000	2	GOOD HOPE RAMP B	1119GHB+09 - 1132GHB+55		--	1,626	3,520	--
			1132GHB+55 - 1144GHB+79		--	2,580	5,498	--
1000	2	GOOD HOPE RAMP C	1144GHC+35 - 1145GHC+31		--	393	733	--
			1155GHC+43 - 1159GHC+49		--	51	139	--
1000	2	GOOD HOPE RAMP D	1145GHD+84 - 1146GHD+73		--	304	244	--
1000	2	BROWN DEER RAMP A	1252BDA+66 - 1263BDA+30		--	2,462	8,791	--
			1263BDA+30 - 1270BDA+75		--	1,331	2,938	--
1000	2	BROWN DEER RAMP B	1237BDB+97 - 1240BDB+61		--	480	1,063	--
			1240BDB+61 - 1250BDB+89		--	2,618	5,599	--
1000	2	BROWN DEER RAMP C	1249BDC+35 - 1252BDC+29		--	1,043	2,077	--
		LOCAL ROADS						
1000	2	GOOD HOPE ROAD	15GHE+16 - 26GHE+34		--	4,161	8,568	--
			27GHE+73 - 35GHE+31		--	2,870	6,070	--
			31GHE+62 - 31GHE+93		--	36	--	--
1000	2	BROWN DEER ROAD	605BD+15 - 616BD+54		--	2,794	5,748	--
			613BDE+70 - 616BDE+60		--	895	--	--
			615BDE+50 - 616BDE+75		--	244	--	--
			618BDE+50 - 619BDE+75		--	244	--	--
			618BD+58 - 628BD+98		--	2,418	4,938	--
			620BDE+20 - 621BDE+65		--	407	--	--
			621BDE+00 - 622BDE+00		--	570	--	--
1000	2	PORT WASHINGTON RD	198PNGH+61 - 203PNGH+29		--	577	1,054	--
			204PNGH+25 - 209PNGH+50		--	589	1,172	--
1000	2	JEAN NICOLET ROAD	10JN+20 - 25JN+51		--	4,073	--	--
1000	2	FAIRFIELD COURT	10FA+80 - 16FA+17		--	405	--	--
1000	2	BRENTWOOD LANE	11BW+25 - 11BW+98		--	181	--	--
		STAGE 2 SUBTOTAL				86,380	179,610	0

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ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

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Revised Sheet 1701
September 30, 2022

(CONTINUED FROM PREVIOUS PAGE)

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BASE AND SUBBASE ITEMS (CONTINUED)

CATEGORY	STAGE	ROADWAY	STATION TO STATION	OFFSET	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	* 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	* 311.0110 BREAKER RUN TON	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
		MAINLINE						
1000	3	IH 43 NB/SB	1051+00 - 1077+86		--	3,355	9,060	--
			1173+57 - 1183+63		--	372	1,004	--
1000	3	IH 43 NB	1078+88 - 1154+00		--	5,493	11,204	--
			1078+88 - 1095+90		--	2,920	6,729	--
1000	3	IH 43 SB	1078+88 - 1154+00		--	5,123	10,377	--
			1185+00 - 1282+50		--	25,615	46,108	--
			1238+00 - 1242+00		--	271	733	--
			1260+00 - 1265+00		--	352	952	--
		RAMPS						
1000	3	BROWN DEER RAMP A	1250BDA+50 - 1252BDA+65		--	746	1,469	--
1000	3	BROWN DEER RAMP C	1232BDC+38 - 1238BDC+21		--	999	2,764	--
			1238BDC+21 - 1249BDC+36		--	2,875	7,544	--
1000	3	BROWN DEER RAMP D	1252BDD+38 - 1262BDD+96		--	2,033	202	--
			1262BDD+96 - 1265BDD+00		--	543	624	--
		LOCAL ROADS						
1000	3	BROWN DEER ROAD	605BD+15 - 616BD+89		--	1,833	4,152	--
			618BD+58 - 628BD+75		--	1,694	3,257	--
1000	3	PHEASANT LANE	11PHBD-N+51 - 16PHBD-N+50		62	1,043	--	--
		STAGE 3 SUBTOTAL			62	55,267	106,178	0
		MAINLINE						
1000	4	IH 43 NB	1176+11 - 1185+02		--	237	317	--
			-		--	--	--	--
1000	4	IH 43 SB	1078+88 - 1185+03		--	22,025	50,148	--
		RAMPS						
1000	4	RAMP C	1119GHC+33 - 1132GHC+38		--	1,517	3,467	--
			1132GHC+38 - 1144GHC+35		--	2,727	5,372	--
1000	4	RAMP D	1146GHD+73 - 1156GHD+42		--	1,815	3,465	--
			1156GHD+42 - 1168GHD+23		--	1,350	2,904	--

BASE AND SUBBASE ITEMS (CONTINUED)

CATEGORY	STAGE	ROADWAY	STATION TO STATION	OFFSET	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	* 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	* 311.0110 BREAKER RUN TON	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
		LOCAL ROADS						
1000	4	BROWN DEER ROAD	605BD+15 - 615BD+89		--	154	352	--
			619BD+63 - 630BD+41		--	277	--	--
1000	4	JEAN NICOLET ROAD	25JN+51 - 46JN+00		--	5,279	--	--
			25JN+51 - 62JN+12		--	4,178	--	--
			41JN+70 - 45JN+46		--	359	--	--
1000	4	PHEASANT LANE	101PHBD-S+50 - 104PHBD-S+00		128	816	343	--
1000	4	ACACIA ROAD	10AA+75 - 11AA+83		--	237	--	--
1000	4	APPLE TREE ROAD	11AW+10 - 11AW+83		--	184	--	--
1000	4	DAPHNE ROAD	10DW+95 - 11DW+83		--	233	--	--
		STAGE 4 SUBTOTAL			128	41,389	66,369	0
		UNDISTRIBUTED			19	8,981	19,574	0
		TOTALS			**209**	**223,036**	**435,848**	**70**

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BASE PATCHING CONCRETE

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	390.0303 BASE PATCHING CONCRETE SY
		LOCAL ROADS					
1000	2	PORT WASHINGTON ROAD	200PNGH+03	-	200PNGH+19	RT/LT	43
			207PSGH+43	-	207PSGH+54	RT/LT	38
		STAGE 2 SUBTOTAL					81
		TOTALS					**81**

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 1701	E

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PLOT DATE : 9/29/2022 9:32:14 AM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ2 PLOT SCALE : 1:1

3

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PIPE UNDERDRAIN ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	LOCATION	612.0206 PIPE UNDERDRAIN UNPERFORATED 6-INCH LF	612.0106 PIPE UNDERDRAIN 6-INCH LF	612.0406 PIPE UNDERDRAIN WRAPPED 6-INCH LF	612.0806 APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH EACH	645.0111 GEOTEXTILE TYPE DF SCHEDULE A SY	310.0110 BASE AGGREGATE OPEN-GRADED TON	REMARKS
1000	1	IH 43	1185+00	-	1282+46	LT	OUTSIDE	--	--	9,635	39	--	312	2
			1210+78	-	1222+06	RL	MEDIAN	--	--	1,128	5	--	37	
		STAGE 1 SUBTOTAL						--	--	10,763	44	--	349	
1000	2	IH 43 NB	1095+90	-	1133+01	RT	OUTSIDE	6	3,721	--	--	2,067	121	
			1133+01	-	1161+87	RT	OUTSIDE	6	2,872	--	--	1,596	93	
			1154+00	-	1185+00	LT	MEDIAN	6	3,103	--	--	1,724	101	
			1161+88	-	1185+00	RT	OUTSIDE	6	2,316	--	--	1,287	75	
1000	2	GOOD HOPE RAMP A	1145GHA+93	-	1152GHA+59	RT	OUTSIDE	6	717	--	--	398	23	
			1153GHA+50	-	1161GHA+85	RT	OUTSIDE	6	834	--	--	463	27	
			1155GHA+75	-	1161GHA+85	LT	INSIDE	6	610	--	--	339	20	
		GOOD HOPE RAMP B	1133GHB+02	-	1144GHB+69	RT	OUTSIDE	6	1,242	--	--	690	40	
		GOOD HOPE ROAD	15GHE+16	-	19GHE+69	LT	MEDIAN	6	913	--	--	507	30	
			20GHE+23	-	23GHE+94	RT	OUTSIDE	6	374	--	--	208	12	
			20GHE+55	-	24GHE+18	LT	OUTSIDE	6	358	--	--	199	12	
			25GHE+32	-	26GHE+25	LT	OUTSIDE	6	93	--	--	52	3	
			25GHE+36	-	26GHE+34	RT	OUTSIDE	6	98	--	--	54	3	
			29GHE+27	-	31GHE+35	LT	OUTSIDE	6	283	--	--	157	9	
			29GHE+62	-	32GHE+08	RT	OUTSIDE	6	280	--	--	156	9	
			32GHE+31	-	35GHE+31	LT	OUTSIDE	6	366	--	--	203	12	
			33GHE+03	-	35GHE+31	RT	OUTSIDE	6	308	--	--	171	10	
		STAGE 2 SUBTOTAL						102	18,488	--	--	10,271	602	
1000	3	IH 43 NB	1078+88	-	1154+00	LT	MEDIAN	6	7,512	--	--	4,173	244	
			1086+12	-	1095+90	RT	OUTSIDE	6	4,066	--	--	2,259	132	
		STAGE 3 SUBTOTAL						12	11,578	--	--	6,432	376	

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(CONTINUED ON NEXT PAGE)

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

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PLOT DATE : 9/29/2022 10:15:09 AM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ12 PLOT SCALE : 1:1

(CONTINUED FROM PREVIOUS PAGE)

PIPE UNDERDRAIN ITEMS (CONTINUED)

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	LOCATION	612.0206 PIPE UNDERDRAIN UNPERFORATED 6-INCH LF	612.0106 PIPE UNDERDRAIN 6-INCH LF	612.0406 PIPE UNDERDRAIN WRAPPED 6-INCH LF	612.0806 APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH EACH	645.0111 GEOTEXTILE TYPE DF SCHEDULE A SY	310.0110 BASE AGGREGATE OPEN-GRADED TON	REMARKS
1000	3	IH 43 NB	1078+88	-	1154+00	LT	MEDIAN	6	7,512	--	--	4,173	244	
			1086+12	-	1095+90	RT	OUTSIDE	6	4,066	--	--	2,259	132	
		STAGE 3 SUBTOTAL						12	11,578	--	--	6,432	376	
1000	4	IH 43 SB	1086+92	-	1110+50	LT	OUTSIDE	6	2,347	--	--	1,304	76	
			1126+25	-	1132+35	LT	OUTSIDE	6	611	--	--	339	20	
			1132+36	-	1156+60	LT	OUTSIDE	6	2,434	--	--	1,352	79	
			1156+63	-	1185+00	LT	OUTSIDE	6	2,844	--	--	1,580	92	
		GOOD HOPE RAMP C	1132GHC+37	-	1145GHC+17	LT	OUTSIDE	6	1,336	--	--	742	43	
			1132GHC+37	-	1145GHC+30	RT	INSIDE	6	1,291	--	--	717	42	
		GOOD HOPE RAMP D	1145GHD+85	-	1156GHD+53	RT	INSIDE	6	1,069	--	--	594	35	
			1146GHD+05	-	1156GHD+53	LT	OUTSIDE	6	1,084	--	--	602	35	
		STAGE 4 SUBTOTAL						48	13,016	--	--	7,231	423	
1000		IH 43 NB/SB	1185+00	-	1282+46	RL		--	29,238	--	--	16,243	948	
1000		BROWN DEER RAMP A	102BDA-WN+47	-	105BDA-WN+00	RT		--	253	--	--	141	8	
			1251BDA+10	-	1253BDA+22	LT		--	212	--	--	118	7	
			1257BDA+97	-	1263BDA+32	RT		--	535	--	--	297	17	
1000		BROWN DEER RAMP B	1240BDB+83	-	1249BDB+28	RT		--	845	--	--	469	27	
			1249BDB+28	-	1250BDB+86	LT		--	158	--	--	88	5	
			200BDB-NE+95	-	202BDB-NE+86	RT		--	191	--	--	106	6	
1000		BROWN DEER RAMP C	1238BDC+20	-	1244BDC+68	LT		--	648	--	--	360	21	
			1249BDC+36	-	1250BDC+07	LT		--	71	--	--	39	2	
			1250BDC+29	-	1251BDC+77	RT		--	148	--	--	82	5	
			300BDC-ES+60	-	302BDC-ES+71	RT		--	211	--	--	117	7	
1000		BROWN DEER RAMP D	403BDD-SW+58	-	407BDD-SW+59	LT		--	401	--	--	223	13	
			1252BDD+86	-	1256BDD+25	RT		--	339	--	--	188	11	
			1259BDD+35	-	1262BDD+96	LT		--	361	--	--	201	12	
1000		BROWN DEER ROAD	605BD+15	-	614BD+82	RL		--	3,868	--	--	2,149	125	
			620BD+64	-	628BD+84	RL		--	1,640	--	--	911	53	
			620BD+64	-	624BD+25	RL		--	361	--	--	201	12	
			625BD+46	-	628BD+84	RL		--	338	--	--	188	11	
		BROWN DEER ROAD SEGMENT SUBTOTAL						--	39,818	--	--	22,121	1,290	
		TOTALS						**162**	**82,900**	**10,763**	**44**	**46,056**	3,041	2

