HIGHWAY WORK PROPOSAL

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

Proposal Number: 003

STATE ID	FEDERAL ID	PROJECT DESCRIPTION	HIGHWAY	COUNTY
5640-01-87	WISC 2025557	Merrimac Ferry, Ferry Operations Building	STH 113	Columbia

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: $40,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Date: June 10, 2025 Time (Local Time): 11:00 am	Firm Name, Address, City, State, Zip Code **SAMPLE** **NOT FOR BIDDING PURPOSES**
Contract Completion Time December 09, 2025	
Assigned Disadvantaged Business Enterprise Goal 5%	This contract is exempt from 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

For Department Use Only

Type of Work:
Building, Removals, Grading, Aggregate, Asphalt Pavement, Concrete Sidewalk, Erosion Control, Traffic Control, Restoration.

Notice of Award Dated	Date Guaranty Returned

PLEASE ATTACH
PROPOSAL GUARANTY HERE

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.

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 department's 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:

4. Have a properly executed annual bid bond on file with the department.
5. 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.

B 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)

Effective with March 2010 Letting

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

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.

Special Provisions

Table of Contents

Article	Description	Page #
1.	General	2
2.	Scope of Work.	2
3.	Waiving Bidder Prequalification.	2
4.	Prosecution and Progress.	2
5.	Traffic.	3
6.	Holiday and Special Event Work Restrictions.	3
7.	Utilities.	3
8.	Work by Others.	4
9.	Information to Bidders, WPDES Transportation Construction General Permit (TCGP) for Storm Water Discharges.	4
10.	Notice to Contractor, Notification of Demolition and/or Renovation No Asbestos Found.	5
11.	Archaeological Site.	5
12.	Notice to Contractor, DSPS Plan Set.	5
13.	Removing Building STA 5+75, Item 204.0231.01.	5
14.	Base Aggregate Dense 1 1/4-Inch, Item 305.0120.	9
15.	General Requirements for Building Construction.	9
16.	Ferry Operations Building, Item SPV.0060.01.	37
17.	Ferry Operations Building HVAC, Item SPV.0060.02.	160
18.	Ferry Operations Building Electrical, Item SPV.0060.03.	187
19.	Grading and Shaping Site, Item SPV.0060.04.	300
20.	Gate System Metal 14-FT, Item SPV.0060.05.	300
21.	Salvage Sign (Surveillance), Item SPV.0060.06.	301
22.	Construction Staking Driveways 5640-01-87, Item SPV.0060.07.	301
23.	Fence Wood 6-FT, Item SPV.0090.01.	301

SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 5640-01-87, Merrimac Ferry, Ferry Operations Building, STH 113, Columbia 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, 2025 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 (20240703)

2. Scope of Work.

The work under this contract shall consist of removing existing building, grading, base aggregate, asphaltic surface, concrete sidewalk, concrete driveway, ferry operations building, and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

3. Waiving Bidder Prequalification.

Bidder prequalification is not required; however, prior to awarding a contract, the department may require the bidder to produce financial documentation similar to the prequalification statement (DT1621) and evidence that they have a history of performing work of a similar character in a satisfactory manner.

4. 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 ten 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.

Interim Completion and Liquidated Damages – Asphalt, Concrete, Restoration: October 15, 2025.

Complete construction operations on Ferry Operations Building Site to the stage necessary to reopen it to through traffic by October 15, 2025. Do not reopen until completing the following work: Asphaltic Surface, Concrete Sidewalk 5-Inch, Concrete Driveway 7-Inch, Salvaged Topsoil, Erosion Mat Urban class I Type B, Fertilizer Type B, and Seeding Mixture No. 40.

If the contractor fails to complete the work necessary to reopen Ferry Operations Building Site to traffic by October 15, 2025, the department will assess the contractor $1,045 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM on October 16, 2025. 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.

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.

Migratory Birds

No evidence of swallow or other migratory bird nests have been observed on or under the following structures(s) during the preconstruction inspection. However, if nesting is later observed prior to or during construction, the contractor shall implement avoidance/deterrent measures or obtain a depredation

permit. 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.

- Station 5+98 RT

Protection of Endangered Bats (Removing Buildings)

A bat inspection was completed and no evidence of bats was observed in the buildings to be removed. No restrictions apply to these buildings.

If any live or dead bats are discovered during razing, immediately cease razing operations on the site and contact the engineer. The department will consult with the Wisconsin Department of Natural Resources (WDNR) and US Fish and Wildlife Services (USFWS). The department will coordinate the removal of any live, sick, injured, or dead bats.

5. Traffic.

Place roadway/wayside and sidewalk signing and control as detailed on the plans, special provisions, and in conformance with the Manual on Uniform Traffic Control Devices (MUTCD), latest edition. Remove conflicting signs and control as necessary to avoid confusion.

Do not close STH 113 and associated ferry queueing lanes. Vehicular access through the wayside shall be maintained at all times. Short term daytime closure of the wayside roadway will be allowed only during the wayside roadway paving operation.

Maintain pedestrian access to the restrooms from the STH 113 ferry loading zone and the wayside at all times utilizing temporary pedestrian barricades as shown in the plans.

Storage of materials and equipment within the wayside shall be located within the area approved by the engineer. No materials and/or equipment shall block or prevent public access into the wayside. Do not store equipment, materials, or vehicles on STH 113, STH 188, and the ferry loading zone near the project limits. In addition, vehicles of contractor's employees, subcontractors, subcontractors' employees, vendors, etc. shall park within the wayside parking lot as marked or off to the one side of the travel lanes to allow one-way traffic through wayside at all times. Flaggers are required when the delivery is made to ensure vehicles within the wayside are able to maneuver in/out of the area.

Temporary safety fencing shall be used to fence off the work site of the new ferry operations building and staging area. Temporary safety fencing is included in the bid item Traffic Control.

6. Holiday and Special Event Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying STH 113 traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday and special event periods:

- From noon Thursday, July 3, 2025 to 6:00 AM Monday, July 7, 2025 for Independence Day;
- From noon Friday, August 29, 2025 to 6:00 AM Tuesday, September 2, 2025 for Labor Day.

stp-107-005 (20210113)

7. Utilities.

This contract comes under the provision of Administrative Rule Trans 220.

The utility work plan includes additional detailed information regarding the location of known discontinued, relocated, or removed utility facilities. These can be requested from the department during the bid preparation process, or from the project engineer after the contract has been awarded and executed.

Some of the utility work described below is dependent on prior work being performed by the contractor at a specific site. In such situations, provide the engineer and the affected utility a good faith notice of when the utility is to start work at the site. Provide this notice 14 to 16 calendar days in advance of when the prior work will be completed and 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.

stp-107-065 (20240703)

Any utility facility locations (stations, offsets, elevations, depths) listed in this article are approximate.

Alliant Energy – Electricity (Alliant) has a buried electric service line that enters the project area under the ferry loading zone on STH 113 and connects to the southwest side of the existing building. Coordinate the removal of the existing electric service, installation of temporary electric service for construction, and installation of permanent electric service to the building with Alliant per bid item Ferry Operations Building Electrical.

Frontier Communications - Communication (Frontier) has a buried communication line that runs along STH 113 south and east of the project work area. No conflicts are anticipated with this line. Another line runs from the pedestal in the wayside infield, under the wayside road, across the north face of the existing building, and then under the STH 113 Ferry Load Zone. This line will be discontinued prior to construction and left in place.

Madison Gas & Electric – Gas/Petroleum (MG&E) has a buried 60 PSI gas line that enters the project from the wayside infield and runs along the existing building and exits the project under the STH 113 ferry loading zone. The portion of the line under the proposed concrete driveway slab will be located outside to the east of the proposed concrete driveway slab prior to construction. Coordinate a new gas service line to the building with MG&E per bid item Ferry Operations Building HVAC.

8. Work by Others.

Columbia County will remove all contents of the existing building prior to the beginning of demolition. Notify Nick Pergande with Columbia County at 608-429-1025 at least 14 calendar days prior to construction for the removal of building contents.

9. Information to Bidders, WPDES Transportation Construction General Permit (TCGP) for Storm Water Discharges.

The calculated land disturbance for the project site is 0.22 acres.

The expected land disturbance for the project site is less than one acre in size and does not require permit coverage. Therefore, the department has not requested or obtained coverage under the TCGP.

If additional land disturbance is necessitated for the project due to proposed contractor means and methods, including temporary support activity sites, and the additional land disturbance results in a total cumulative land disturbance for the project of one acre or greater, permit coverage will need to be obtained. The department will be responsible for obtaining permit coverage following department approval of the associated ECIP. Contractor necessitated changes resulting in the need for permit coverage will not be cause for schedule delays or other damages.

Permit coverage for additional land disturbing construction activities related to contractor means and methods will be considered as part of the ECIP review and approval process. Coverage under the TCGP for additional land disturbance areas will be considered if the areas meet all the following:

- Must meet the permit's applicability criteria.
- Must be for the exclusive use of a WisDOT project.
- Ground disturbance first commences after the ECIP approval, and the areas are fully restored to meet the final stabilization criteria of the permit upon completion of the work.