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

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Revised Sheet 1802
September 30, 2022

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PLOT DATE : 9/29/2022 10:15:09 AM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ13 PLOT SCALE : 1:1

CONCRETE BARRIER & CRASH CUSHIONS TEMPORARY

CATEGORY	STAGE	ROADWAY	STA	-	STA	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	603.8500 ANCHORING CONCRETE BARRIER TEMPORARY PRECAST LF	614.0905 CRASH CUSHIONS TEMPORARY EACH	** BACK WIDTH	** OBJECT MARKING PATTERN	** CRASH TEST LEVEL	** TRAFFIC DIRECTION	** TRAFFIC LOCATION	** CRASH CUSHION SHIELDS
1000	1A	IH 43 NB	1140+00	-	1150+00	2,000	2,000	2,000	--	--	--	--	--	--	--
			1140+00			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
			1140+00			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
		IH 43 SB	-			1,800	1,800	1,800	--						
			1151+00			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
			1151+00			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
		IH 43	1248+00	-	1256+50	850	850	--	--						
			1256+50			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
		JEAN NICOLET				3,800	3,800	3,800	--	--	--	--	--	--	--
	1B	IH 43 NB	1072+00	-	1150+00	6,762	6,762	6,762	--	--	--	--	--	--	--
			1072+00			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
			1086+68	-	1092+00	533	533	533	--	--	--	--	--	--	--
			1086+68			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
		IH 43 SB	1079+62	-	1185+00	24,051	24,051	24,051	--	--	--	--	--	--	--
			1143+00			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
			1143+00			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
			1157+00			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
			1157+00			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
		IH 43	1244+25	-	1256+75	1,450	2,300	--	--						
			1249+00			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
			1255+00			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
			1256+75			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
		JEAN NICOLET				937	1,734	1,734	--	--	--	--	--	--	--
	2	IH 43	1185+00	-	1242+46	27,200	29,500	28,500	--	--	--	--	--	--	--
			1208+50			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
			1242+20			--	--	--	1	2	OM-3C	TL-3	UNIDIRECTIONAL	BOTH	TEMPORARY CONC BARRIER
			1250+00			--	--	--	1	2	OM-3C	TL-3	UNIDIRECTIONAL	BOTH	TEMPORARY CONC BARRIER
			1261+90			--	--	--	1	2	OM-3C	TL-3	UNIDIRECTIONAL	BOTH	TEMPORARY CONC BARRIER
		BROWN DEER ROAD	613BDE+40	-	628BDE+83	1,200	1,200	--	--						
			614BDE+90			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
	2A	IH 43 NB	1072+00	-	1185+00	4,488	10,488	10,488	--	--	--	--	--	--	--
			1088+00			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
		IH 43 SB	1079+62	-	1185+00	--	2,098	2,098	--	--	--	--	--	--	--
		PORT WASHINGTON RD	-			290	290	290	--						
			199PNGH+32			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
			201PSGH+36			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
	2D	IH 43 NB	-			10,428	12,174	12,174	--	--	--	--	--	--	--
		IH 43 SB	-			--	10,445	10,445	--	--	--	--	--	--	--
	2E	IH 43	1185+00	-	1242+46	--	12,000	--	--	--	--	--	--	--	--
			1245BDB+00			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
	3	IH 43	1185+00	-	1242+46	--	15,000	--	--						
			1264+00			--	--	--	1	2	OM-3C	TL-3	UNIDIRECTIONAL	BOTH	TEMPORARY CONC BARRIER
			1270+00			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
			605BDE+15	-	628BDE+83	--	1,200	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
	3A	IH 43 NB	1059+88	-	1185+00	1,488	1,488	1,488	--	--	--	--	--	--	--
		IH 43 SB	1059+88	-	1185+00	5,423	10,518	10,518	--	--	--	--	--	--	--
			1059+88			--	--	--	1	2	OM-3R	TL-3	BIDIRECTIONAL	BOTH	TEMPORARY CONC BARRIER
	3B	IH 43 NB	1078+50	-	1185+00	3,543	3,543	3,543	--	--	--	--	--	--	--
		IH 43 SB	1076+25	-	1185+00	310	5,886	5,886	--	--	--	--	--	--	--
	4A	IH 43 NB	1060+00	-	1077+00	1,712	1,412	1,412	--	--	--	--	--	--	--
			1060+00			--	--	--	1	2	OM-3L	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY CONC BARRIER
		IH 43 SB	1050+38	-	1185+00	5,607	16,207	16,207	--	--	--	--	--	--	--
		IH 43	-			1,000	1,000	--	--	--	--	--	--	--	--
			1266+50			--	--	--	1	2	OM-3C	TL-3	UNIDIRECTIONAL	BOTH	TEMPORARY CONC BARRIER
			1272+50			--	--	--	1	2	OM-3R	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY CONC BARRIER
		UNDISTRIBUTED				3,070	6,205	2,850	--	--	--	--	--	--	--
		TOTALS				107,942	184,484	146,579	30						

** FOR INFORMATION ONLY

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2

ALL ITEMS CATEGORY 1000
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Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 1833
September 30, 2022

PROJECT NO: 1229-04-73	HWY: IH 43	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 1833	E

STAGE 1B - PORT WASHINGTON ROAD - NORTH

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY)			CUMULATIVE VOL (CY)		
		CUT	FILL	EBS	CUT	FILL	EBS	CUT	FILL	EBS
115+50.084	0.00	49.46	0.00	0.00	0	0	0	0	0	0
115+99.793	49.71	128.59	1.79	0.00	164	2	0	164	2	0
116+50	50.21	55.73	14.91	0.00	171	16	0	335	18	0
117+00	50.00	22.59	203.91	0.00	73	203	0	408	221	0
117+50	50.00	0.00	365.44	0.00	21	527	0	429	748	0
118+00	50.00	0.00	85.26	0.00	0	417	0	429	1,165	0
118+50	50.00	68.47	12.31	0.00	63	90	0	492	1,255	0
119+00	50.00	159.42	4.14	0.00	211	15	0	703	1,270	0
119+50	50.00	169.15	0.00	0.00	304	4	0	1,007	1,274	0
120+00	50.00	50.41	2.41	0.00	203	2	0	1,210	1,276	0
120+03.381	3.38	48.34	3.29	0.00	6	0	0	1,216	1,276	0
120+49.995	46.61	361.16	0.00	0.00	353	3	0	1,569	1,279	0
121+00	50.01	20.64	20.30	0.00	354	19	0	1,923	1,298	0
121+50	50.00	5.22	122.47	0.00	24	132	0	1,947	1,430	0
122+00	50.00	8.23	57.41	0.00	12	167	0	1,959	1,597	0
122+50	50.00	222.50	0.00	0.00	214	53	0	2,173	1,650	0
123+00	50.00	199.32	1.11	0.00	391	1	0	2,564	1,651	0
123+50	50.00	117.06	14.80	0.00	293	15	0	2,857	1,666	0
124+00	50.00	173.45	1.48	0.00	269	15	0	3,126	1,681	0
124+50	50.00	225.26	3.01	0.00	369	4	0	3,495	1,685	0
125+00	50.00	239.70	0.00	0.00	431	3	0	3,926	1,688	0
125+50	50.00	214.42	0.00	0.00	420	0	0	4,346	1,688	0
126+00	50.00	73.66	0.11	0.00	267	0	0	4,613	1,688	0
126+50	50.00	126.00	6.87	0.00	185	6	0	4,798	1,694	0
127+00	50.00	277.01	1.49	0.00	373	8	0	5,171	1,702	0
127+50	50.00	308.11	3.57	0.00	542	5	0	5,713	1,707	0
128+00	50.00	264.91	0.63	0.00	531	4	0	6,244	1,711	0
128+50	50.00	237.84	0.47	0.00	466	1	0	6,710	1,712	0
129+00	50.00	123.90	0.00	0.00	335	0	0	7,045	1,712	0
129+50	50.00	27.90	5.87	0.00	141	5	0	7,186	1,717	0
130+00	50.00	58.98	0.33	0.00	80	6	0	7,266	1,723	0
130+50	50.00	93.64	0.00	0.00	141	0	0	7,407	1,723	0
131+00	50.00	115.62	0.00	0.00	194	0	0	7,601	1,723	0
131+37.453	37.45	133.90	0.00	0.00	173	0	0	7,774	1,723	0
131+50	12.55	122.92	0.00	0.00	60	0	0	7,834	1,723	0
132+00	50.00	340.51	0.00	0.00	429	0	0	8,263	1,723	0
132+50	50.00	494.11	0.00	0.00	773	0	0	9,036	1,723	0
133+00	50.00	544.36	0.00	0.00	962	0	0	9,998	1,723	0
133+50	50.00	454.93	0.00	0.00	925	0	0	10,923	1,723	0
134+00	50.00	337.47	0.16	0.00	734	0	0	11,657	1,723	0
134+50	50.00	394.54	0.00	0.00	678	0	0	12,335	1,723	0
135+00	50.00	344.01	0.00	0.00	684	0	0	13,019	1,723	0
135+50	50.00	217.19	0.00	0.00	520	0	0	13,539	1,723	0
136+00	50.00	116.94	0.00	0.00	309	0	0	13,848	1,723	0
136+50	50.00	96.58	0.02	0.00	198	0	0	14,046	1,723	0
136+70.898	20.90	0.00	0.00	0.00	37	0	0	14,083	1,723	0
				COLUMN TOTALS:	14,083	1,723	0			

2

Addendum No. 02
ID 1229-04-71/72/73/77
Revised Sheet 3068
September 30, 2022

pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\J_Roadway & Drainage\PSE\1229-04-76 - North End Mainline\SheetsPlan\03 Estimate of Quantities_MQ

PLOT DATE : 9/27/2022 4:24:16 PM

PLOT BY : JOHNATHAN D. OLSON

PLOT NAME : 022594_MQ3

PLOT SCALE : 1:1

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0138	204.9060.S Removing (item description) 3306. Loop Detector Wire and Lead-In Cable Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
0140	204.9060.S Removing (item description) 3307. Pull Box Rings and Covers Brown Deer Rd & CTH W	1.000 EACH	_____.____	_____.____
0142	204.9060.S Removing (item description) 3320. Communication Vault	21.000 EACH	_____.____	_____.____
0144	204.9090.S Removing (item description) 0001. Cable Barrier	8,439.000 LF	_____.____	_____.____
0146	204.9090.S Removing (item description) 0002. Modular Block Landscaping Retaining Wall	656.000 LF	_____.____	_____.____
0148	205.0100 Excavation Common	744,040.000 CY	_____.____	_____.____
0150	205.3000.S Temporary Emergency Pullouts	2.000 EACH	_____.____	_____.____
0152	206.1000 Excavation for Structures Bridges (structure) 0003. B-40-732	LS	LUMP SUM	_____.____
0154	206.1000 Excavation for Structures Bridges (structure) 0005. B-40-734	LS	LUMP SUM	_____.____
0156	206.1000 Excavation for Structures Bridges (structure) 0008. B-40-921	LS	LUMP SUM	_____.____
0158	206.1000 Excavation for Structures Bridges (structure) 0009. B-40-1026	LS	LUMP SUM	_____.____
0160	206.1000 Excavation for Structures Bridges (structure) 0010. B-40-1027	LS	LUMP SUM	_____.____
0162	206.1000 Excavation for Structures Bridges (structure) 0011. B-40-1028	LS	LUMP SUM	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0164	206.3000 Excavation for Structures Retaining Walls (structure) 0109. R-40-641	LS	LUMP SUM	_____.____
0166	206.3000 Excavation for Structures Retaining Walls (structure) 0110. R-40-642	LS	LUMP SUM	_____.____
0168	206.3000 Excavation for Structures Retaining Walls (structure) 0116. R-40-649	LS	LUMP SUM	_____.____
0170	209.1100 Backfill Granular Grade 1	65,964.000 CY	_____.____	_____.____
0172	210.1500 Backfill Structure Type A	4,335.000 TON	_____.____	_____.____
0174	210.2500 Backfill Structure Type B	1,154.000 TON	_____.____	_____.____
0176	211.0400 Prepare Foundation for Asphaltic Shoulders	70.000 STA	_____.____	_____.____
0178	213.0100 Finishing Roadway (project) 0001. 1229-04-71	1.000 EACH	_____.____	_____.____
0180	213.0100 Finishing Roadway (project) 0002. 1229-04-72	1.000 EACH	_____.____	_____.____
0182	213.0100 Finishing Roadway (project) 0003. 1229-04-73	1.000 EACH	_____.____	_____.____
0184	213.0100 Finishing Roadway (project) 0004. 1229-04-77	1.000 EACH	_____.____	_____.____
0186	305.0110 Base Aggregate Dense 3/4-Inch	338.000 TON	_____.____	_____.____
0188	305.0120 Base Aggregate Dense 1 1/4-Inch	250,395.000 TON	_____.____	_____.____
0190	310.0110 Base Aggregate Open-Graded	3,041.000 TON	_____.____	_____.____
0192	311.0110 Breaker Run	445,608.000 TON	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0226	455.0605 Tack Coat	26,906.000 GAL	_____.____	_____.____
0228	460.2000 Incentive Density HMA Pavement	39,370.000 DOL	1.00000	39,370.00
0230	460.6223 HMA Pavement 3 MT 58-28 S	46,140.000 TON	_____.____	_____.____
0232	460.6224 HMA Pavement 4 MT 58-28 S	21,885.000 TON	_____.____	_____.____
0234	460.6645 HMA Pavement 5 MT 58-34 V	162.000 TON	_____.____	_____.____
0236	465.0110 Asphaltic Surface Patching	5.000 TON	_____.____	_____.____
0238	465.0120 Asphaltic Surface Driveways and Field Entrances	472.000 TON	_____.____	_____.____
0240	465.0125 Asphaltic Surface Temporary	7,391.000 TON	_____.____	_____.____
0242	465.0310 Asphaltic Curb	1,855.000 LF	_____.____	_____.____
0244	495.1000.S Cold patch	60.000 TON	_____.____	_____.____
0246	501.1000.S Ice Hot Weather Concreting	61,718.000 LB	_____.____	_____.____
0248	502.0100 Concrete Masonry Bridges	920.000 CY	_____.____	_____.____
0250	502.3101 Expansion Device	224.000 LF	_____.____	_____.____
0252	502.3200 Protective Surface Treatment	2,905.000 SY	_____.____	_____.____
0254	502.3205 Pigmented Surface Sealer Reseal	42.000 SY	_____.____	_____.____
0256	502.3210 Pigmented Surface Sealer	4,651.000 SY	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0566	603.3535 Concrete Barrier Transition Type S36 to S42	6.000 EACH	_____._____	_____._____
0568	603.3559 Concrete Barrier Transition Type S42 to S56	54.000 EACH	_____._____	_____._____
0570	603.3613 Concrete Barrier Transition Type V32 to S36	3.000 EACH	_____._____	_____._____
0572	603.8000 Concrete Barrier Temporary Precast Delivered	108,734.000 LF	_____._____	_____._____
0574	603.8125 Concrete Barrier Temporary Precast Installed	185,276.000 LF	_____._____	_____._____
0576	603.8500 Anchoring Concrete Barrier Temporary Precast	147,371.000 LF	_____._____	_____._____
0578	604.0400 Slope Paving Concrete	90.000 SY	_____._____	_____._____
0580	606.0100 Riprap Light	31.000 CY	_____._____	_____._____
0582	606.0200 Riprap Medium	166.000 CY	_____._____	_____._____
0584	606.0300 Riprap Heavy	1,091.000 CY	_____._____	_____._____
0586	608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	174.000 LF	_____._____	_____._____
0588	608.0315 Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	1,950.000 LF	_____._____	_____._____
0590	608.0318 Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	14,034.000 LF	_____._____	_____._____
0592	608.0324 Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	18,759.000 LF	_____._____	_____._____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0686	611.2007 Manholes 7-FT Diameter	30.000 EACH	_____.____	_____.____
0688	611.2008 Manholes 8-FT Diameter	41.000 EACH	_____.____	_____.____
0690	611.3004 Inlets 4-FT Diameter	448.000 EACH	_____.____	_____.____
0692	611.3901 Inlets Median 1 Grate	13.000 EACH	_____.____	_____.____
0694	611.3902 Inlets Median 2 Grate	45.000 EACH	_____.____	_____.____
0696	611.8110 Adjusting Manhole Covers	24.000 EACH	_____.____	_____.____
0698	611.8115 Adjusting Inlet Covers	83.000 EACH	_____.____	_____.____
0700	611.8120.S Cover Plates Temporary	221.000 EACH	_____.____	_____.____
0702	611.9800.S Pipe Grates	1.000 EACH	_____.____	_____.____
0704	612.0106 Pipe Underdrain 6-Inch	83,365.000 LF	_____.____	_____.____
0706	612.0206 Pipe Underdrain Unperforated 6-Inch	1,716.000 LF	_____.____	_____.____
0708	612.0406 Pipe Underdrain Wrapped 6-Inch	21,214.000 LF	_____.____	_____.____
0710	612.0806 Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	44.000 EACH	_____.____	_____.____
0712	614.0150 Anchor Assemblies for Steel Plate Beam Guard	2.000 EACH	_____.____	_____.____
0714	614.0397 Guardrail Mow Strip Emulsified Asphalt	26.000 SY	_____.____	_____.____
0716	614.0800 Crash Cushions Permanent	2.000 EACH	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0718	614.0805 Crash Cushions Permanent Low Maintenance	6.000 EACH	_____.____	_____.____
0720	614.0905 Crash Cushions Temporary	36.000 EACH	_____.____	_____.____
0722	614.0920 Salvaged Rail	9,353.000 LF	_____.____	_____.____
0724	614.0930 Salvaged Crash Cushions	2.000 EACH	_____.____	_____.____
0726	614.2300 MGS Guardrail 3	487.000 LF	_____.____	_____.____
0728	614.2310 MGS Guardrail 3 HS	150.000 LF	_____.____	_____.____
0730	614.2500 MGS Thrie Beam Transition	236.000 LF	_____.____	_____.____
0732	614.2610 MGS Guardrail Terminal EAT	6.000 EACH	_____.____	_____.____
0734	614.2620 MGS Guardrail Terminal Type 2	4.000 EACH	_____.____	_____.____
0736	614.8010 Anchor Post Assembly Top Mount	22.000 EACH	_____.____	_____.____
0738	616.0206 Fence Chain Link 6-FT	22,536.000 LF	_____.____	_____.____
0740	616.0329 Gates Chain Link (width) 0001. 4-FT	2.000 EACH	_____.____	_____.____
0742	616.0329 Gates Chain Link (width) 0002. 8-FT	1.000 EACH	_____.____	_____.____
0744	616.0329 Gates Chain Link (width) 0003. 12-FT	5.000 EACH	_____.____	_____.____
0746	616.0700.S Fence Safety	60,000.000 LF	_____.____	_____.____
0748	618.0100 Maintenance And Repair of Haul Roads (project) 0001. 1229-04-71	1.000 EACH	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0914	646.5020 Marking Arrow Epoxy	185.000 EACH	_____.____	_____.____
0916	646.5120 Marking Word Epoxy	41.000 EACH	_____.____	_____.____
0918	646.5220 Marking Symbol Epoxy	55.000 EACH	_____.____	_____.____
0920	646.6120 Marking Stop Line Epoxy 18-Inch	1,351.000 LF	_____.____	_____.____
0922	646.6464 Cold Weather Marking Epoxy 4-Inch	30,000.000 LF	_____.____	_____.____
0924	646.6468 Cold Weather Marking Epoxy 8-Inch	8,000.000 LF	_____.____	_____.____
0926	646.7120 Marking Diagonal Epoxy 12-Inch	12,783.000 LF	_____.____	_____.____
0928	646.7220 Marking Chevron Epoxy 24-Inch	519.000 LF	_____.____	_____.____
0930	646.7420 Marking Crosswalk Epoxy Transverse Line 6-Inch	4,746.000 LF	_____.____	_____.____
0932	646.8120 Marking Curb Epoxy	990.000 LF	_____.____	_____.____
0934	646.8220 Marking Island Nose Epoxy	44.000 EACH	_____.____	_____.____
0936	646.9000 Marking Removal Line 4-Inch	65,823.000 LF	_____.____	_____.____
0938	646.9010 Marking Removal Line Water Blasting 4-Inch	170,844.000 LF	_____.____	_____.____
0940	646.9110 Marking Removal Line Water Blasting 8-Inch	5,000.000 LF	_____.____	_____.____
0942	646.9200 Marking Removal Line Wide	3,340.000 LF	_____.____	_____.____
0944	649.0105 Temporary Marking Line Paint 4-Inch	378,447.000 LF	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1310	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0004. B-40-733	1.000 EACH	_____._____	_____._____
1312	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0005. B-40-734	1.000 EACH	_____._____	_____._____
1314	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0006. B-40-735	1.000 EACH	_____._____	_____._____
1316	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0007. B-40-24	1.000 EACH	_____._____	_____._____
1318	ASP.1T0A On-the-Job Training Apprentice at $5.00/HR	8,400.000 HRS	5.00000	42,000.00
1320	ASP.1T0G On-the-Job Training Graduate at $5.00/HR	17,280.000 HRS	5.00000	86,400.00
1322	SPV.0035 Special 0001. Roadway Embankment	231,881.000 CY	_____._____	_____._____
1324	SPV.0035 Special 4000. HPC Masonry Structures	658.000 CY	_____._____	_____._____
1326	SPV.0035 Special 4005. Concrete Masonry Soldier Pile Footings	894.000 CY	_____._____	_____._____
1328	SPV.0035 Special 4010. Backfill Controlled Low Strength UPRR	40.840 CY	_____._____	_____._____
1330	SPV.0035 Special 4020. Concrete Masonry Bridges UPRR	966.000 CY	_____._____	_____._____
1332	SPV.0045 Special 1001. Truck Entering Warning System	2,320.000 DAY	_____._____	_____._____
1334	SPV.0045 Special 1002. Combination Work Zone Digital Speed Limit - Speed Feedback Sign Trailer	4,710.000 DAY	_____._____	_____._____

Wisconsin Department of Transportation

Division of Transportation Systems Development
Bureau of Project Development
4822 Madison Yards Way, 4th Floor South
Madison, WI 53705

Telephone: (608) 266-1631
Facsimile (FAX): (608) 266-8459

October 6, 2022

NOTICE TO ALL CONTRACTORS:

Proposal #03:

1229-04-71, WISC 2023001
City Glendale, N Port Washington Rd
Bender Rd to W Daphne Rd
Local Street
Milwaukee County

1229-04-72, WISC 2023002
I-43 North-South Freeway
Union Pacific RR Bridge B-40-921
IH-43
Milwaukee County

1229-04-73, WISC 2023003
I-43 North-South Freeway Bender Rd to Brown Deer Rd
IH-43
Milwaukee County

1229-04-77
C Glendale, Green Bay Road
Intersection with Range Line Rd
STH 57
Milwaukee County

Letting of October 11, 2022

This is Addendum No. 03, which provides for the following:

Special Provisions:

Revised Special Provisions	
Article No.	Description
5	Prosecution and Progress
7	Traffic
312	Excavation, Hauling, and Disposal of Solid Waste Soil, Item SPV.0195.4005

Schedule of Items:

Revised Bid Item Quantities					
Bid Item	Item Description	Unit	Old Quantity	Revised Quantity	Proposal Total
205.0100	Excavation Common	CY	744,040	-11,305	732,735
311.0110	Breaker Run	TON	445,608	11,622	456,470
501.1000.S	Ice Hot Weather Concreting	LB	61,718	-1,080	60,638
504.0500	Concrete Masonry Retaining Walls	CY	5,120	-143	4,977
715.0502	Incentive Strength Concrete Structures	DOL	25,078	-858	24,220
SPV.0035.4005	Concrete Masonry Soldier Pile Footings	CY	894	-83	811
SPV.0195.4005	Excavation, Hauling, and Disposal of Solid Waste Soil	TON	7,560	19,220	26,780

Plan Sheets:

Revised Plan Sheets	
Plan Sheet	Plan Sheet Title (brief description of changes to sheet)
1665	Miscellaneous Quantities – 1229-04-72 Earthwork Table Updated
1701	Miscellaneous Quantities – Updated Breaker Run Quantity
2869	Structures – Revised Typical Wall Excavation Limits Diagram
2881	Structures – Revised notes in Elevation View
2884	Structures – Revised Quantity Table
2917	Structures – Revised Quantity Table
2973	Structures – Revised Typical Wall Excavation Limits Diagram

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

Mike Coleman

Proposal Development Specialist
Proposal Management Section

ADDENDUM NO. 03

1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

October 6, 2022

Special Provisions

5. Prosecution and Progress.

Add the following bullet to "Freeway and Ramp Construction" *under section titled* **Stage 2A Construction**:

- Contractor shall stage the access to the southbound Good Hope entrance ramp. Contractor is allowed a three-day closure of the southbound Good Hope entrance ramp to complete construction of the new southbound entrance ramp and eastbound pavement. Offset the three-day closure with any southbound entrance ramp closures at Brown Deer Rd.

Replace paragraph one under section titled **T. Railroad Construction Coordination** *with the following:*

Notify the railroad 90 days in advance of completing the construction of the offset alignment track. This will allow the railroad to mobilize their crew to complete their work. The railroad will take the track out of service and throw the track to the offset alignment track built by the contractor.

Add the following section:

U. Access to Railroad Right-of-Way

Upon contract execution, the contractor may access UPRR right-of-way to perform all work outside of 25 feet from the centerline of the railroad's active track. The contractor will have access to perform work within 25 feet of the centerline of the railroad's active track, consistent with the railroad coordination and flagging requirements elsewhere in these special provisions, no later than February 1, 2023.

7. Traffic.

Replace last two bullets in **Stage 1A Traffic** "Freeway and Ramps" *with the following:*

- Close SB Brown Deer Loop ramps after installation of temporary signal for the southbound Brown Deer Ramps, maintain full access for the southbound Brown Deer ramps at all times, Short term closures (2 days maximum) on SB to EB and WB to SB Ramp movements are anticipated for connection to temporary pavement. Closures cannot overlap with Good Hope Road ramp closures.

Replace bullets 7 and 8 in **Stage 2A Traffic** "Freeway and Ramps" *with the following:*

- Brown Deer Road interchange ramps (SB to EB, WB to SB, and EB to NB) are closed to traffic.
- Brown Deer Road interchange ramps (NB to EB, NB to WB, WB to NB, SB to WB, and EB to SB) are open to traffic.