If permit coverage is deemed necessary and obtained for the project, conform to all permit requirements and post the "Certificate of Permit Coverage" in a conspicuous place at the construction site.

Permit coverage, if necessary, will be under the Wisconsin Pollutant Discharge Elimination System, Transportation Construction General Permit, (WPDES Permit No. WI-S066796-2). The permit can be found at:

https://widnr.widen.net/s/s5mwp2gd7s/finalsignedwisdotcsgp

The contractor is responsible for obtaining any permits for areas that are not approved by the department for coverage under the TCGP.

stp-107-056 (20250108)

10. Notice to Contractor, Notification of Demolition and/or Renovation No Asbestos Found.

John Roelke, License Number AII-119523, inspected Structure Ferry Operations Building for asbestos on November 21, 2024. No Regulated Asbestos Containing Material (RACM) was found on this structure. A copy of the inspection report is included with the bid package or available from Hunter Waldschmidt, 608-245-2637, hunter.waldschmidt@dot.wi.gov.

According to NR447 and DHS159, ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 03/20), 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 Hunter Waldschmidt, 608-245-2637, hunter.waldschmidt@dot.wi.gov and via e-mail 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:

- Site Name: Structure Ferry Operations Building, STH 113
- Site Address: Merrimac Ferry South Landing Wayside
- Ownership Information: WisDOT Transportation Southwest Region, 2101 Wright St, Madison, WI 53704
- Contact: Hunter Waldschmidt
- Phone: 608-245-2637

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.

11. Archaeological Site.

Merrimac Ferry site (47CO231/BCO-0166) is located approximately within the limits shown on the plans as an "Environmentally Sensitive Area".

Do not use the site for borrow or waste disposal. Do not use the site area not currently capped by asphalt/concrete for the staging of personnel, equipment and/or supplies.

Use of a hydrovac is not permitted within the boundaries of the human burial site.

12. Notice to Contractor, DSPS Plan Set.

Store one copy of the Department of Safety and Professional Services (DSPS) approved plan set on site at all times. A copy of the DSPS approved plan set can be obtained by contacting Hunter Waldschmidt at 608-245-2637 or hunter.waldschmidt@dot.wi.gov.

13. Removing Building STA 5+75, Item 204.0231.01.

Follow Standard Specification 204 and as follows:

SECTION 02 41 00

DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Removal of building.

B. Removal of designated building equipment, fixtures, and finishes.

C. Removal of equipment and fixtures for reinstallation.

D. Disposal of materials.

E. Identification of utilities.

F. Refer to items on drawings.

G. Recycling of materials.

H. Removal of concrete slabs and foundations.

1.02 RELATED SECTIONS

A. Special Provision “General Requirements for Building Construction” - Section 01 11 00 – Summary of Work: Work sequence and Owner’s continued occupancy.

B. Special Provision “General Requirements for Building Construction” - Section 01 50 00 - Temporary Facilities and Controls: Temporary enclosures, dust control barricades, security at Owner occupied areas, and cleanup during construction.

C. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Project record documents.

1.03 SUBMITTALS

A. Submit a copy of the DNR Form 4500-113 and a copy of the check to the DNR to the AE for a record copy.

1.04 REGULATORY REQUIREMENTS

A. Do not close or obstruct egress width to any building or site exits.

B. Do not disable or disrupt building fire or life safety systems without [3] day prior written notice to the Owner.

C. Conform to procedures applicable when hazardous or contaminated materials are discovered.

D. Obtain and pay for all required permits and approvals.

E. Submit and pay for submittal of DNR Form 4500-113 (Notification of Demolition and/or Renovation and Application for Permit Exemption).

1.05 PROJECT CONDITIONS

A. Conduct demolition to minimize interference with adjacent and occupied building areas.

B. Cease operations immediately if structure appears to be in danger and notify Engineer. Do not resume operations until directed.

C. Owner assumes no responsibility for actual conditions of buildings to be demolished.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine existing buildings indicated to be demolished before demolition.

B. Determine where removals may result in structural deficiency or unplanned building collapse during demolition. Coordinate demolition sequence and procedures to prevent structures from becoming unstable.

C. Determine where demolition may affect structural integrity or weather resistance of adjacent buildings indicated to remain.
1. Identify measures required to protect buildings from damage.
2. Identify remedial work including patching, repairing, bracing, and other work required to leave buildings indicated to remain in structurally sound and weathertight and watertight condition.

3.02 PREPARATION

A. Provide, erect, and maintain temporary safety barriers.

B. Erect and maintain weatherproof closures for exterior openings.

C. Erect and maintain temporary partitions to prevent spread of dust, odors and noise to permit continued Owner occupancy.

D. Protect existing materials which are not to be demolished.

E. Prevent movement of structure; provide required bracing and shoring.

F. Notify affected utility companies before starting work and comply with their requirements.

G. Mark location and termination of utilities.

H. Provide appropriate temporary signage including signage for exit or building egress.

3.03 DEMOLITION

A. Use of explosives is not permitted.

B. Disconnect and cap designated utilities to 5 feet from building line. Identify utilities at termination of demolition. Record termination or capped location on Record Documents.

C. Remove foundation walls and footings. At the existing piping area, remove foundation walls and stair to 5 feet 0 inches below the new finished floor.

D. Remove concrete slabs-on-grade.

E. Not used.

F. Break up concrete slabs-on-grade to permit natural moisture drainage.

G. Demolish in an orderly and careful manner. Protect existing supporting structural members.

H. Recycle demolished materials to the extent possible.
   1. Recycle the aluminum from the aluminum windows and entrances. Remove the glass from the frames. Dispose of the glass. Take the aluminum to a recycle or scrap yard for the aluminum to be recycled.
   2. Recycle the brick and concrete block to the extent possible.
   3. Recycle the steel lintels and horizontal joint reinforcement. Either salvage for Contractor's use or take to a recycler or scrap iron yard.
   4. Expanded polystyrene insulation board shall be recycled. Remove from the wall in sheets, stock, bundle and transport to a recycler of EPS. Submit to the Engineer the name of the recycler.
   5. Recycle the carpet. Contact a carpet manufacturer for recycling instructions for the carpet.

I. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.

J. Remove materials as work progresses. Upon completion of work, leave areas in clean condition.

K. Remove temporary work.

END OF SECTION

14. Base Aggregate Dense 1 1/4-Inch, Item 305.0120.

Add the following to standard spec 305.2.2.1:

When 1 1/4-Inch base aggregate is >/= 50 percent crushed gravel, conform to the following gradation requirements:

SIEVE	PERCENT PASSING BY WEIGHT
1 1/4 inch	95 - 100
1 inch	---
3/4 inch	70 - 90
3/8 inch	45 - 75
No. 4	30 - 60
No. 10	20 - 40
No. 40	7 - 25
No. 200	3 - 10[1]

[1] Limited to a maximum of 8.0 percent for base placed between old and new pavement.

swr-305-002 (20170711)

15. General Requirements for Building Construction.

Notice Regarding Buy America Requirements:

The presence of a product on an existing list does not constitute compliance with Buy America requirements. Approved product lists are intended to indicate compliance with WisDOT's approval application process. As indicated in the Construction and Materials Manual, CMM228.5, the Buy America provision appropriate documentation/certification is required for products that contain iron and steel, manufactured products, or construction materials, in accordance with 2 CFR Part 184 and 2 CFR Part 200. Refer to CMM and the reference regulations for additional information.

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Building Permits

B. Construction Document Reproduction.

C. Coordination.

D. Field engineering.

E. Preconstruction meeting.

F. Progress meetings.

G. Preinstallation meetings.

H. Contractor Site Supervision and Observation.

I. Project Operations.

J. Disposal of Materials.

K. Contractor Environmental Requirements.

L. Examination.

M. Preparation.

N. Cutting and patching.

O. Alteration project procedures.

1.02 BUILDING PERMITS

A. Building Permits shall be applied for and coordinated by the Contractor at no additional cost to the project.

1.03 CONSTRUCTION DOCUMENT REPRODUCTION

A. Additional copies are the responsibility of the Contractor.

1.04 COORDINATION

A. Coordinate scheduling, submittals, and Work of the various sections of the Project Manual to assure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate Work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

C. Coordinate space requirements, supports, and installation of mechanical and electrical work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

E. Coordinate completion and clean up of Work of separate sections in preparation for Substantial Completion.

F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.05 FIELD ENGINEERING

A. Contractor to locate and protect survey control and reference points. Promptly notify Engineer of discrepancies discovered.

B. Provide field engineering survey services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.

1.06 PRECONSTRUCTION MEETING

A. WisDOT/Engineer will schedule a meeting.

B. Attendance Required: Owner, Engineer, subcontractors, and Contractor.

1.07 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum of once every two weeks.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required: Job superintendent, major Subcontractors and supplier, as appropriate to agenda topics for each meeting. Coordinate and invite the WisDOT, County, and Engineer.

D. Agenda:
1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems which impede planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding Work period.
10. Coordination of projected progress.
11. Maintenance of quality and Work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

E. General Contractor will record minutes and distribute copies after meeting to participants.

1.08 PREINSTALLATION MEETING

A. When required in individual specification sections, convene a preinstallation meeting at Work site prior to commencing Work of the section.

B. Require attendance of parties directly affecting, or affected by, Work of the specific section.

C. Notify Engineer four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
   1. Review conditions of installation, preparation and installation procedures.
   2. Review coordination with related Work.

1.09 CONTRACTOR SITE SUPERVISION AND OBSERVATION

A. General Contractor shall have a Supervisor on the job site every day that there is work underway.

B. General Contractor shall compile a daily log of the work that takes place every day and any issue that may arise.

C. General Contractor shall take a minimum of 10 digital pictures per day of the ongoing work and progress.

D. General Contractor shall compile the daily logs and pictures and email the Engineer the daily logs and pictures twice per week. Submit by 12:00 noon on Mondays and Thursdays during the course of on-site work.

1.10 PROJECT OPERATIONS

A. The Contractor Foreman shall be available at all times on the site. When not in attendance on the roof, the foreman shall be accessible by means of a telephone, pager, or other approved communication device.

B. Plan construction so that it does not interfere with the use of the building or impede access. Keep entrances and passageways usable and free from debris.

C. The Contractor shall perform his work between the hours of 6:00 a.m. and 9:00 p.m, or in accordance with local ordinance, whichever is applicable. In addition he shall remove, store, clean up construction materials and debris as designated by the Owner/Engineer. All work is to be directed at leaving the area free of any construction debris and materials so as not to interfere with established operating routines. Temporary provisions to make the construction area free of dangerous or awkward inconveniences shall be provided as required by the Owner.

1.11 DISPOSAL OF MATERIALS

A. Remove debris from building and site as it accumulates. Debris shall be transported on rubber-tired trucks and covered to prevent spread of dust.

B. All materials and property which are indicated to be removed shall be legally disposed of in an approved landfill, by the Contractor.

1.12 CONTRACTOR ENVIRONMENTAL REQUIREMENTS

A. Contractors shall remove all of their waste chemicals, chemically contaminated materials, and empty containers used in the performance of their work from the site daily. All materials and containers must be disposed of off site in accordance with local, state and federal requirements. Do not dispose of chemicals into site drain systems (inside or outside of building), onto soil or into trash dumpsters operated by the Owner. Containers owned by Contractor shall not be marked with the Owner's name.

B. Liquids are to be discharged to drain only upon authorization from the Owner/Engineer. All solid wastes shall be removed from the site to approved facilities or placed in appropriate containers/holding areas as authorized by the Owner and Engineer.

C. All vehicles, machinery, and equipment stored on site must be in approved areas and maintained as necessary to assure proper operation and containment of fluids.

D. Pumps, hoses, temporary storage tanks, and tankers shall be appropriately staffed and located to prevent the release of liquids from the equipment to the environment. Appropriate actions must be taken to mitigate impacts in the event of a release.

E. All releases of chemicals, fuel oils, wastewater, or other materials shall be immediately reported to the Owner.

F. Tankers, being used to transport or store materials on site must be clean of any contaminants from prior usage of the tanker.

G. All containers of chemicals, petroleum products, or other materials shall be stored, used, and disposed of in a manner preventing their release to the environment in any amount. Handling methods deemed inappropriate by Owner shall be immediately corrected by the Contractor.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify that utility services are available, of the correct characteristics, and in the correct location.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply any manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 CUTTING AND PATCHING

A. Employ skilled and experienced installer to perform cutting and patching.

B. Submit written request in advance of cutting or altering elements which affects:
   1. Structural integrity of element.
   2. Integrity of weather-exposed or moisture-resistant elements.
   3. Efficiency, maintenance, or safety of element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate contractor.

C. Execute cutting, fitting, and patching [including excavation and fill,] to complete Work, and to:
   1. Fit the several parts together to integrate with other Work.
   2. Uncover Work to install or correct ill-timed Work.
   3. Remove and replace defective and non-conforming Work.
   4. Remove samples of installed Work for testing.
   5. Provide openings in elements of Work for penetrations of mechanical and electrical work.

D. Execute Work by methods to avoid damage to other Work and which will provide proper surfaces to receive patching and finishing.

E. Cut masonry and concrete materials using masonry saw or core drill.

F. Restore Work with new Products in accordance with requirements of Contract Documents.

G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

I. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

J. Identify any hazardous substance or condition exposed during the Work to the Engineer for decision or remedy.

K. At penetrations of fire-rated walls, partitions, ceiling, or floor construction, completely seal voids with fire-rated material.

3.04 ALTERATION PROJECT PROCEDURES

A. Materials: As specified in Product sections; match existing Products and Work for patching and extending Work.

B. Employ original skilled and experienced installer to perform cutting and patching.

C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

E. Remove debris and abandoned items from area and from concealed spaces.

F. Prepare surface and remove surface finishes to permit installation of new work and finishes.

G. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity.

H. Remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to specified condition.

I. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

J. Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

K. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Engineer for review.

L. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition; to Engineer for review.

M. Trim existing doors to clear new floor finish. Refinish trim to original condition.

N. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

O. Finish surfaces as specified in individual Product sections.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittal procedures.

B. Construction progress schedules.

C. Proposed Products list.

D. Shop Drawings.

E. Product Data.

F. Samples.

G. Manufacturer's installation instructions.

H. Manufacturers' certificates.

1.02 RELATED SECTIONS

A. Special Provision "General Requirements for Building Construction" - Section 01 40 00 - Quality Requirements: Manufacturers' field services and reports.

B. Special Provision "General Requirements for Building Construction" - Section 01 70 00 - Execution and Closeout Requirements: Contract warranties and closeout submittals.

1.03 SUBMITTAL PROCEDURES

A. Submittals shall be emailed in a PDF form whenever possible.

B. Identify Project, Contractor, Subcontractor, or supplier; pertinent drawing and detail number, and specification section number, as appropriate.

C. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.

D. Schedule submittals to expedite the Project and deliver to Engineer at business address. Coordinate submission of related items.

E. For each submittal for review, allow 15 calendar days excluding delivery time to and from the Contractor.

F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.

G. When revised for resubmission, identify changes made since previous submission.

H. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

I. Submittals not requested will not be recognized or processed.

1.04 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial schedule in duplicate within 20 days after date established in Notice to Proceed.

B. Revise and resubmit as required.

C. Submit revised schedules identifying changes since previous version.

D. Submit a horizontal bar chart with separate line for each major section of Work or operation identifying first workday of each week.

E. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities.

1.05 PROPOSED PRODUCTS LIST

A. Within 20 days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.06 SHOP DRAWINGS

A. Shop Drawings: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit PDF via email.

C. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

1.07 PRODUCT DATA

A. Product Data: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit PDF via email.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.

D. Indicate Product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

1.08 SAMPLES

A. Samples: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Samples for Selection as Specified in Product Sections:
   1. Submit to Engineer for aesthetic, color, or finish selection.
   2. Submit samples of finishes from full range of manufacturers' standard colors, or in custom colors specified, textures, and patterns for Engineer selection.

C. Submit samples to illustrate functional and aesthetic characteristics of the Product with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

D. Include identification on each sample with full Project information.

E. Submit the number of samples specified in individual specification sections; one of which will be retained by Engineer.

F. Reviewed samples which may be used in the Work are indicated in individual specification sections.

G. Samples will not be used for testing purposes unless specifically stated in specification section.

1.09 MANUFACTURER INSTALLATION INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing to Engineer in quantities specified for Product Data.

B. Indicate special procedures, perimeter conditions requiring special attention and special environmental criteria required for application or installation.

1.10 MANUFACTURER CERTIFICATES

A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Engineer, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 GENERAL

The intent of the Contract Documents is to include all items necessary to produce the indicated results. In the event of a conflict or inconsistency in or among the contract documents, or between the Contract Documents, the Contractor shall, unless directed otherwise in writing by the Owner, provide the greatest quantity, highest quality, highest degree of safety, and the most stringent material, equipment or work.

1.01 SECTION INCLUDES

A. Quality control and control of installation.

B. Workmanship.

C. Manufacturer's Instructions.

D. Special Requirements.

E. Tolerances.

F. References.

G. Mockup requirements.

H. Inspecting and testing laboratory services.

I. Manufacturers' field services and reports.

J. Examination.

K. Preparation.

1.02 QUALITY CONTROL AND CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. When manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by persons qualified to produce workmanship of specified quality.

F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

G. The applicator shall be a company specializing in installation of single-ply roof membranes with three years of documented experience.

1.03 WORKMANSHIP

A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.

B. Perform work by persons qualified to produce workmanship of specified quality.

C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.04 MANUFACTURER'S INSTRUCTIONS

A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

1.05 SPECIAL REQUIREMENTS

A. The Contractor shall maintain the same foreman until completion of the project; rotating or switching of foreman is not permitted without just cause.

B. The Contractor's foreman shall be present on the job site during the majority of work hours and shall be accessible at all times to ensure good project coordination and communication.