Replace bullets 7 and 8 in **Stage 2B Traffic** "Freeway and Ramps" *with the following:*

- Brown Deer Road interchange ramps (SB to EB, WB to SB, and EB to NB) are closed to traffic.
- Brown Deer Road interchange ramps (NB to EB, NB to WB, WB to NB, SB to WB, and EB to SB) are open to traffic.

Replace bullets 7 and 8 in **Stage 2C Traffic** "Freeway and Ramps" *with the following:*

- Brown Deer Road interchange ramps (SB to EB, WB to SB, and EB to NB) are closed to traffic.
- Brown Deer Road interchange ramps (NB to EB, NB to WB, WB to NB, SB to WB, and EB to SB) are open to traffic.

Replace bullets 6 and 7 in **Stage 2D Traffic** "Freeway and Ramps" *with the following:*

- Brown Deer Road interchange ramps (SB to EB, WB to SB, and EB to NB) are closed to traffic.
- Brown Deer Road interchange ramps (NB to EB, NB to WB, WB to NB, SB to WB, and EB to SB) are open to traffic.

Delete bullet ten in **Stage 2D Traffic** "Local Roads".

Replace bullet 8 in **Stage 3A Traffic** "Freeway and Ramps" *with the following:*

- Brown Deer interchange SB ramps are open to traffic on existing ramps, construct temporary traffic signal before opening the ramps to full access.

Replace bullet 6 in **Stage 3B Traffic** "Freeway and Ramps" *with the following:*

- Brown Deer interchange SB ramps are open to traffic on existing ramps.

312. Excavation, Hauling, and Disposal of Solid Waste Soil, Item SPV.0195.4005.

Add the following to paragraph one under section titled **A Description***:*

4. 81UPRR+77 to 125UPRR+27, from approximately UPRR right-of-way limits left to UPRR right-of-way limits right, from approximately 0 to 6+ feet below existing grade.

Schedule of Items
Attached, dated October 6, 2022, are the revised Schedule of Items Pages 6, 7, 9, 10, 45, 46, and 66.

Plan Sheets
The following 8½ x 11-inch sheets are attached and made part of the plans for this proposal:
Revised: 1665, 1701, 2869, 2881, 2884, 2917, 2973

END OF ADDENDUM

EARTHWORK SUMMARY

STAGE	ROADWAY	STATION TO STATION	205.0100 COMMON EXCAVATION (1) CUT CY	205.0100 COMMON EXCAVATION (1) EBS EXCAVATION CY	SPV.0195.4005 EXCAVATION, HAULING, AND DISPOSAL OF SOLID WASTE SOIL TON	* 310.0110 BREAKER RUN TON	SPV.0035.0001 ROADWAY EMBANKMENT CY	209.1100 BACKFILL GRANULAR (GRADE 1) CY
DIVISION 1								
PHASE 1A	PERM EMBANKMENT - UPRR EXIST MAIN	80+00 - 97+95	0	0	14	0	0	41,731
PHASE 1A	PERM EMBANKMENT - UPRR EXIST MAIN	101+10 - 126+00	0	0	8,167	0	0	22,909
PHASE 1C	PERM EMBANKMENT - UPRR EXIST MAIN	80+00 - 97+95	0	0	1,430	0	0	1,324
PHASE 1C	PERM EMBANKMENT - UPRR EXIST MAIN	101+10 - 126+00	0	0	4,104	0	0	0
	DIVISION 1 SUBTOTAL		0	0	13,715	0	0	65,964
DIVISION 2								
PHASE 1A	TEMP EMBANKMENT - NW ACCESS ROAD	10+00 - 23+22	0	0	741	0	19,288	0
PHASE 1A	TEMP EMBANKMENT - NE ACCESS ROAD	9+60 - 31+82	0	0	923	0	4,804	0
	DIVISION 2 SUBTOTAL		0	0	1,664	0	24,092	0
DIVISION 3								
PHASE 1C	TEMP EMBANKMENT - NW ACCESS ROAD	10+00 - 23+22	18,601	0	2,965	0	398	0
PHASE 1C	TEMP EMBANKMENT - NE ACCESS ROAD	9+60 - 31+82	5,491	0	876	0	378	0
	DIVISION 3 SUBTOTAL		24,092	0	3,841	0	776	0
UNDISTRIBUTED			0		0	760	0	0
GRAND TOTAL			**24,092**	**0**	**19,220**	**760**	**24,868**	**65,964**
		TOTAL COMMON EXC	**24,092**					

3

3

NOTES:

(1) EXCAVATION COMMON = CUT + EBS EXCAVATION. ITEM NUMBER 205.0100.

(2) EBS EXCAVATION TO BE BACKFILLED WITH BREAKER RUN. ALL EBS MATERIAL IS ASSUMED TO BE WASTED OFFSITE.

(3) ROADWAY EMBANKMENT = UNEXPANDED FILL

(4) ACCESS ROADS WILL BE CONSTRUCTED AND THEN REMOVED UPON PROJECT COMPLETION.
EARTHWORK QUANTITIES FOR ACCESS ROADS MAY SHOW AS NET ZERO (TOTAL EXCAVATION = TOTAL FILL), BUT ARE ACCOUNTED FOR IN OVERALL PROJECT TOTALS.

Addendum No. 03
ID 1229-04-71/72/73/77
Revised Sheet 1665
October 6, 2022

ALL ITEMS CATEGORY 1010
UNLESS OTHERWISE NOTED

Addendum No. 03
ID 1229-04-71/72/73/77
Revised Sheet 1701
October 6, 2022

(CONTINUED FROM PREVIOUS PAGE)

BASE AND SUBBASE ITEMS (CONTINUED)

CATEGORY	STAGE	ROADWAY	STATION TO STATION	OFFSET	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	* 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	371.2000.S QMP BASE AGGREGATE DENSE 1 1/4-INCH COMPACTION EACH	* 311.0110 BREAKER RUN TON	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
		MAINLINE							
1000	3	IH 43 NB/SB	1051+00 - 1077+86		--	3,355	--	9,060	--
			1173+57 - 1183+63		--	372	--	1,004	--
1000	3	IH 43 NB	1078+88 - 1154+00		--	5,493	--	11,204	--
			1078+88 - 1095+90		--	2,920	--	6,729	--
1000	3	IH 43 SB	1078+88 - 1154+00		--	5,957	--	12,380	--
			1185+00 - 1282+50		--	25,615	--	61,477	--
			1238+00 - 1242+00		--	271	--	733	--
			1260+00 - 1265+00		--	352	--	952	--
		RAMPS							
1000	3	BROWN DEER RAMP A	1250BDA+50 - 1252BDA+65		--	746	--	1,469	--
1000	3	BROWN DEER RAMP C	1232BDC+38 - 1238BDC+21		--	999	--	2,764	--
			1238BDC+21 - 1249BDC+36		--	2,875	--	7,544	--
1000	3	BROWN DEER RAMP D	1252BDD+38 - 1262BDD+96		--	2,033	--	4,695	--
			1262BDD+96 - 1265BDD+00		--	543	--	624	--
		LOCAL ROADS							
1000	3	BROWN DEER ROAD	605BD+15 - 616BD+89		--	1,833	--	4,152	--
			618BD+58 - 628BD+75		--	1,694	--	3,257	--
1000	3	PHEASANT LANE	11PHBD-N+51 - 16PHBD-N+50		62	1,043	--	--	--
		STAGE 3 SUBTOTAL			62	56,101	0	128,043	0
		MAINLINE							
1000	4	IH 43 NB	1176+11 - 1185+02		--	237	--	317	--
			-		--	--	--	--	--
1000	4	IH 43 SB	1078+88 - 1185+03		--	21,190	--	48,145	--
		RAMPS							
1000	4	RAMP C	1119GHC+33 - 1132GHC+38		--	1,517	--	3,467	--
			1132GHC+38 - 1144GHC+35		--	2,727	--	5,372	--
1000	4	RAMP D	1146GHD+73 - 1156GHD+42		--	1,815	--	3,465	--
			1156GHD+42 - 1168GHD+23		--	1,350	--	2,904	--

BASE AND SUBBASE ITEMS (CONTINUED)

CATEGORY	STAGE	ROADWAY	STATION TO STATION	OFFSET	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	* 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	371.2000.S QMP BASE AGGREGATE DENSE 1 1/4-INCH COMPACTION EACH	* 311.0110 BREAKER RUN TON	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
		LOCAL ROADS							
1000	4	BROWN DEER ROAD	605BD+15 - 615BD+89		--	154	--	352	--
			619BD+63 - 630BD+41		--	277	--	--	--
1000	4	JEAN NICOLET ROAD	25JN+51 - 46JN+00		--	5,279	--	--	--
			25JN+51 - 62JN+12		--	4,178	--	--	--
			41JN+70 - 45JN+46		--	359	--	--	--
1000	4	PHEASANT LANE	101PHBD-S+50 - 104PHBD-S+00		128	816	--	343	--
1000	4	ACACIA ROAD	10AA+75 - 11AA+83		--	237	--	--	--
1000	4	APPLE TREE ROAD	11AW+10 - 11AW+83		--	184	--	--	--
1000	4	DAPHNE ROAD	10DW+95 - 11DW+83		--	233	--	--	--
		STAGE 4 SUBTOTAL			128	40,554	0	64,365	0
		UNDISTRIBUTED			19	8,981	0	19,574	0
		TOTALS			**209**	**223,036**	**0**	**455,710**	**70**

BASE PATCHING CONCRETE

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	390.0303 BASE PATCHING CONCRETE SY
		LOCAL ROADS					
1000	2	PORT WASHINGTON ROAD	200PNGH+03	-	200PNGH+19	RT/LT	43
			207PSGH+43	-	207PSGH+54	RT/LT	38
		STAGE 2 SUBTOTAL					81
		TOTALS					**81**

ALL ITEMS CATEGORY 1000
UNLES OTHERWISE NOTED

pw:\\pw-int.hntb.org:PW Great_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\J_Roadway & Drainage\PSE\1229-04-73 South End Good Hope & Brown Deer\SheetsPlan\03 Estimate of Quantities\73_030204_MQ
PLOT DATE : 10/5/2022 3:15:40 PM PLOT BY : CECELIA TICHELAAR PLOT NAME : 022594_MQ2 PLOT SCALE : 1:1

STATE PROJECT NUMBER
1229-04-73

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

ALL STATIONS AND DIMENSIONS ARE ALONG THE FRONT FACE OF WALL, UNLESS SHOWN OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER, UNLESS SHOWN OTHERWISE.

ALL BAR STEEL REINFORCEMENT WITHIN CAST-IN-PLACE CONCRETE IS TO BE EPOXY COATED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL.

THE UTILITY AND STORM SEWER INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AND STORM SEWERS AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF THE STORM SEWER COMPONENTS, INCLUDING INLETS, LATERALS AND STRUCTURES WITH THE CONSTRUCTION OF THE MSE WALL.

PLAN DIMENSIONS, QUANTITIES AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 7½" AND A PANEL EMBEDMENT OF 3". FOR PANEL THICKNESSES OR PANEL EMBEDMENT OTHER THAN THESE VALUES THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-640" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS. THE TOP OF LEVELING PAD IS TAKEN AS A CONSTANT 3'-0" BELOW FINISHED GRADE FOR MEASUREMENT PURPOSES. WALL AREAS CONSTRUCTED OUTSIDE THESE LIMITS WILL NOT BE MEASURED FOR PAYMENT.

THE QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT FOR CAST-IN-PLACE ANCHOR SLAB, COPING AND PARAPET ARE PAID FOR UNDER ITEMS "CONCRETE MASONRY RETAINING WALLS" AND "BAR STEEL REINFORCEMENT HS COATED STRUCTURES", RESPECTIVELY.

APPLY PROTECTIVE SURFACE TREATMENT TO THE EXPOSED TOP SURFACE OF THE ANCHOR SLAB.

APPLY PIGMENTED SURFACE SEALER TO THE TOP AND INSIDE FACES OF THE PARAPET.

THE COST OF FURNISHING AND PLACING THE MSE BACKFILL WITHIN THE REINFORCED SOIL ZONE IS TO BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-640".

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-640".

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN IN THESE PLANS.

DESIGN THE MSE WALL FOR A HORIZONTAL BACKSLOPE BEHIND THE WALL AND A LIVE LOAD VERTICAL SURCHARGE OF 240 PSF.

SOIL REINFORCEMENT MAY BE PLACED UP TO A MAXIMUM OF 15° FROM PERPENDICULAR IF NECESSARY TO AVOID INTERFERENCE WITH ITEMS BEHIND THE WALL. ANGLES GREATER THAN 15° REQUIRE APPROVAL FROM THE BUREAU OF STRUCTURES DESIGN SECTION.

ONLY WALL CONCRETE PANEL MSE WALL SYSTEMS THAT USE STRIP TYPE SOIL REINFORCEMENT THAT ARE HINGED AT THE PANEL CONNECTION CAN BE USED FOR THIS PROJECT.

MSE WALL PANEL SHAPES SHALL BE SQUARE OR RECTANGULAR.