C. The Contractor shall obtain weather forecasts from the National Weather Service daily prior to starting any roof work.

D. All work that requires sawcutting and other similar functions that create substantial noise and/or vibration shall be coordinated well in advance of the work with the Owner. These functions typically create disturbance to building occupants and with proper coordination the impact to occupants can be reduced.

1.06 TOLERANCES

A. Monitor fabrication and installation tolerance control of Products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.07 REFERENCES

A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date of Contract Documents, except where a specific date is established by code.

C. Obtain copies of standards where required by product specification sections.

D. When specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

E. Neither contractual relationship, duties, nor responsibilities of the parties in Contract nor those of the Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.08 MOCK-UP REQUIREMENTS

A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Accepted mock-ups are representative of the quality required for the Work.

D. Where mock-up has been accepted by Engineer and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so.

1.09 INSPECTING AND TESTING LABORATORY SERVICES

A. Employ and pay for services of an independent testing agency or laboratory acceptable to Owner to perform specified testing.
   1. Prior to start of Work, submit testing laboratory name, address, and telephone number, and names of full time [registered Engineer] [specialist] and responsible officer.
   2. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of deficiencies reported by inspection.

B. The independent firm will perform inspections, tests, and other services specified in individual specification sections and as required by the Engineer or the Owner.

C. Inspecting, testing, and source quality control may occur on or off the project site. Perform off-site inspecting or testing as required by the Engineer or the Owner.

D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
   1. Notify Engineer and independent firm 24 hours prior to expected time for operations requiring services.
   2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.

E. Testing and employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

F. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same independent firm on instructions by Engineer. Payment for re-testing or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.

G. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Engineer. Payment for retesting will be charged to the Contractor by deducting inspecting or testing charges from the Contract Sum/Price.

H. Agency Responsibilities:
   1. Test samples of mixes submitted by Contractor.
   2. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
   3. Perform specified sampling and testing of products in accordance with specified standards.
   4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   5. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or products.
   6. Perform additional tests required by Engineer.
   7. Attend preconstruction meetings and progress meetings.

I. Agency Reports: After each test, promptly submit one copy of report to Engineer, Owner and to Contractor. When requested by Engineer, provide interpretation of test results. Include the following:
   1. Date issued.

2. Project title and number.
3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and specifications section.
6. Location in Project.
7. Type of inspection or test.
8. Date of test.
9. Results of tests.
10. Conformance with Contract Documents.

J. Limits On Testing Authority:
1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency or laboratory may not approve or accept any portion of the Work.
3. Agency or laboratory may not assume duties of Contractor.
4. Agency or laboratory has no authority to stop the Work.

1.10 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, and test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

C. Submit report within 30 days of observation to Engineer for information.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify utility services are available, of correct characteristics, and in correct locations.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES (But not limited to)

A. Temporary Utilities:
   1. Temporary electricity.
   2. Temporary lighting for construction purposes.
   3. Temporary heating.
   4. Temporary ventilation.
   5. Telephone service.
   6. Facsimile service.
   7. Temporary water service.
   8. Temporary sanitary facilities.

B. Construction Facilities:
   1. Field offices (WisDOT standard) and sheds.
   2. Job site technology equipment.
   3. Vehicular access.
   4. Parking.
   5. Progress cleaning and waste removal.
   6. Project identification.

C. Temporary Controls:
   1. Barriers.
   2. Enclosures
   3. Fencing.
   4. Protection of the Work.
   5. Security.
   6. Water control.
   7. Dust control.
   8. Erosion and sediment control.

D. Removal of utilities, facilities, and controls.

1.02 TEMPORARY ELECTRICITY

A. Provide and pay for power service required from utility source as needed for construction operation. [Utilize Owner's existing power service, provide separate metering and reimburse Owner for cost of energy used.]

B. Provide temporary electric feeder from existing building electrical service. Do not disrupt Owner's use of service (if applicable).

C. Complement existing power service capacity and characteristics as required for construction operations.

D. Provide power outlets, with branch wiring and distribution boxes located as required for construction operations. Provide flexible power cords as required for portable construction tools and equipment.

E. Permanent convenience receptacles may be utilized during construction.

1.03 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Provide and maintain incandescent lighting for construction operations.

B. Provide and maintain lighting to exterior staging and storage areas after dark for security purposes.

C. Provide and maintain lighting to interior work areas after dark for security purposes.

D. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps for specified lighting levels.

E. Maintain lighting and provide routine repairs.

F. Permanent building lighting may not be utilized during construction.

1.04 TEMPORARY HEATING

A. Existing facilities may beused.

B. Provide and pay for heating devices and heat as needed to maintain specified conditions for construction operations.

C. Prior to operation of permanent equipment for temporary heating purposes, verify installation is approved for operation, equipment is lubricated and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts. Dusty construction activities must have been completed prior to using permanent equipment.

D. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in product sections.

E. Operation of permanent equipment for temporary heating purposes is not allowed.

F. Combustion type temporary heating devices shall be vented outside of any temporary enclosure and building envelope. Combustion gas shall not be allowed in any temporary enclosure and building envelope.

1.05 TEMPORARY VENTILATION

A. Ventilate enclosed areas to achieve curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.06 TEMPORARY WATER SERVICE (If APPLICABLE)

A. Provide and pay for suitable quality water service as needed to maintain specified conditions for construction operations. Connect to existing water source. Provide separate metering and reimburse Owner for cost of water used.

B. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

1.07 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Existing facility use is not permitted. Provide facilities at time of project mobilization.

1.08 FIELD OFFICES AND SHEDS

A. Office: Weather tight, with lighting, electrical outlets, heating, and ventilating equipment, and equipped with sturdy furniture meeting the requirements of WisDOT Standard Specifications.

B. Provide space for Project meetings, with table and chairs to accommodate six persons.

C. Removal: At completion of Work remove buildings, foundations, utility services, and debris. Restore areas.

1.09 JOB SITE TECHNOLOGY EQUIPMENT

A. General Contractor shall provide a field office meeting WisDOT Standard Specifications.

1.10 VEHICULAR ACCESS

A. Construct temporary access roads from public thoroughfares to serve construction area, of width and load bearing capacity to accommodate unimpeded traffic for construction purposes.

B. Construct temporary bridges and culverts to span low areas and allow unimpeded drainage.

C. Extend and relocate vehicular access as Work progress requires, provide detours as necessary for unimpeded traffic flow.

D. Location as indicated on Drawings (If provided).

E. Provide unimpeded access for emergency vehicles. Maintain 20-foot wide driveways with turning space between and around combustible materials.

F. Provide and maintain access to fire hydrants and control valves free of obstructions.

G. Provide means of removing mud from vehicle wheels before entering streets.

H. Do not use STH 113 (Ferry loading area) for access to the site, unloading or loading materials, or any other activities related to the construction of this project.

1.11 PARKING

A. Arrange for parking areas to accommodate construction personnel.

B. When site space is not adequate, provide additional off-site parking.

C. Use of existing on-site streets and driveways (access loop in park) used for construction traffic ispermitted. Tracked vehicles not allowed on paved areas.

D. Use of existing parking facilities used by construction personnel is permitted.

E. Do not allow heavy vehicles or construction equipment in parking areas.

F.

G. Permanent Pavements And Parking Facilities:
   1. Prior to Substantial Completion, bases for permanent roads and parking areas may be used for construction traffic.
   2. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.
   3. Use of permanent parking structures isnot permitted.

H. Maintenance:
   1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
   2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

I. Removal, Repair:
   1. Remove temporary materials and construction when permanent paving is usable.
   2. Remove underground work and compacted materials and grade site as specified.
   3. Repair existing facilities damaged by use, to specified condition.

J. Mud From Site Vehicles: Provide means of removing mud from vehicle wheels before entering streets.

1.12 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing spaces.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and rubbish from site periodically and dispose off-site.

E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.13 PROJECT IDENTIFICATION

A. In addition to standard WisDOT wage rate boards, etc; provide a Project Identification Sign:
   1. One painted sign of construction, design, and content shown on Drawings, location designated.
   2. Content:
      a. Project title and name of Owner as indicated on Contract Documents.
      b. Names and titles of authorities.
      c. Names and titles of Engineer and Consultants.
      d. Name of Prime Contractor and major Subcontractors.
   3. Graphic Design, Colors, Style of Lettering: Designated by Engineer.

B. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

C. Sign Materials:
   1. Structure and Framing: New wood structurally adequate.
   2. Sign Surfaces: Exterior grade plywood with medium density overlay, minimum 3/4 inches thick, standard large sizes to minimize joints.
   3. Paint and Primers: Exterior quality, two coats.
   4. Lettering: Exterior quality paint.

D. Installation:
   1. Install project identification sign within 15 calendar days after date fixed by Notice to Proceed.
   2. Erect at location of high public visibility adjacent to main entrance to site.
   3. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.
   4. Install sign surface plumb and level, with butt joints. Anchor securely.
   5. Paint exposed surfaces of sign, supports, and framing.

E. Maintenance: Maintain signs and supports clean, repair deterioration and damage.

F. Removal: Remove signs, framing, supports, and foundations at completion of Project and restore area.

1.14 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner's use of site,and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by authorities having jurisdiction for public rights-of-way and for public access to existing building.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.15 ENCLOSURES

A. Exterior Building Opening Enclosures:
   1. Provide and erect temporary insulated weather tight closures on all exterior openings to accommodate acceptable working conditions and for protection of products from rain, snow, ice, wind, and vandalism and to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

   2. Construction: Wood sheathing over framing with fiberglass insulation (insulated to R13 minimum) between the framing.

B. Building Enclosure
   1. Provide a temporary enclosure around the exterior walls to accommodate acceptable working conditions and for protection of products from rain, snow, ice, and wind and to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections.
   2. Construction: Contractor's option but at a minimum 10 mil reinforced polyethylene supported by scaffolding or other framing system.

C. Interior Enclosures:

1.16 FENCING

A. Construction: Contractor's option: Commercial grade chain link fence or Plastic construction netting.

B. Provide 6 feet high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.17 SECURITY

A. Security Program:
   1. Protect Work, existing premises, and Owner's operations from theft, vandalism, and unauthorized entry.
   2. Initiate program in coordination with Owner's existing security system at project mobilization.
   3. Maintain program throughout construction period until Owner occupancy.

B. Entry Control:
   1. Restrict entrance of persons and vehicles into Project site [and existing facilities].
   2. Allow entrance only to authorized persons with proper identification.
   3. Maintain log of workers and visitors, make available to Owner on request.

1.18 WATER CONTROL

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

1.19 DUST CONTROL

A. Execute Work by methods to minimize raising dust from construction operations.

B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.20 EROSION AND SEDIMENT CONTROL

A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

B. Minimize surface area of bare soil exposed at one time.

C. Provide temporary measures including berms, dikes, and drains, and other devices to prevent water flow.

D. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.

E. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

1.21 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.

B. Remove underground installations. Grade site as indicated on Drawings.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

E. Product substitution procedures.

1.02 PRODUCTS

A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.

1.03 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.04 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.05 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: products of one of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.06 PRODUCT SUBSTITUTION PROCEDURES

A. Where the phrase “or approved equal” occurs in the Contract Documents, material or equipment is not considered to be approved unless the item has been specifically approved for this Project.

B. Engineer will consider requests for substitutions only when such requests are submitted no less than ten (10) calendar days prior to the bid date. No products will be considered for approval if received less than the ten (10) days prior to the date date.

C. Substitutions will not be considered after the bid date.

D. After bidding substitutions will be considered when a product becomes unavailable through no fault of Contractor.

E. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

F. A request constitutes a representation that Contractor:
1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
2. Will provide same warranty for Substitution as for specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse Owner and Engineer for review or redesign services.

G. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to Contract Documents.

H. Substitution Submittal Procedure:
1. Submit via email a request for Substitution approval for consideration.
2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
3. Engineer will notify Contractor in writing of decision to accept or reject request.

I. Inclusion of a manufacturer or product in the specifications does not constitute compliance with Buy America requirements.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Closeout procedures.

B. Final cleaning.

C. Starting of systems.

D. Demonstration and instructions.

E. Testing, adjusting and balancing.

F. Protecting installed construction.

G. Project record documents.

H. Operation and maintenance data.

I. Manual for materials and finishes.

J. Manual for equipment and systems.

K. Spare parts and maintenance products.

L. Product warranties and product bonds.

1.02 CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.

B. Provide submittals to Engineer required by authorities having jurisdiction.

C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.03 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.

D. Replace filters of operating equipment.

E. Clean debris from roofs, gutters, downspouts, and drainage systems.

F. Clean site; sweep paved areas, rake clean landscaped surfaces.

G. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.04 STARTING OF SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Owner prior to start-up of each item.

C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable Contractors' personnel in accordance with manufacturers' instructions.

G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

1.05 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.

B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

D. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time.

E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

F. Required instruction time for each item of equipment and system is specified in individual sections.

1.06 TESTING, ADJUSTING AND BALANCING

A. Independent firm will perform services specified in Section 23.

B. Reports will be submitted by independent firm to Engineer indicating observations and results of tests and indicating compliance or non-compliance with requirements of Contract Documents.

1.07 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

1.08 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed Shop Drawings, Product Data, and Samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
   4. Field changes of dimension and detail.
   5. Details not on original Contract drawings.

G. Submit documents to Engineer prior to claims for final Application for Payment.

1.09 OPERATION AND MAINTENANCE DATA

A. Submit data bound in 8-1/2 x 11 inch (A4) text pages, three ring binders with durable plastic covers.

B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.

C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

D. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

E. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:

1. Part 1: Directory, listing names, addresses, and telephone numbers of Engineer, Contractor, Subcontractors, and major equipment suppliers.
2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
    a. Significant design criteria.
    b. List of equipment.
    c. Parts list for each component.
    d. Operating instructions.
    e. Maintenance instructions for equipment and systems.
    f. Maintenance instructions for finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
3. Part 3: Project documents and certificates, including the following:
    a. Shop drawings and product data.
    b. Air and water balance reports.
    c. Certificates.
    d. Originals of warranties and bonds.

1.10 MANUAL FOR MATERIALS AND FINISHES

A. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

B. Submit one copy of completed volumes 15 days prior to final inspection. Submit draft copy to be reviewed and returned after final inspection, with Engineer comments. Revise content of document sets as required prior to final submission.

C. Submit one copy of revised final volumes in final form within 10 days after final inspection.

D. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom manufactured products.

E. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

F. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.

G. Additional Requirements: As specified in individual product specification sections.

H. Include listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.11 MANUAL FOR EQUIPMENT AND SYSTEMS

A. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

B. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy be reviewed and returned after final inspection, with Engineer comments. Revise content of document sets as required prior to final submission.

C. Submit one copy of revised final volumes in final form within 10 days after final inspection.

D. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.

E. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

F. Include color-coded wiring diagrams as installed.

G. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and special operating instructions.

H. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

I. Include servicing and lubrication schedule, and list of lubricants required.

J. Include manufacturer's printed operation and maintenance instructions.

K. Include sequence of operation by controls manufacturer.

L. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

M. Include control diagrams by controls manufacturer as installed.

N. Include Contractor's coordination drawings, with color-coded piping diagrams as installed.

O. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

P. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

Q. Include test and balancing reports as specified in Special Provision "General Requirements for Building Construction" - Section 01 40 00 - Quality Requirements.

R. Additional Requirements: As specified in individual product specification sections.

S. Include listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

1.12 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.

B. Deliver to Project site and place in location as directed by Owner; obtain receipt prior to final payment.

C. Provide a summary of all extra materials turned over to Owner no later than 10 days after substantial completion.

1.13 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.

B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.

C. Verify documents are in proper form, contain full information, and are notarized.

D. Co-execute submittals when required.

E. Include Table of Contents and assemble in three D-ring side binder with durable plastic cover.

F. Submit prior to final Application for Payment.

G. Time of Submittals:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
   2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION – Not Used.

END OF SECTION

16. Ferry Operations Building, Item SPV.0060.01.

A Description

This item consists of general construction work for the Ferry Operations Building. The work shall be in accordance to the applicable plans, the special provision “General Requirements for Building Construction”, and the following specifications.

B Material

See specifications below.

C Construction

See specifications below.

D Measurement

The department will measure Ferry Operations Building as 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.0060.01	Ferry Operations Building	EACH

Payment is full compensation for furnishing and installing all materials and equipment.

SECTION 03 11 13

CAST-IN-PLACE CONCRETE FORMING

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. Applicable provisions of Special Provision “General Requirements for Building Construction” - Section 01 shall govern work of this section.

1.02 APPLICABLE PUBLICATIONS

A. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto.

1. American Concrete Institute (ACI) Annual Book of ACI Standards:
   a. ACI 117/177R - Specifications for Tolerances for Concrete Construction and Materials and Commentary, Current Edition.
   b. ACI 301 - Specifications for Structural Concrete, Current Edition.
   c. ACI 302.1R - Guide for Concrete Floor and Slab Construction, Current Edition.
   d. ACI 311.4R - Guide for Concrete Inspection, Current Edition.
   e. ACI 318 - Building Code Requirements for Structural Concrete, Current Edition.
   f. ACI 347 - Guide to Formwork for Concrete, Current Edition.
   g. ACI ASCC-1(05) - The Contractor’s Guide to Quality Concrete Construction, Third Edition.
   h. ACI SCM-24 - Concrete Repair Basics, Current Edition.
   i. ACI SP-4 - Formwork for Concrete, Current Edition.
   j. ACI SP15 – Field Reference Manual: Standard Specifications for Structural Concrete ACI 301 with Selected ACI Reference, Current Edition.
   k. ACI SP-71 - ASTM Standards in ACI 318, Current Edition.
2. American Plywood Association (APA) Specifications and Standards:
   a. APA PS1 - Plywood Design Specification, Current Edition.