DESIGN SPECIFICATION:
AASHTO LRFD DESIGN SPECIFICATIONS, 9TH EDITION, 2020 WITH INTERIM REVISIONS, UNLESS OTHERWISE NOTED.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST RESULTS.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
501.1000.S	ICE HOT WEATHER CONCRETING	LB	6,520
502.3200	PROTECTIVE SURFACE TREATMENT	SY	198
502.3210	PIGMENTED SURFACE SEALER	SY	956
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	869
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	107,350
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	91
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	140
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	1,575
SPV.0165.4640	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-640	SF	19,450
	NON BID ITEMS		
	NAME PLATE	EACH	1
	CORK FILLER	SIZE	1"
	PREFORMED JOINT FILLER	SIZE	3/4"
	EXPANDED POLYSTYRENE	SIZE	1"

ALL ITEMS ARE CATEGORY 3070

Addendum No. 03
ID 1229-04-71/72/73/77
Revised Sheet 2869
October 6, 2022

LEGEND

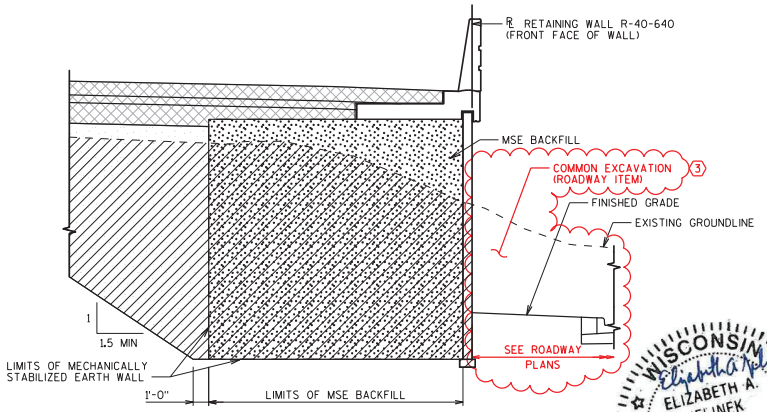
◥ LINEARLY INTERPOLATE WALL ELEVATIONS BETWEEN STATIONS.

WALL EXCAVATION - INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-640".

MSE BACKFILL - INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-640".

EMBANKMENT - NOT A RETAINING WALL ITEM. SEE ROADWAY PLANS.

ROADWAY ITEM - NOT A RETAINING WALL ITEM. SEE ROADWAY PLANS.



TYPICAL WALL EXCAVATION LIMITS DIAGRAM

LOOKING SOUTH

WISCONSIN
ELIZABETH A. JELINEK
E-40123
MILWAUKEE
WI
10/5/2022
PROFESSIONAL ENGINEER

SDR
10/06/22

WALL ELEVATIONS ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
90+03.17	681.86	681.59	686.10
90+25.00	682.02	680.59	684.29
90+50.00	682.18	679.45	683.52
90+75.00	682.33	678.35	682.74
91+00.00	682.48	677.31	682.01
91+25.00	682.61	676.32	681.28
91+50.00	682.73	675.39	680.50
91+53.17	682.74	675.28	681.56
91+71.23	682.83	674.65	681.37
91+75.00	682.84	674.51	680.20
91+83.17	682.87	674.25	681.08
92+00.00	682.94	673.70	679.38
92+25.00	683.03	672.94	679.01
92+50.00	683.11	672.24	678.61
92+51.97	683.12	672.20	678.54
92+75.00	683.17	671.61	677.98
93+00.00	683.22	671.02	677.71
93+25.00	683.25	670.49	677.22
93+50.00	683.28	670.01	676.78
93+75.00	683.29	669.60	676.42
94+00.00	683.30	669.24	676.06
94+25.00	683.29	668.94	675.93
94+50.00	683.27	668.70	675.17
94+75.00	683.24	668.51	675.11
95+00.00	683.20	668.38	674.57
95+25.00	683.15	668.31	674.66
95+50.00	683.09	668.30	674.58
95+75.00	683.02	668.34	674.05
96+00.00	682.94	668.44	674.27
96+25.00	682.84	668.56	674.06
96+50.00	682.74	668.68	673.84
96+63.17	682.68	668.74	674.28
96+70.24	682.64	668.77	675.23
96+75.00	682.62	668.80	674.06
96+93.17	682.53	668.88	675.42
97+00.00	682.50	668.91	673.82
97+25.00	682.38	669.05	674.49
97+50.00	682.25	669.18	666.61
97+75.00	682.11	669.31	675.15
98+00.00	681.96	669.43	675.43
98+25.00	681.80	669.56	675.59
98+50.00	681.62	669.69	675.01
98+75.00	681.44	669.83	675.63
99+00.00	681.24	669.97	675.11
99+03.17	681.21	669.99	676.28

WALL ELEVATIONS ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
99+21.39	681.06	670.10	676.60
99+25.00	681.04	670.12	675.47
99+33.17	680.97	670.17	675.44
99+50.00	680.80	670.25	675.27
99+75.00	680.53	670.38	675.38
100+00.00	680.28	670.50	675.52
100+25.00	680.04	670.62	675.67
100+50.00	679.83	670.75	675.77
100+75.00	679.65	670.87	675.89
101+00.00	679.50	671.01	676.04
101+25.00	679.36	671.19	676.18
101+50.00	679.25	671.40	676.33
101+75.00	679.16	671.63	676.46
102+00.00	679.08	671.91	676.63
102+25.00	678.98	672.21	676.91
102+50.00	678.90	672.54	677.17
102+75.00	678.84	672.91	677.51
102+78.17	678.84	672.96	678.72
102+95.08	678.82	673.22	678.93
103+00.00	678.81	673.29	677.83
103+08.17	678.81	673.42	679.11
103+25.00	678.80	673.67	678.17
103+25.10	678.80	673.67	679.33
103+38.17	678.80	673.87	679.53
103+39.64	678.80	673.89	678.39
103+49.64	678.80	673.67	678.50
103+50.00	678.80	673.68	678.51
103+55.12	678.81	673.75	679.74
103+68.17	678.83	673.95	679.93
103+75.00	678.83	674.06	678.85
104+00.00	678.88	674.44	679.11
104+25.00	678.96	674.82	679.46
104+36.09	678.98	674.99	679.63
104+44.69	678.98	674.93	679.77
104+50.00	678.98	675.01	679.84
104+75.00	678.99	675.39	680.17
105+00.00	679.02	675.77	680.48
105+07.13	679.07	675.88	681.72
105+25.00	679.18	676.15	680.78
105+50.00	679.32	676.53	681.02
105+75.00	679.44	676.91	682.42
105+78.17	679.45	676.95	682.46

NO.	DATE	REVISION	BY
3	10/5/22	EXCAVATION UPDATES	EAJ

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-640

DRAWN BY | FEG/EAJ | PLANS CKD. | HDA

GENERAL NOTES & QUANTITIES

SHEET 5

2869

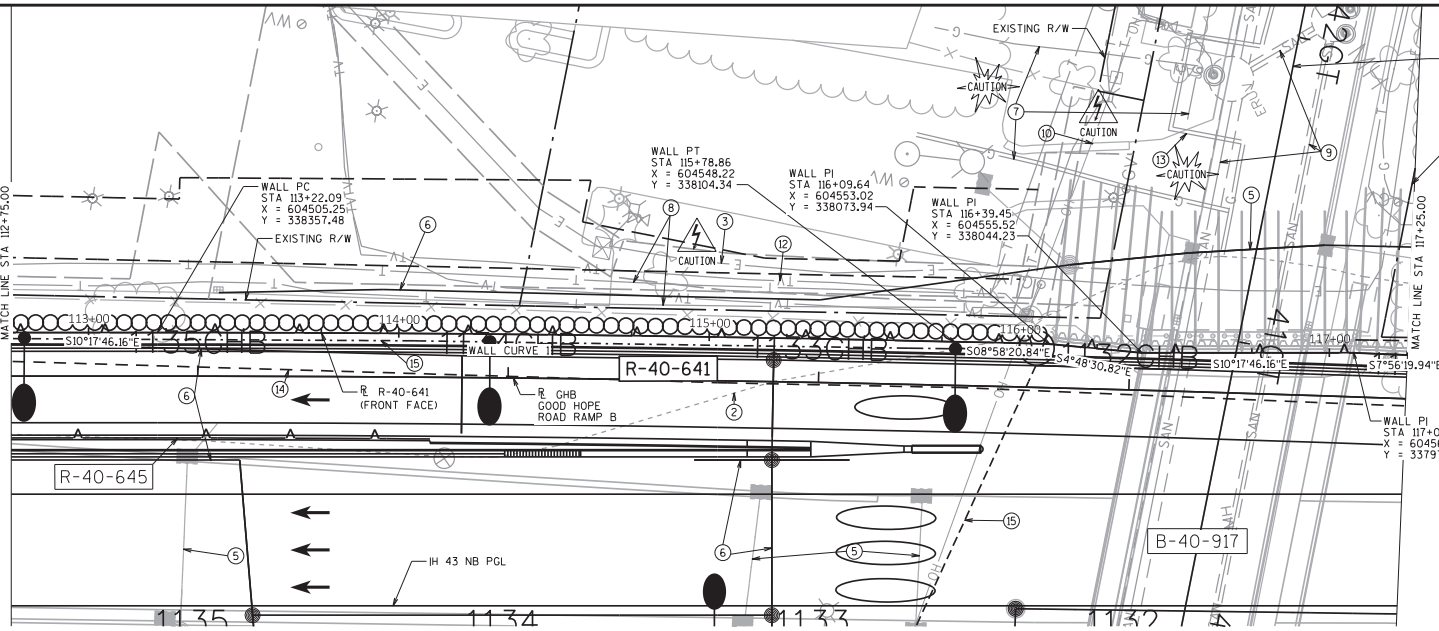
PLOT SCALE : 4:1

8

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STATE PROJECT NUMBER
1229-04-73

Addendum No. 03
ID 1229-04-71/72/73/77
Revised Sheet 2881
October 6, 2022



PLAN

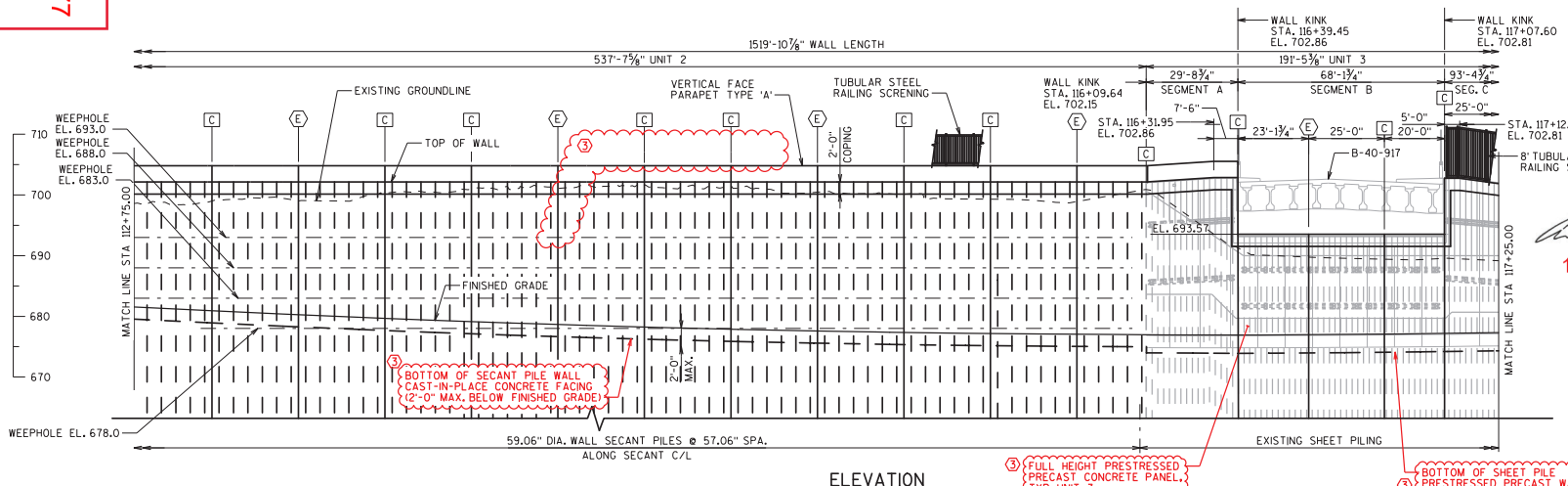
SOLDIER PILE, SECANT PILE, AND SHEET PILE RETAINING WALL

UTILITY & STORM SEWER NOTES

(2) EXISTING WISDOT FTMS (SEE FTMS PLANS)
(3) EXISTING WE ENERGIES ELECTRIC LINE TO REMAIN
(5) EXISTING WISDOT STORM SEWER TO BE RELOCATED
(6) PROPOSED WISDOT STORM SEWER
(7) EXISTING WE ENERGIES GAS LINE TO REMAIN
(8) EXISTING AT&T-WIS TELEPHONE LINE TO BE RELOCATED
(9) EXISTING MMSD SANITARY SEWER TO REMAIN
(10) EXISTING WE ENERGIES OVERHEAD UTILITY LINE TO BE RELOCATED
(12) EXISTING CABLE TV LINE TO REMAIN
(13) EXISTING WE ENERGIES ABANDONED GAS LINE TO REMAIN
(14) PROPOSED WISDOT FTMS
(15) PROPOSED WISDOT LIGHTING

LEGEND

TRAFFIC DIRECTION
[C] WALL FACING CONTRACTION JOINT
(E) WALL FACING EXPANSION JOINT



ELEVATION

LOOKING EAST

WISCONSIN
JAMES W. CATLETT
E-35186
10/05/2022
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

10/05/22

NO.	DATE	REVISION	BY
3	10/5/22	CALL-OUT UPDATES	HDA

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-641

DRAWN BY FEG | PLANS CK'D. JWCIII

GENERAL PLAN & ELEVATION (2 OF 4)

SHEET 2

2881

8 8

STATE PROJECT NUMBER
1229-04-73

GENERAL NOTES

GENERAL

DRAWINGS SHALL NOT BE SCALED.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

ALL STATIONS AND DIMENSIONS ARE ALONG THE FRONT FACE OF WALL, UNLESS SHOWN OTHERWISE.