1.03 DESCRIPTION OF WORK

A. The work covered under this section shall consist of furnishing all materials, equipment and labor required to furnish all formwork for cast-in-place concrete as shown on the contract drawings and specified herein.

B. The work shall include formwork, shoring for cast-in-place concrete, and installation into formwork of items by other such as anchor bolts, setting plates, bearing plates, anchorages, inserts, frames, nosings and other items to be embedded in concrete.

1.04 RELATED WORK ELSEWHERE

A. Concrete Accessories - Section 03

B. Concrete Reinforcing - Section 03

C. Cast-in-Place Concrete - Section 03

D. Joint Sealers – Section 07

PART 2 PRODUCTS AND MATERIALS

2.01 DESIGN

A. The design and engineering of the formwork and its accessories shall be the responsibility of the Contractor. Formwork shall be designed, erected, supported, braced and maintained so as to safely support all vertical and lateral loads until such loads can be supported by the concrete structure.

B. Determination of loads and design shall be in accordance with ACI 301 and ACI 347.

2.02 FORMS

A. Forms may be wood, plywood, concrete-form-grade hardboard, metal or other acceptable material which will produce smooth, true surfaces.
   1. Provide lumber dressed on at least two edges and one side for tight fit.
   2. Metal forms shall have smooth surfaces free from any pattern, irregularities, dents, bends and sags.

2.03 SHORING

A. All shoring members shall be of such design and material to safely support all dead and working loads throughout the placing and curing period. Shoring shall be placed to prevent sagging and settlement.

2.04 FORM TIES AND ACCESSORIES

A. Form ties shall be factory-fabricated, adjustable-length, removable or snapoff metal, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal.

B. For exposed concrete surfaces, provide ties so that the portion remaining with the concrete after removal is 1 inch to 1-1/2 inches inside the finished face of the concrete. Provide form ties which will not leave holes larger than 1 inch in diameter in concrete surfaces.

2.05 FORM COATING COMPOUND

A. Form coating compound shall be a commercial formulation that will not bond with, stain, nor adversely affect concrete surfaces and not impede the wetting of surfaces to be cured with water or curing compounds. Forms for concrete surfaces requiring subsequent treatment shall receive a type of coating that will not impair bond or adhesion.

B. Form coating compound for steel forms shall conform with all requirements stated above and shall be of rust-preventative type.

PART 3 EXECUTION

3.01 GENERAL

A. Responsibility. The design and construction of formwork shall be the sole responsibility of the Contractor.

B. Earth forms are not acceptable or permitted.

C. Construct forms to the exact sizes, shapes, lines and dimensions shown, as required to obtain accurate alignment, location, grades, level and plumb in finished construction and to maintain tolerances in accordance with ACI 301. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required. Chamfer all corners of concrete exposed to view using chamfer strips. Use selected materials to obtain required finishes.

D. Forms shall be sufficiently tight to prevent leakage of concrete. Temporary openings shall be provided in the inside form of all wall forms and in column forms to facilitate cleaning and inspection immediately before placing concrete.

E. Assemble forms so their removal will not damage concrete and adjacent materials.

3.02 FORMWORK

A. Forms shall conform in general to shape, line, grade and dimensions of members as shown on contract drawings, and shall have the strength and stability to insure finished concrete within the tolerances specified in ACI 347.

1. Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses and chases from those other trades.
2. Exterior edges of all exposed concrete, unless otherwise specified, shall have a chamfer strip placed in form to provide bevel of sharp edges. Chamfer strips shall be 3/4-inch by 3/4-inch by 45º wood, plastic, or rubber.
3. Accurately place and secure in position, prior to placing concrete, all anchors, bolts, inserts and other items furnished under other sections of the specifications and for other contractors on the project.

B. Formwork shall be mortar-tight and sufficiently rigid to prevent displacement or sagging between supports.

C. Formwork shall be properly braced or tied together so as to maintain position and shape and insure safety to workman and passersby.

D. Temporary openings may be provided on all wall and column forms to limit the free fall of the concrete to less than 4 feet and should be so located as to facilitate the placing and consolidation of the concrete. The ports shall be spaced no more than 6 feet apart to limit the horizontal flow of concrete.

E. All forms shall be cleaned and rubbed smooth prior to placing to insure true forming surfaces for all concrete surfaces.

3.03 FORM TIES AND ACCESSORIES

A. Internal wall ties shall contain positive stops at the required wall thickness.

B. Accessories shall be used only for the purpose intended and shall in no way interfere with the placing of concrete. Removal of accessories shall in no way impair or disturb finish concrete surfaces. Accessories shall be compatible with formwork and ties and shall maintain the watertight integrity of the formwork system.

C. Design of all form ties and accessories shall be adequate for all concrete placement, horizontal and vertical, to prevent failures and blowouts.

3.04 FORM COATINGS

A. Coat form contact surfaces with form bond breaker compound before reinforcement is placed. Do not allow excess form coating material to accumulate in the forms or to come into contact with surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.

B. Coat steel forms with form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

C. Clean reinforcing steel that has become contaminated with form coating to the satisfaction of the Engineer prior to placing concrete.

3.05 EMBEDDED ITEMS

A. Items embedded in concrete shall be properly cleaned to be free from oil or foreign matter that would weaken the bond of the concrete to these items.

B. Install in the formwork requisite inserts, anchors, sleeves and other items specified under other sections of these specifications; close end conduits, piping and sleeves embedded in concrete with caps or plugs.

3.06 CONSTRUCTION JOINTS

A. Make construction joints where indicated on the contract drawings; additional construction joints are subject to prior approval of the Engineer.

B. Form keyways and joints as indicated on the contract drawings.

3.07 EXPANSION JOINTS

A. Expansion joints shall be placed where indicated on the contract drawings.

B. Joints between slabs on earth and vertical surfaces, including columns, piers, walls, machinery foundation and other fixed structures shall have expansion joint material placed on abutting vertical surfaces.

3.08 CONTROL JOINTS

A. Install vertical control joints as indicated on the contract drawings.

B. Install control (contraction) joints in slabs as indicated on the contract drawings.

3.09 FORM/SHORING REMOVAL

A. Arrange forms to allow stripping without removal of principal shores, where required to remain in place.

B. Removal of forms shall be accomplished in such a manner as will prevent injury to concrete and ensure complete safety of structure. Removal times listed below are minimum and may be increased by the Engineer as job conditions warrant.

1. Where structure as a whole is supported on shores, vertical forms such as beam and girder sides, columns, and similar vertical forms may be removed 24 hours after completion of pour, providing concrete has hardened sufficiently to sustain its own weight and to prevent injury.
2. Wall forms shall not be removed in less than 24 hours after pouring, unless otherwise required for curing.
3. Supporting forms and shoring must remain in place until concrete can carry any loads to be imposed upon it and in no case shall be removed in less than seven (7) days.
4. Forms ties, requiring any operation in removal of forms which would tend to destroy bond between tie and concrete in order to remove form, shall not be disturbed for seven (7) days after completion of pour.
5. The time periods stipulated above may be reduced if strength results of concrete so indicate adequate conditions.

C. Notify the Engineer before the forms are removed in order that an examination of the newly stripped surfaces may be made prior to patching.

3.10 EXPOSED SURFACES

A. Exposed surfaces shall be Carborundum rubbed to take off fins; fill pores, stone pickets, honeycombs, etc., with non-shrink grout as follows:

1. Repair immediately after form removal and inspection by the Engineer.
2. Remove concrete surrounding defect to sound concrete, then wet affected area.
3. Brush on bonding agent, mixed and applied in accordance with manufacturer's recommendations.
4. Consolidate patch grout and strike off to leave the patch slightly higher than the surrounding surface.

5. Finish the repaired area flush with the surrounding area after the patch has been in place for one hour, or as prescribed by the manufacturer.

B. Perform patching before curing compound is applied; cure patched areas in the same manner as adjacent concrete; make repairs uniform in color and finish with surrounding concrete.

C. Exposed surfaces shall be protected from excessive sun, wind and rain, and kept wet until curing compound is applied. When ambient temperature falls below 40ºF heat aggregate and mixing water; clear all forms, reinforcement and subgrade of snow and ice; cover all freshly placed concrete with tarpaulins and provide heat to maintain a temperature of 70ºF for at least three days or 50ºF for five days; rate of cooling after end of protection period shall be accomplished in a manner approved by the Engineer.

3.11 REUSE OF FORMS

A. Clean and repair surfaces of forms to be re-used in the work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact surfaces as specified for the new formwork.

B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets.

C. Do not use “patched” forms for concrete surfaces exposed to view.

END OF SECTION

SECTION 03 15 00

CONCRETE ACCESSORIES

PART 1 GENERAL

1.01 BUY AMERICA PREFERENCE

A. The Aviation Safety and Capacity Expansion Act of 1990 provides that preference be given to steel and manufactured products produced in the United States. All products provided as part of this project shall comply with these provisions. Reference Volume I, Segment I - Proposal Documents, Federal Requirements of the specification for the requirements.

B. Inclusion of a manufacturer or product in the specifications does not constitute compliance with Buy America requirements.