THESE PLANS ARE FOR A SOLDIER PILE RETAINING WALL (UNITS 1 AND 5), A SECANT PILE RETAINING WALL (UNITS 2 AND 4), AND A PREVIOUSLY CONSTRUCTED SHEET PILE RETAINING WALL WITH NEW FULL HEIGHT PRESTRESSED PRECAST CONCRETE FACING WALL PANELS (UNIT 3).

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER, UNLESS SHOWN OTHERWISE.

ALL BAR STEEL REINFORCEMENT WITHIN CAST-IN-PLACE CONCRETE FACING, ANCHOR SLABS, AND COPING SHALL BE EPOXY COATED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-641".

THE GEOTECHNICAL DATA PROVIDED FOR THIS STRUCTURE IN THE GEOTECHNICAL SITE INVESTIGATION REPORT GOVERNS OVER ANY DISCREPANCY WITH THE SUBSURFACE EXPLORATION AND GEOTECHNICAL DATA SHOWN IN THE PLANS.

THE UTILITY AND STORM SEWER INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AND STORM SEWER AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

NAME PLATE SHALL BE CONSIDERED INCIDENTAL TO BID ITEM "CONCRETE MASONRY RETAINING WALLS". FABRICATE IN ACCORDANCE TO S.D.D. 12 A 3-10.

WALL ANCHOR SLAB AND COPING EXPANSION JOINTS TO MATCH ALL WALL FACING EXPANSION AND CONTRACTION JOINTS.

THE QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT IN CAST-IN-PLACE ANCHOR SLABS, PARAPETS AND FACINGS ARE PAID FOR UNDER ITEMS "CONCRETE MASONRY RETAINING WALL" AND "BAR STEEL REINFORCEMENT HS COATED STRUCTURES" RESPECTIVELY.

UNITS 1& 5

THE QUANTITY OF CAST-IN-PLACE CONCRETE MASONRY FOR THE SOLDIER PILE WALL COPING AND CAST-IN-PLACE CONCRETE FACING IS PAID FOR UNDER ITEM "CONCRETE MASONRY RETAINING WALLS".

SURFACE PREP AND PAINT SOLDIER PILES FROM TOP OF PILE TO 1'-0" BELOW TOP OF FOOTING WITH ONE COAT OF ZINC RICH PRIMER AS SPECIFIED IN SECTION 517 OF THE STANDARD SPECIFICATIONS. WELDED STUD SHEAR CONNECTORS ARE NOT REQUIRED TO BE PAINTED. PAINTING OF PILES IS MEASURED AND PAID FOR AS ITEM "PAINTING EPOXY SYSTEM R-40-641".

FILL TO TOP OF WALL FACING ELEVATION WHERE NEEDED TO PROVIDE WORKING SURFACE. FILL INCIDENTAL TO ITEM "CONCRETE MASONRY SOLDIER PILE FOOTINGS".

THE VOLUME OF EARTHWORK REQUIRED TO INSTALL THE SOLDIER PILES, FOOTINGS AND ANCHOR SLABS IS INCLUDED IN THE ITEM "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-641". AFTER WALL SOLDIER PILE CONSTRUCTION HAS BEEN COMPLETED, ALL EARTHWORK IN FRONT OF THE RETAINING WALL IS PAID FOR UNDER THE ROADWAY ITEM "COMMON EXCAVATION". SEE ROADWAY PLANS FOR EXCAVATION LIMITS.

FLOWABLE BACKFILL AND CLSM ARE INCLUDED IN THE ITEM "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-641". SEE SPECIAL PROVISIONS FOR FLOWABLE BACKFILL AND CLSM REQUIREMENTS.

UNIT 3

REMOVAL, AS REQUIRED, OF TOP PORTION OF EXISTING SHEET PILING IS PAID FOR UNDER "REMOVING STRUCTURE R-40-641".

THE QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT FOR UNIT 3-SEGMENTS A, B & C CAST-IN-PLACE COPING AND WALL PANEL FOOTING, BOTH ABOVE AND UNDER THE PRESTRESSED PRECAST CONCRETE WALL PANELS, IS INCLUDED IN THE ITEM "PRESTRESSED PRECAST CONCRETE WALL PANEL".

DO NOT ALLOW CONCRETE OR FILL TO DROP INTO OR ACCUMULATE IN THE WALL PANEL CAVITY.

UNITS 2 & 4

ALL BAR STEEL REINFORCEMENT WITHIN THE WALL SECANT PILE SHALL NOT BE EPOXY COATED.

FILL TO TOP OF SHAFT ELEVATION WHERE NEEDED TO PROVIDE WORKING SURFACE. FILL INCIDENTAL TO BID ITEM "WALL SECANT PILE 59.06-INCH".

THE VOLUME OF EARTHWORK REQUIRED TO INSTALL THE SECANT PILES AND ANCHOR SLABS IS PAID FOR UNDER THE ITEM "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-641". AFTER WALL SECANT PILE INSTALLATION HAS BEEN COMPLETED, ALL EARTHWORK IN FRONT OF THE RETAINING WALL IS PAID FOR UNDER THE ROADWAY ITEM "COMMON EXCAVATION". SEE ROADWAY PLANS FOR EXCAVATION LIMITS.

COMMON EXCAVATION IN FRONT OF UNITS 2 & 4 MAY NOT BEGIN UNTIL THE WALL SECANT PILE CONCRETE HAS REACHED DESIGN STRENGTH.

THE SECANT PILE TRIAL WALL PANEL 59.06-INCH MUST BE SUCCESSFULLY CONSTRUCTED PRIOR TO BEGINNING CONSTRUCTION OF ANY PRODUCTION DRILLED SHAFTS FOR WALL SECANT PILES. SEE SPECIAL PROVISIONS FOR TRIAL WALL REQUIREMENTS.

TEMPLATES AND GUIDE WALLS ARE REQUIRED FOR INSTALLATION OF ALL WALL SECANT PILES. TEMPLATES AND GUIDE WALLS ARE INCIDENTAL TO ITEM "WALL SECANT PILE 59.06-INCH".

INSTALL WEEPHOLES IN EVERY JOINT BETWEEN SECANT PILES AT THE ELEVATIONS INDICATED IN THESE PLANS. WEEPHOLE INSTALLATION IS INCIDENTAL TO THE ITEM "GEOCOMPOSITE WALL DRAIN".

Addendum No. 03
ID 1229-04-71/72/73/77
Revised Sheet 2884
October 6, 2022

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	UNIT 1	UNIT 2	UNIT 3			UNIT 4	UNIT 5	TOTAL	
					SEG. A	SEG. B	SEG. C				
203.0220.0109	REMOVING STRUCTURE R-40-641	EACH								1	
206.3000.0109	EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-641	LS	-	-	-	-	-	-	-	1	
501.1000.S	ICE HOT WEATHER CONCRETING	LB	1,020	6,030	-	-	-	240	1,795	9,085	③
502.3200	PROTECTIVE SURFACE TREATMENT	SY	95	314	17	38	52			515	
502.3210	PIGMENTED SURFACE SEALER	SY	66	220	-	-	-	-	-	286	
502.4205	ADHESIVE ANCHORS NO. 5 BARS	EACH	-	2,034				126		2,160	
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	135.8	804.2	-	-	-	31.8	239.3	1,212	③
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB		1,522,500				76,910		1,599,410	
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	14,900	61,140	-	-	-	1,850	14,170	92,060	
506.0605	STRUCTURAL STEEL HS	LB	80,518	-	-	-	-	-	262,142	342,660	
506.3010	WELDED STUD SHEAR CONNECTORS 7/8 X 5-INCH	EACH	256	-	-	-	-	-	948	1,204	
513.4091	RAILING TUBULAR SCREENING	LF	162	538	30	-	-	30	-	760	
517.0600.0109	PAINTING EPOXY SYSTEM R-40-641	LS	-	-	-	-	-	-		1	
636.0050.S	FOUNDATION DRILLING 36-INCH	LF	711	-	-	-	-	-	2,808	3,519	
SPV.0035.4005	CONCRETE MASONRY SOLDIER PILE FOOTINGS	CY	130	③ -	-	-	-	-	473	603	③
SPV.0060.4020	CROSSHOLE SONIC LOG (CSL) TESTING WALL SECANT PILE 59.06-INCH	EACH		113				7		120	
SPV.0060.4025	THERMAL INTEGRITY PROFILER (TIP) TESTING WALL SECANT PILE 59.06-INCH	EACH	-	113	-	-	-	7		120	
SPV.0060.4030	TRIAL WALL PANEL SECANT PILE 59.06-INCH	EACH	-	-	-	-	-	-		1	
SPV.0060.4071	BAR COUPLERS NO. 18	EACH	-	1,161	-	-	-	70	-	1,231	
SPV.0075.4000	OBSTRUCTIONS WALL SECANT PILE	HRS	-	57	-	-	-	4		61	
SPV.0075.4001	OBSTRUCTIONS FOUNDATION DRILLING	HRS	12		-	-	-	-	41	53	
SPV.0090.4005	WALL SECANT PILE 59.06-INCH	LF	-	8,486	-	-	-	424	-	8,910	
SPV.0090.4015	FENCE CHAIN LINK POLYMER-COATED 6-FT R-40-641	LF	-	-	-	-	-		599	599	
SPV.0090.4020	RAILING TUBULAR SCREENING 8-FT	LF	-	-	-	-	94	-		94	
SPV.0110.4000	TIMBER LAGGING	MBM	5	-	-	-	-	-	22	27	
SPV.0165.4010	GEOCOMPOSITE WALL DRAIN	SF	-	3,475	-	-	-	230	-	3,705	
SPV.0165.4015	PRESTRESSED PRECAST CONCRETE WALL PANEL R-40-641	SF	-	-	800	750	2,200	-	-	3,750	
SPV.0165.4020	GEOCOMPOSITE DRAIN BOARD	SF	1,539	-	-	-	-	-	6,883	8,422	
	NON-BID ITEMS										
	NAME PLATE	EACH								1	
	PREFORMED JOINT FILLER	SIZE								3/4"	
	CORK FILLER	SIZE								1"	
	NON-BITUMINOUS JOINT SEALER	SIZE								1"	
	EXPANDED POLYSTYRENE	SIZE								1"	

ALL ITEMS ARE CATEGORY 3080

DESIGN DATA

DESIGN SPECIFICATION:
AASHTO LRFD DESIGN SPECIFICATIONS, 9TH EDITION, 2020
WITH INTERIM REVISIONS, UNLESS OTHERWISE NOTED

LIVE LOAD

LIVE LOAD SURCHARGE (ROADWAY)	240 PSF
LIVE LOAD SURCHARGE (NON-ROADWAY)	100 PSF
LIVE LOAD SURCHARGE (CONSTRUCTION)	100 PSF

MATERIAL PROPERTIES

CONCRETE MASONRY	
ANCHOR SLAB & PARAPET	f'c = 4,000 PSI
PRECAST WALL COPING	f'c = 3,500 PSI
CIP WALL FACING	f'c = 3,500 PSI
WALL SECANT PILE CONCRETE	f'c = 4,000 PSI
PRECAST CONCRETE WALL PANELS	f'c = 5,000 PSI
BAR STEEL REINFORCEMENT	Fy = 60,000 PSI
STRUCTURAL STEEL HS	Fy = 50,000 PSI
CONCRETE MASONRY SOLDIER PILE FOOTINGS	f'c = 3,500 PSI
*TIMBER LAGGING, (MIN. REQ'D DIM. 6" NOM.)	fbo = 1,200 PSI
	E = 1,600 KSI

*MATERIAL VALUES BASED ON DOUGLAS FIR-LARCH NO. 1, POSTS & TIMBERS, REFERENCE AASHTO LRFD SPECIFICATION TABLE 8.4.1.1.4-1

FOUNDATION DATA

MINIMUM SOIL BEARING CAPACITY PRESTRESSED PRECAST 3,000 PSF

A.M.B. SDR
10/05/22

WISCONSIN
JAMES W. CZYZEWSKI
E-35135
10/05/2022
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY
③	10/5/22	QUANTITY UPDATES	HDA

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-641

DRAWN BY FEG | PLANS CK'D. JWCIII

QUANTITIES & NOTES

SHEET 5

2884

8

8

STATE PROJECT NUMBER

1229-04-73

GENERAL NOTES

GENERAL

DRAWINGS SHALL NOT BE SCALED.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

ALL STATIONS AND DIMENSIONS ARE ALONG THE FRONT FACE OF WALL, UNLESS SHOWN OTHERWISE.

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL (UNIT 1), A SOLDIER PILE RETAINING WALL (UNITS 2 AND 4), AND A PREVIOUSLY CONSTRUCTED SHEET PILE RETAINING WALL WITH NEW FULL HEIGHT PRESTRESSED PRECAST CONCRETE WALL FACING PANELS (UNIT 3).

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER, UNLESS SHOWN OTHERWISE.

ALL BAR STEEL REINFORCEMENT WITHIN CAST-IN-PLACE CONCRETE FACING AND COPING SHALL BE EPOXY COATED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-642".

THE GEOTECHNICAL DATA PROVIDED FOR THIS STRUCTURE IN THE GEOTECHNICAL SITE INVESTIGATION REPORT GOVERNS OVER ANY DISCREPANCY WITH THE SUBSURFACE EXPLORATION AND GEOTECHNICAL DATA SHOWN IN THE PLANS.

THE UTILITY AND STORM SEWER INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AND STORM SEWER AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

WALL ANCHOR SLAB AND COPING EXPANSION JOINTS TO MATCH ALL WALL FACING EXPANSION AND CONTRACTION JOINTS.

THE QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT IN CAST-IN-PLACE ANCHOR SLABS, PARAPETS AND FACINGS ARE PAID FOR UNDER ITEMS "CONCRETE MASONRY RETAINING WALLS" AND "BAR STEEL REINFORCEMENT HS COATED STRUCTURES" RESPECTIVELY.

UNITS 2 AND 4

THE QUANTITY OF CAST-IN-PLACE CONCRETE MASONRY FOR THE SOLDIER PILE WALL COPING AND CAST-IN-PLACE CONCRETE FACING IS PAID FOR UNDER ITEM "CONCRETE MASONRY RETAINING WALLS".

SURFACE PREP AND PAINT SOLDIER PILES FROM TOP OF PILE TO 1'-0" BELOW TOP OF FOOTING WITH ONE COAT OF ZINC RICH PRIMER AS SPECIFIED IN SECTION 517 OF THE STANDARD SPECIFICATIONS. WELDED STUD SHEAR CONNECTORS ARE NOT REQUIRED TO BE PAINTED. PAINTING OF PILES IS MEASURED AND PAID FOR AS ITEM "PAINTING EPOXY SYSTEM R-40-642".

FILL TO TOP OF WALL FACING ELEVATION WHERE NEEDED TO PROVIDE WORKING SURFACE. FILL INCIDENTAL TO ITEM "CONCRETE MASONRY SOLDIER PILE FOOTINGS".

THE VOLUME OF EARTHWORK REQUIRED TO INSTALL THE SOLDIER PILES, FOOTINGS, AND TIEBACK ANCHORS IS INCLUDED IN THE ITEM "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-642". AFTER WALL SOLDIER PILE CONSTRUCTION HAS BEEN COMPLETED, ALL EARTHWORK IN FRONT OF THE RETAINING WALL IS PAID FOR UNDER THE ROADWAY ITEM "COMMON EXCAVATION". SEE ROADWAY PLANS FOR EXCAVATION LIMITS.

FLOWABLE BACKFILL AND CLSM ARE INCLUDED IN THE ITEM "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-642". SEE SPECIAL PROVISIONS FOR FLOWABLE BACKFILL AND CLSM REQUIREMENTS.

UNIT 1

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-642".

PLANS ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN IN THESE PLANS.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE AS SHOWN FOR UNIT 1 ON THE "TYPICAL SECTIONS" SHEETS.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE OF 240 PSF.

SOIL REINFORCEMENT MAY BE PLACED UP TO A MAXIMUM OF 15° FROM PERPENDICULAR IF NECESSARY TO AVOID INTERFERENCE WITH ITEMS BEHIND THE WALL. ANGLES GREATER THAN 15° REQUIRE APPROVAL FROM THE BUREAU OF STRUCTURES DESIGN SECTION.

ONLY WALL CONCRETE PANEL MSE WALL SYSTEMS THAT USE STRIP TYPE SOIL REINFORCEMENT THAT ARE HINGED AT THE PANEL CONNECTION CAN BE USED FOR THIS PROJECT.

MSE WALL PANEL SHAPES SHALL BE SQUARE OR RECTANGULAR.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

GENERAL NOTES

ALL BAR STEEL REINFORCEMENT WITHIN CAST-IN-PLACE CONCRETE IS TO BE EPOXY COATED.

PLAN DIMENSIONS, QUANTITIES, AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 7½" AND A PANEL EMBEDMENT OF 3". FOR PANEL THICKNESSES OR PANEL EMBEDMENT OTHER THAN THESE VALUES, THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

THE PLAN QUANTITY FOR THE ITEM 'WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-642" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS. THE TOP OF LEVELING PAD IS TAKEN AS A CONSTANT 3'-0" BELOW FINISHED GRADE FOR MEASUREMENT PURPOSES. WALL AREAS CONSTRUCTED OUTSIDE THESE LIMITS WILL NOT BE MEASURED FOR PAYMENT.

THE COST OF FURNISHING AND PLACING THE MSE BACKFILL WITHIN THE REINFORCED SOIL ZONE IS TO BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-642".

UNIT 3

REMOVAL, AS REQUIRED, OF TOP PORTION OF EXISTING SHEET PILING IS PAID FOR UNDER "REMOVING STRUCTURE R-40-642".

THE QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT FOR UNIT 3-SEGMENTS A, B, & C CAST-IN-PLACE COPING AND WALL PANEL FOOTING, BOTH ABOVE AND UNDER THE PRESTRESSED PRECAST CONCRETE WALL PANELS, IS INCLUDED IN THE ITEM "PRESTRESSED PRECAST CONCRETE WALL PANEL".

DO NOT ALLOW CONCRETE OR FILL TO DROP INTO OR ACCUMULATE IN THE WALL PANEL CAVITY.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	UNIT 1	UNIT 2		UNIT 3			UNIT 4	TOTAL
				SEG. A	SEG. B	SEG. A	SEG. B	SEG. C		
203.0220.0110	REMOVING STRUCTURE R-40-642	EACH								1
206.3000.0110	EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-642	LS				③				1 ③
501.1000.S	ICE HOT WEATHER CONCRETING	LB	655	610	860	-	-	-	280	2,405
502.3200	PROTECTIVE SURFACE TREATMENT	SY	13	6		51	32	18		120
502.3210	PIGMENTED SURFACE SEALER	SY	82	37						119
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	87.3	81.0	114.8	-	-	-	37.3	321 ③
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	11,230	9,650	10,740	③			3,070	34,690
506.0605	STRUCTURAL STEEL HS	LB		61,620	44,730				22,810	129,160
506.3010	WELDED STUD SHEAR CONNECTORS 7/8 X 5-INCH	EACH		169	344				103	616
511.1200.0110	TEMPORARY SHORING R-40-642	SF	800							800
513.2001	RAILING PIPE	LF						32	60	92
513.4091	RAILING TUBULAR SCREENING	LF	200	90						290
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	12	3						15
517.0600.0110	PAINTING EPOXY SYSTEM R-40-642	LS								1
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	10							10
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	200							200
636.0050.S	FOUNDATION DRILLING 36-INCH	LF		552	674				359	1,585
SPV.0035.4005	CONCRETE MASONRY SOLDIER PILE FOOTINGS	CY		92	80				36	208
SPV.0060.4050	TIEBACK ANCHORS	EACH			18				3	21
SPV.0060.4051	TIEBACK ANCHORS PERFORMANCE TESTS	EACH			3				1	4
SPV.0060.4052	TIEBACK ANCHORS EXTENDED CREEP TESTS	EACH			1				1	2
SPV.0075.4001	OBSTRUCTIONS FOUNDATION DRILLING	HRS		6	9				4	19
SPV.0090.4020	RAILING TUBULAR SCREENING 8-FEET	LF			135	92				227
SPV.0110.4000	TIMBER LAGGING	MBM			4	8			3	15
SPV.0165.4016	PRESTRESSED PRECAST CONCRETE WALL PANEL	SF				2,400	1,250	900		4,550
SPV.0165.4020	GEOCOMPOSITE DRAIN BOARD	SF		1,215	2,700				840	4,755
SPV.0165.4642	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-642	SF	1,800							1,800
	NON BID ITEMS									
	NAME PLATE	EACH								1
	PREFORMED JOINT FILLER	SIZE								3/4"
	NON-BITUMINOUS JOINT SEALER	SIZE								1"
	EXPANDED POLYSTYRENE	SIZE								1"
	CORK FILLER	SIZE								1"

ALL ITEMS ARE CATEGORY 3090

Addendum No. 03
ID 1229-04-71/72/73/77
Revised Sheet 2917
October 6, 2022

SDR
10/05/22

WISCONSIN
JAMES W. CAMPBELL
E-38185
10/05/2022
MILWAUKEE, WIS.
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY
③	10/5/22	QUANTITY UPDATES	HDA

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-642

DRAWN BY FEG | PLANS CK'D. JWCIII

GENERAL NOTES & QUANTITIES

SHEET 3

2917

8

8

STATE PROJECT NUMBER
1229-04-73

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

ALL STATIONS AND DIMENSIONS ARE ALONG THE FRONT FACE OF WALL, UNLESS SHOWN OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER, UNLESS SHOWN OTHERWISE.

ALL BAR STEEL REINFORCEMENT WITHIN CAST-IN-PLACE CONCRETE IS TO BE EPOXY COATED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL.

THE UTILITY AND STORM SEWER INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AND STORM SEWER AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

PLAN DIMENSIONS, QUANTITIES AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 7½" AND A PANEL EMBEDMENT OF 3". FOR PANEL THICKNESSES OR PANEL EMBEDMENT OTHER THAN THESE VALUES THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-648" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS. FROM STA. 199+98.60 TO STA. 201+78.60 AND STA. 203+58.60 TO STA. 204+38.60 THE TOP OF LEVELING PAD IS TAKEN AS A CONSTANT 1'-6" BELOW FINISHED GRADE FOR MEASUREMENT PURPOSES. FROM STA. 201+78.60 TO STA. 203+58.68, THE TOP OF LEVELING PAD IS TAKEN AS A CONSTANT 3'-0" BELOW FINISHED GRADE FOR MEASUREMENT PURPOSES. WALL AREAS CONSTRUCTED OUTSIDE THESE LIMITS WILL NOT BE MEASURED FOR PAYMENT.

THE QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT FOR CAST-IN-PLACE ANCHOR SLAB, COPING AND PARAPET ARE PAID FOR UNDER ITEMS "CONCRETE MASONRY RETAINING WALLS" AND "BAR STEEL REINFORCEMENT HS COATED STRUCTURES", RESPECTIVELY.

APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP EXPOSED SURFACE OF THE ANCHOR SLAB.

APPLY PIGMENTED SURFACE SEALER TO THE TOP AND INSIDE FACES OF THE PARAPET.

THE COST OF FURNISHING AND PLACING THE MSE BACKFILL WITHIN THE REINFORCED SOIL ZONE IS TO BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-648".

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALL IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-648".

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN IN THESE PLANS.

DESIGN THE MSE WALL FOR A HORIZONTAL BACKSLOPE BEHIND THE WALL AND A LIVE LOAD VERTICAL SURCHARGE OF 240 PSF.

SOIL REINFORCEMENT MAY BE PLACED UP TO A MAXIMUM OF 15° FROM PERPENDICULAR IF NECESSARY TO AVOID INTERFERENCE WITH ITEMS BEHIND THE WALL. ANGLES GREATER THAN 15° REQUIRE APPROVAL FROM THE BUREAU OF STRUCTURES DESIGN SECTION.

ONLY WALL CONCRETE PANEL MSE WALL SYSTEMS THAT USE STRIP TYPE SOIL REINFORCEMENT THAT ARE HINGED AT THE PANEL CONNECTION CAN BE USED FOR THIS PROJECT.

WALL ON CURVED ALIGNMENT LIMITS PANEL WIDTH TO 5'-0".

MSE WALL PANEL SHAPES SHALL BE SQUARE.

DESIGN SPECIFICATION:
AASHTO LRFD DESIGN SPECIFICATIONS, 9TH EDITION, 2020 WITH INTERIM REVISIONS, UNLESS OTHERWISE NOTED.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST RESULTS.