1.02 APPLICABLE PROVISIONS

A. Applicable provisions of Special Provision “General Requirements for Building Construction” - Section 01 shall govern work of this section.

1.03 DESCRIPTION OF WORK

A. The work under this section shall cover furnishing and installing concrete accessories as shown on the contract drawings and specified herein.

1.04 RELATED WORK ELSEWHERE

A. Cast-in-Place Concrete - Section 03

1.05 SUBMITTALS

A. Contractor shall submit such product literature and catalog cuts of materials to be supplied to the rate these materials to the specifications. Information shall be in conformance with requirements of Submittals - Special Provision “General Requirements for Building Construction” - Section 01 of these specifications.

PART 2 PRODUCTS AND MATERIALS

2.01 EXPANSION JOINT FILLER

A. Preformed bituminous expansion and contraction joint filler shall be preformed bituminous strips which complies with ASTM D994.

2.02 THERMAL ISOLATION JOINT MATERIAL

A. Rigid Insulation. ½ inch thick extruded polystyrene insulation, ASTM C578, Type X, 5-year aged R-value of 5.0 minimum at 75°F water absorption in accordance with ASTM C272 Of 0.1 percent by volume maximum, minimum 15 psi compressive strength.

B. Removable Plastic Expansion Joint Cap: Snap-Cap by W.R. Meadows.

2.03 VAPOR BARRIER

A. Under Slab Vapor Barrier: Shall comply with the minimum standards of ASTM E-1745 Class A and maintain a permeance of less than 0.01 Perms; Provide vapor retarder tape and pipe boots; The under slab vapor barrier shall be one of the following:
   1. Griffolyn Type-105 by Reef Industries.
   2. Stego Wrap Vapor Barrier 15 mil by Stego Industries.
   3. VaporBlock VB15 by Raven.
   4. Husky Yellow Guard 15 mil Vapor Barrier by Poly-America.

B. Seam Tape: High density polyethylene tape with pressure sensitive adhesive, minimum 4 inches wide. Tape or Mastic by vapor barrier manufacturer.

C. Pipe Boots:
   1. Premanufactured pre-cut pipe boots from vapor barrier manufacturer.
   2. Where premanufactured boots are not suitable, construct pipe boots from vapor barrier material and pressure sensitive tape per manufacturer's instructions.

2.04 CONCRETE REPAIR COMPOUND

A. Concrete repair for honeycomb areas shall be Master Builders MasterEmaco N 424 fast-setting cement-based repair mortar, or equal item from WisDOT Approved Products List, or equivalent product if pre-approved by the Engineer.

PART 3 EXECUTION

3.01 INSTALLATION

A. Expansion Joint Filler: Install at locations noted on the drawings calling for expansion joint materials.

B. Thermal Isolation Joint Material: Install at the inside perimeter of the exterior wall foundation between the foundation wall and the concrete slab on grade. Place the snap cap on top of the insulation.

C. Install accessories where shown on contract drawings and as specified herein.

D. Vapor Barrier: Install under-slab vapor barrier at locations shown on Drawings in accordance with manufacturer's instructions and ASTM E1643-98. Unroll vapor barrier with the longest dimension parallel with the direction of the pour. Turn up onto and seal to foundation walls. Overlap joints 6-inches and seal with manufacturer's tape. Seal all penetrations (including pipes) with manufacturer's pipe boot. No penetrations of the vapor barrier are allowed except for reinforcing and permanent utilities. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged area 6-inches and taping all four sides with tape.

E. Concrete Repair Compound: Repair mortar on honey comb areas shall first be applied with a stiff bristle brush to apply a scrub coat working the mortar into the honeycomb areas then use a trowel to completely fill the honeycomb areas and trowel smooth the mortar to flush it out with the face of the concrete.

END OF SECTION

SECTION 03 20 00
CONCRETE REINFORCING

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. The work under this section shall cover furnishing and installing concrete reinforcing as shown on the contract drawings and as specified herein.

1.02 Not Used.

1.03 APPLICABLE PROVISIONS

A. Applicable provisions of Special Provision “General Requirements for Building Construction” - Section 01 shall govern work of this section.

1.04 APPLICABLE PUBLICATIONS

A. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto.

1. American Concrete Institute (ACI) Specifications and Standards:
   a. ACI 315 - Manual of Standard Practice for Detailing Reinforced Concrete Structures, Current Edition.
   b. ACI 318 - Building Code Requirements for Structural Concrete and Commentary, Current Edition.
2. American Society for Testing and Materials (ASTM), Annual Book of ASTM Standards:
   a. ASTM A184 - Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement, Current Edition.
   b. ASTM A615 - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement, Current Edition.
   c. ASTM A706 – Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement, Current Edition.
   d. ASTM A775 – Standard Specification for Epoxy-Coated Steel Reinforcing Bars, Current Edition.
   e. ASTM A1064 - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plan and Deformed, for Concrete, Current Edition.
3. American Welding Society (AWS), Specifications and Standards:
   a. AWS D12.1 - Welding Reinforcing Steel, Metal Inserts, and Connections in Reinforced Concrete Construction, Current Edition.
4. American Association of State Highway Transportation Officials (AASHTO), Specifications and Standards:
   a. AASHTO M182 - Specification for Burlap Cloth Made from Jute or Kenaf, Current Edition
5. Concrete Reinforcing Steel Institute (CRSI) Specifications and Standards:
   a. CRSI - Manual of Standard Practice, Current Edition.
   b. CRSI - Recommended Practice for Placing Reinforcing Bars, Current Edition.
   c. CRSI - Recommended Practice for Placing Bar Supports, Specifications and Nomenclature, Current Edition.
   d. CRSI - Recommended Practice for Reinforcing Bar Splices, Current Edition.

1.05 RELATED WORK ELSEWHERE

A. Concrete Accessories - Section 03

B. Cast-in-Place Concrete - Section 03

1.06 SUBMITTALS

A. Contractor shall submit such product literature and catalog cuts of materials to be supplied to relate these materials to the specification. Information shall be in conformance with requirements of Submittals - Special Provision “General Requirements for Building Construction” - Section 01 of these specifications.
   1. Submit detailed reinforcing drawings prepared in accordance with ACI 315, including bar schedule with bar marks and bends indicated.
   2. Comply with CRSI Manual of Standard Practice showing bar schedules, stirrup spacing, diagrams of bent bars and arrangements of concrete reinforcement. Include special reinforcement required at openings through concrete.
   3. Verify dimensions and make proper allowance for fitting together work of other trades.
   4. Mechanically Locked Splicing Systems for Concrete Reinforcement Bars:
      a. Submit product data cut sheets with test reports.

B. Submit a certification attesting that reinforcing steel meets the requirements of ASTM A615, including Supplementary Requirements S1, and that welded steel wire reinforcement meets the requirements of ASTM A1064.
   1. Submit certified copies of mill reports, tensile and bend tests for reinforcing steel on projects where the quantity of reinforcing exceeds 15 tons.
   2. For information only, submit manufacturer’s data and instruction for proprietary items, including reinforcement and accessories.

PART 2 PRODUCTS AND MATERIALS

2.01 REINFORCEMENT

A. Steel Bar Reinforcement. Main reinforcing and stirrups; ASTM A615, Grade 60.

B. Welded Wire Reinforcement. Welded wire reinforcement (WWR), flat sheets, ASTM A1064, 6x6-W2.9xW2.9, unless otherwise specified or indicated on the contract drawings.

C. Steel Tie Wire. Steel tie wire, ASTM A1064, plain, cold-drawn, 16 gauge or heavier.

D. Supports For Reinforcement.
   1. Bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcement in place complying with CRSI Manual of Standard Practice.
   2. For slabs on grade use steel or plastic chairs to support rebar and WWR.
   3. Provide hot-dipped galvanized or plastic-coated accessories in contact with forms for sight exposed concrete; stainless steel accessories for sandblasted or bush hammered concrete.
   4. Concrete brick may be used to support rebar above grade in footings only, no other locations.
   5. Clay brick is not allowed.

PART 3 CONSTRUCTION METHODS

3.01 FABRICATION

A. Fabricate and place to shapes and dimensions indicated or required to carry out intent of contract drawings and these specifications.

B. Bends for stirrups and ties shall be made around a pin having a diameter not less than four times the diameter of reinforcing bar. Bends for other bars shall be made around a pin having a diameter not less than six times diameter of bar, except that for bars larger than 1 inch, pin shall be not less than eight times diameter of bar.
   1. Perform cutting and bending in the shop; bend and cut steel cold. Heating of reinforcement will not be permitted. Do not bend or straighten bars in a manner that will injure the material.
   2. Field bending of bars shall not be allowed without the Engineer’s approval.

C. Tagging shall be with metal, linen, or rope fiber tags filled in with machine or waterproof ink. Paper tags shall not be allowed.

D. Reinforcing bars shall conform accurately to the dimensions shown on the contract drawings.

3.02 PRODUCT DELIVERY, STORAGE AND HANDLING

A. For reinforcing steel fabricated on-site, shop from the mill in bundles, limited to one size and length, tagged with a waterproof tag showing the name of the mill, heat number, grade and size of the bars and identifying number.