TOTAL ESTIMATED QUANTITIES

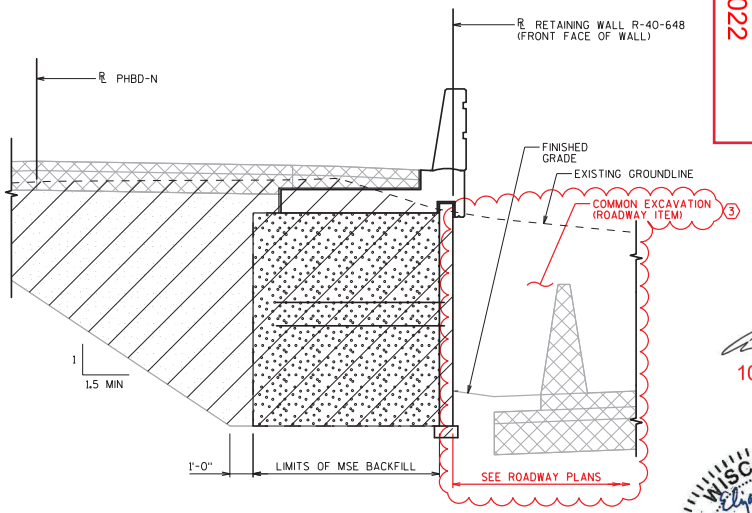
ITEM NO.	BID ITEMS	UNIT	TOTAL
501.1000.S	ICE HOT WEATHER CONCRETING	LB	1,620
502.3200	PROTECTIVE SURFACE TREATMENT	SY	25
502.3210	PIGMENTED SURFACE SEALER	SY	217
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	216
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	25,400
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	28
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	130
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	440
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2
SPV.0165.4648	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-648	SF	3,767
	NON BID ITEMS		
	NAME PLATE	EACH	1
	CORK FILLER	SIZE	1"
	NON-BITUMINOUS JOINT SEALER	SIZE	1"
	EXPANDED POLYSTYRENE	SIZE	1"

ALL ITEMS ARE CATEGORY 3140

Addendum No. 03
ID 1229-04-71/72/73/77
Revised Sheet 2973
October 6, 2022

WALL ELEVATIONS

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
199+98.60	687.14	686.12	686.41
200+00.00	687.16	686.11	686.41
200+25.00	687.51	685.74	686.70
200+50.00	687.83	685.30	687.00
200+75.00	688.15	684.53	687.26
201+00.00	688.45	683.58	687.76
201+25.00	688.67	682.60	688.16
201+50.00	688.81	681.57	688.02
201+75.00	688.94	680.47	688.25
201+78.60	688.95	680.33	688.21
202+00.00	688.97	679.50	688.04
202+25.00	688.88	678.83	688.16
202+48.56	688.70	678.81	687.38
202+50.00	688.69	678.81	687.20
202+75.00	688.40	678.79	687.00
203+00.00	687.92	678.66	687.25
203+25.00	687.38	678.49	686.27
203+50.00	686.84	678.91	685.55
203+55.27	686.73	679.08	685.46
203+58.60	686.66	679.18	685.42
203+75.00	686.31	679.71	684.79
204+00.00	685.86	681.43	684.52
204+25.00	685.49	683.24	684.31
204+38.60	685.30	683.66	684.19



TYPICAL WALL EXCAVATION LIMITS DIAGRAM
LOOKING NORTH

SDR
10/06/22

LEGEND

- LINEARLY INTERPOLATE WALL ELEVATIONS BETWEEN STATIONS.
- WALL EXCAVATION - INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-648".
- MSE BACKFILL - INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-648".
- ROADWAY ITEM - NOT A RETAINING WALL ITEM. SEE ROADWAY PLANS.
- EMBANKMENT - NOT A RETAINING WALL ITEM. SEE ROADWAY PLANS.

WISCONSIN PROFESSIONAL ENGINEER
ELIZABETH A. JELINEK
E-40123
MILWAUKEE
WI
10/5/2022

NO.	DATE	REVISION	BY
3	10/5/22	EXCAVATION UPDATES	EAJ

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-648

DRAWN BY JTE | PLANS CK'D. FEG

GENERAL NOTES & QUANTITIES

SHEET 2

2973

PLOT SCALE = 4:1

8

8

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0138	204.9060.S Removing (item description) 3306. Loop Detector Wire and Lead-In Cable Brown Deer Rd & CTH W	1.000 EACH	_____._____	_____._____
0140	204.9060.S Removing (item description) 3307. Pull Box Rings and Covers Brown Deer Rd & CTH W	1.000 EACH	_____._____	_____._____
0142	204.9060.S Removing (item description) 3320. Communication Vault	21.000 EACH	_____._____	_____._____
0144	204.9090.S Removing (item description) 0001. Cable Barrier	8,439.000 LF	_____._____	_____._____
0146	204.9090.S Removing (item description) 0002. Modular Block Landscaping Retaining Wall	656.000 LF	_____._____	_____._____
0148	205.0100 Excavation Common	732,735.000 CY	_____._____	_____._____
0150	205.3000.S Temporary Emergency Pullouts	2.000 EACH	_____._____	_____._____
0152	206.1000 Excavation for Structures Bridges (structure) 0003. B-40-732	LS	LUMP SUM	_____._____
0154	206.1000 Excavation for Structures Bridges (structure) 0005. B-40-734	LS	LUMP SUM	_____._____
0156	206.1000 Excavation for Structures Bridges (structure) 0008. B-40-921	LS	LUMP SUM	_____._____
0158	206.1000 Excavation for Structures Bridges (structure) 0009. B-40-1026	LS	LUMP SUM	_____._____
0160	206.1000 Excavation for Structures Bridges (structure) 0010. B-40-1027	LS	LUMP SUM	_____._____
0162	206.1000 Excavation for Structures Bridges (structure) 0011. B-40-1028	LS	LUMP SUM	_____._____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0164	206.3000 Excavation for Structures Retaining Walls (structure) 0109. R-40-641	LS	LUMP SUM	_____.____
0166	206.3000 Excavation for Structures Retaining Walls (structure) 0110. R-40-642	LS	LUMP SUM	_____.____
0168	206.3000 Excavation for Structures Retaining Walls (structure) 0116. R-40-649	LS	LUMP SUM	_____.____
0170	209.1100 Backfill Granular Grade 1	65,964.000 CY	_____.____	_____.____
0172	210.1500 Backfill Structure Type A	4,335.000 TON	_____.____	_____.____
0174	210.2500 Backfill Structure Type B	1,154.000 TON	_____.____	_____.____
0176	211.0400 Prepare Foundation for Asphaltic Shoulders	70.000 STA	_____.____	_____.____
0178	213.0100 Finishing Roadway (project) 0001. 1229-04-71	1.000 EACH	_____.____	_____.____
0180	213.0100 Finishing Roadway (project) 0002. 1229-04-72	1.000 EACH	_____.____	_____.____
0182	213.0100 Finishing Roadway (project) 0003. 1229-04-73	1.000 EACH	_____.____	_____.____
0184	213.0100 Finishing Roadway (project) 0004. 1229-04-77	1.000 EACH	_____.____	_____.____
0186	305.0110 Base Aggregate Dense 3/4-Inch	338.000 TON	_____.____	_____.____
0188	305.0120 Base Aggregate Dense 1 1/4-Inch	250,395.000 TON	_____.____	_____.____
0190	310.0110 Base Aggregate Open-Graded	3,041.000 TON	_____.____	_____.____
0192	311.0110 Breaker Run	456,470.000 TON	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0226	455.0605 Tack Coat	26,906.000 GAL	_____.____	_____.____
0228	460.2000 Incentive Density HMA Pavement	39,370.000 DOL	1.00000	39,370.00
0230	460.6223 HMA Pavement 3 MT 58-28 S	46,140.000 TON	_____.____	_____.____
0232	460.6224 HMA Pavement 4 MT 58-28 S	21,885.000 TON	_____.____	_____.____
0234	460.6645 HMA Pavement 5 MT 58-34 V	162.000 TON	_____.____	_____.____
0236	465.0110 Asphaltic Surface Patching	5.000 TON	_____.____	_____.____
0238	465.0120 Asphaltic Surface Driveways and Field Entrances	472.000 TON	_____.____	_____.____
0240	465.0125 Asphaltic Surface Temporary	7,391.000 TON	_____.____	_____.____
0242	465.0310 Asphaltic Curb	1,855.000 LF	_____.____	_____.____
0244	495.1000.S Cold patch	60.000 TON	_____.____	_____.____
0246	501.1000.S Ice Hot Weather Concreting	60,638.000 LB	_____.____	_____.____
0248	502.0100 Concrete Masonry Bridges	920.000 CY	_____.____	_____.____
0250	502.3101 Expansion Device	224.000 LF	_____.____	_____.____
0252	502.3200 Protective Surface Treatment	2,905.000 SY	_____.____	_____.____
0254	502.3205 Pigmented Surface Sealer Reseal	42.000 SY	_____.____	_____.____
0256	502.3210 Pigmented Surface Sealer	4,651.000 SY	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0258	502.3215 Protective Surface Treatment Reseal	1,684.000 SY	_____.____	_____.____
0260	502.4205 Adhesive Anchors No. 5 Bar	3,051.000 EACH	_____.____	_____.____
0262	502.4206 Adhesive Anchors No. 6 Bar	296.000 EACH	_____.____	_____.____
0264	502.4208 Adhesive Anchors No. 8 Bar	16.000 EACH	_____.____	_____.____
0266	503.0137 Prestressed Girder Type I 36W-Inch	966.000 LF	_____.____	_____.____
0268	504.0100 Concrete Masonry Culverts	602.000 CY	_____.____	_____.____
0270	504.0500 Concrete Masonry Retaining Walls	4,977.000 CY	_____.____	_____.____
0272	505.0400 Bar Steel Reinforcement HS Structures	2,087,660.000 LB	_____.____	_____.____
0274	505.0600 Bar Steel Reinforcement HS Coated Structures	978,040.000 LB	_____.____	_____.____
0276	505.0800.S Bar Steel Reinforcement HS Stainless Structures	4,140.000 LB	_____.____	_____.____
0278	505.0905 Bar Couplers No. 5	524.000 EACH	_____.____	_____.____
0280	505.0906 Bar Couplers No. 6	40.000 EACH	_____.____	_____.____
0282	505.0911 Bar Couplers No. 11	168.000 EACH	_____.____	_____.____
0284	506.0105 Structural Steel Carbon	20,274.000 LB	_____.____	_____.____
0286	506.0605 Structural Steel HS	1,820,655.000 LB	_____.____	_____.____
0288	506.2605 Bearing Pads Elastomeric Non-Laminated	40.000 EACH	_____.____	_____.____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1280	678.0400 Fiber Optic Termination	54.000 EACH	_____._____	_____._____
1282	678.0500 Communication System Testing	LS	LUMP SUM	_____._____
1284	678.0500 Communication System Testing 3201. Port Washington Rd	LS	LUMP SUM	_____._____
1286	678.0500 Communication System Testing 3301. 1229-04-73 Traffic Signals	LS	LUMP SUM	_____._____
1288	678.0600 Install Ethernet Switches	17.000 EACH	_____._____	_____._____
1290	690.0150 Sawing Asphalt	7,598.000 LF	_____._____	_____._____
1292	690.0250 Sawing Concrete	66,796.000 LF	_____._____	_____._____
1294	715.0502 Incentive Strength Concrete Structures	24,220.000 DOL	1.00000	24,220.00
1296	715.0603 Incentive Strength Concrete Barrier	34,630.000 DOL	1.00000	34,630.00
1298	715.0715 Incentive Flexural Strength Concrete Pavement	119,813.000 DOL	1.00000	119,813.00
1300	740.0440 Incentive IRI Ride	61,634.000 DOL	1.00000	61,634.00
1302	801.0117 Railroad Flagging Reimbursement	297,000.000 DOL	1.00000	297,000.00
1304	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0001. B-40-577	1.000 EACH	_____._____	_____._____
1306	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0002. B-40-578	1.000 EACH	_____._____	_____._____
1308	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0003. B-40-732	1.000 EACH	_____._____	_____._____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1310	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0004. B-40-733	1.000 EACH	_____._____	_____._____
1312	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0005. B-40-734	1.000 EACH	_____._____	_____._____
1314	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0006. B-40-735	1.000 EACH	_____._____	_____._____
1316	999.2000.S Installing and Maintaining Bird Deterrent System (station) 0007. B-40-24	1.000 EACH	_____._____	_____._____
1318	ASP.1T0A On-the-Job Training Apprentice at $5.00/HR	8,400.000 HRS	5.00000	42,000.00
1320	ASP.1T0G On-the-Job Training Graduate at $5.00/HR	17,280.000 HRS	5.00000	86,400.00
1322	SPV.0035 Special 0001. Roadway Embankment	231,881.000 CY	_____._____	_____._____
1324	SPV.0035 Special 4000. HPC Masonry Structures	658.000 CY	_____._____	_____._____
1326	SPV.0035 Special 4005. Concrete Masonry Soldier Pile Footings	811.000 CY	_____._____	_____._____
1328	SPV.0035 Special 4010. Backfill Controlled Low Strength UPRR	40.840 CY	_____._____	_____._____
1330	SPV.0035 Special 4020. Concrete Masonry Bridges UPRR	966.000 CY	_____._____	_____._____
1332	SPV.0045 Special 1001. Truck Entering Warning System	2,320.000 DAY	_____._____	_____._____
1334	SPV.0045 Special 1002. Combination Work Zone Digital Speed Limit - Speed Feedback Sign Trailer	4,710.000 DAY	_____._____	_____._____

Proposal ID: 20221011003 Project(s): 1229-04-71, 1229-04-72, 1229-04-73, 1229-04-77

Federal ID(s): WISC 2023003, WISC 2023001, WISC 2023002, N/A

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
1832	SPV.0195 Special 4005. Excavation, Hauling, and Disposal Of Solid Waste Soil	26,780.000 TON	_____._____	_____._____
1834	SPV.0195 Special 4010. Course Aggregate Mix for Stream Bed	1,297.000 TON	_____._____	_____._____
1836	SPV.0200 Special 5000. Reconstruct MMSD Sanitary Manhole	40.000 VF	_____._____	_____._____
1838	205.0501.S Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	3.400 TON	_____._____	_____._____
1840	646.3555 Marking Line Grooved Contrast Permanent Tape 8-Inch	14,351.000 LF	_____._____	_____._____
1842	SPV.0060 Special 0935. Emergency Response Pavement Repairs	30.000 EACH	_____._____	_____._____
	Section: 0001		Total:	_____._____

Total Bid: _____._____