B. For reinforcing steel fabricated off-site, deliver in bundles identified as to structure and shop drawing number. Identify each individual bar with a waterproof tag showing the grade, size and bar mark from the approved bar schedule.

C. Protect reinforcing steel and wire reinforcement from damage and from dirt, oil grease, other foreign matter, and rust-causing condition. Do not store reinforcement in direct contact with the ground.

3.03 CLEANING

A. Before placing and before pouring concrete, all reinforcement shall be thoroughly cleaned of all oil, dirt, loose mill scale, loose rust, or foreign matter that will destroy or reduce bond.

3.04 PLACING REINFORCEMENT

A. Placement.
1. Metal reinforcement shall be accurately placed and adequately secured in position.
2. Nails shall not be driven into forms to support reinforcement nor shall wire ties come in contact with forms.
3. Reinforcement in the footings shall be secured in place with rebar staked into the ground and the reinforcing tied to the rebar stakes.
4. Reinforcement in wall forms shall be tied to the formwork ties.

B. Splicing. Lap at splices shall be sufficient to transfer stress between bars by bond and shear.
1. Furnish reinforcing bars in full lengths as indicated on the contract drawings and approved Submittals.
2. Do not splice bars unless indicated on the contract drawings or approved by the Engineer in writing. When authorized, make splices in accordance with ACI 318.
3. Splices generally shall be avoided at points of maximum stress. Minimum splice lap for stressed bars shall be forty times bar diameter.

C. Offsets in longitudinal bars at change of cross section shall be placed in region of lateral support. Slope of inclined portion of offset shall not be more than one in six and, in tied columns, ties shall be spaced not over 3 inches on centers for a distance of 1 foot below actual point of offset.

D. Embedded Items. The Contractor shall provide for the installation of all items embedded in the concrete, such as coil rod inserts, anchor bolts, dowels, etc., as shown on the contract drawings or as provided for in other Sections of these specifications.
1. All dowel bars shall be tied securely in place before pouring concrete.
2. Provide for clearances with appurtenant materials and devices.

E. Drilled and Grouted or Epoxy Dowel Installation. Existing concrete which will be incorporated into new work and requiring integration with new concrete will be doweled as indicated on the contract drawings and as follows:
1. Drill hole in existing concrete of size that is 3/4 inch larger in diameter than diameter of dowel bar. Incline the hole in the concrete such that the non-shrink grouting or epoxy will be retained in the hole.
2. Clean hole of dust and debris using compressed air.
3. Fill hole with non-shrink grouting or epoxy.
4. Immediately place dowel bar into hole.
5. Allow grout or epoxy to take initial set before disturbing dowel bar.

F. Welded Wire Reinforcement (WWR). Reinforce as detailed on the contract drawings; and where not indicated, reinforce with welded wire reinforcement placed 2 inches from the top of the slab.

1. Flat sheets shall be used whenever available. Wire reinforcement shall lap 6 inches on side joints and 12 inches on end joints. Properly secure with annealed wire. Reinforcement shall be raised and secured in the correct location using permanent supports. Raising the reinforcement by hook during placement of concrete shall NOT be permitted.
2. Alternately, in tight quarters and around appurtenances and openings, lap reinforcement not less than one mesh space plus 2 inches, and tie.

G. Concrete Cover. The minimum cover of concrete for all reinforcement shall conform to the dimensions indicated on the contract drawings, which indicate the clear distance from the edge and end of the reinforcement to the face of the concrete surface. Provide clearance and spacing indicated on the contract drawings and approved Submittals, where so indicated.

1. Where no clearances are indicated, the thickness of the concrete cover over reinforcement shall be as follows:
    a. Concrete cast against and permanently exposed to earth - 3 inches;
    b. Formed concrete exposed to earth or weather - 2 inches;
    c. Formed concrete not exposed to earth or weather - 1-1/2 inches;
    d. Slabs not exposed to earth or weather - 1 inch.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 BUY AMERICA PREFERENCE

A. The Aviation Safety and Capacity Expansion Act of 1990 provides that preference be given to steel and manufactured products produced in the United States. All products provided as part of this project shall comply with these provisions. Reference Volume I, Segment I - Proposal Documents, Federal Requirements of the specification for the requirements.

1.02 APPLICABLE PROVISIONS

A. Applicable provisions of Special Provision “General Requirements for Building Construction” - Section 01 shall govern work of this section.

1.03 APPLICABLE PUBLICATIONS

A. The following publications of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto.

1. American Concrete Institute (ACI), Annual Book of ACI Standards:
   a. ACI 117/177R - Standard Specification for Tolerances for Concrete Construction and Materials and Commentary, Current Edition.
   b. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete, Current Edition.
   c. ACI 209.1R - Report on Factors Affecting Shrinkage and Creep of Hardened Concrete, Current Edition.
   d. ACI 301 - Specification for Structural Concrete, Current Edition.
   e. ACI 302.1R - Guide for Concrete Floor and Slab Construction, Current Edition.
   f. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete, Current Edition.
   g. ACI 305R - Hot Weather Concreting, Current Edition.
   h. ACI 306.1 (R2002) - Standard Specification for Cold Weather Concreting, Current Edition.
   i. ACI 308R - Guide to Curing Concrete, Current Edition.
   j. ACI 309R - Guide for Consolidation of Concrete, Current Edition.
   k. ACI 311.4R - Guide for Concrete Inspection, Current Edition.
   l. ACI 318/318R - Building Code Requirements for Structural Concrete and Commentary, Current Edition.
   m. ACI 530/530.1/530R/530.1R - Building Code Requirements for Commentary for Masonry Structures and Specification for Masonry Structures and Related Commentaries, Current Edition.
   n. ACI ASCC-1(05) - The Contractor’s Guide to Quality Concrete Construction, Third Edition.
   o. ACI CP-10/PACK - Craftsman Study Package for ACI Certification of Concrete Flatwork Technician/Finisher, Current Edition.
   p. ACI MCP06 - ACI Manual of Concrete Practice, Parts 1 through 6, and Index, 2006 Edition.
   q. ACI SCM-24 - Concrete Repair Basics, Current Edition.
   r. ACI SP4 - Formwork for Concrete, Current Edition.
   s. ACI SP15 - Field Reference Manual: Standard Specifications for Structural Concrete ACI 301 with Selected ACI Reference, Current Edition.
   t. ACI SP-71 - ASTM Standards in ACI 318, Current Edition.
2. American Society for Testing and Materials (ASTM), Annual Book of ASTM Standards:
   a. ASTM C33 - Standard Specification for Concrete Aggregates, Current Edition.
   b. ASTM C70 - Standard Test Method for Surface Moisture in Fine Aggregate, Current Edition.

c. ASTM C94 - Standard Specification for Ready-Mixed Concrete, Current Edition.
d. ASTM C109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (using 2-inch or [50 mm] Cube Specimens), Current Edition.
e. ASTM C125 - Standard Terminology Relating to Concrete and Concrete Aggregates, Current Edition.
f. ASTM C127 - Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate, Current Edition.
g. ASTM C128 - Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Fine Aggregate, Current Edition.
h. ASTM C131 - Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine, Current Edition.
i. ASTM C143 - Standard Test Method for Slump of Hydraulic-Cement Concrete, Current Edition.
j. ASTM C150 - Standard Specification for Portland Cement, Current Edition.
k. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete, Current Edition.
l. ASTM C191 - Standard Test Methods for Time Setting of Hydraulic Cement by Vicat Needle, Current Edition.
m. ASTM C219 - Standard Terminology Relating to Hydraulic Cement, Current Edition.
n. ASTM C226 - Standard Specification for Air-Entraining Additions for Use in the Manufacture of Air-Entraining Hydraulic Cement, Current Edition.
o. ASTM C233 - Standard Test Method for Air-Entraining Admixtures in Concrete, Current Edition.
p. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete, Current Edition.
q. ASTM C311 - Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for use as a Mineral Admixture in Portland-Cement Concrete, Current Edition.
r. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete, Current Edition.
s. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete, Current Edition.
t. ASTM C535 - Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine, Current Edition.
u. ASTM C566 - Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying, Current Edition.
v. ASTM C595 - Standard Specification for Blended Hydraulic Cement, Current Edition.
w. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzlan for Use in Concrete, Current Edition.
x. ASTM C688 - Standard Specification for Functional Additions for Use in Hydraulic Cements, Current Edition.
y. ASTM C989 - Standard Specification for Slag Cement for Use in Cement and Mortars, current edition.

3. Portland Cement Association (PCA) Standards and Specifications:
   a. PCA - Design and Control of Concrete Mixtures, Current Edition.

1.04 DESCRIPTION OF WORK

A. The work covered under this section shall cover furnishing all materials, equipment and labor required to construct all cast-in-place concrete as shown on the contract drawings and as specified.

1.05 RELATED WORK ELSEWHERE

A. Submittals - Special Provision “General Requirements for Building Construction” - Section 01

B. Concrete Quality Control - Section 03

C. Cast-in-Place Concrete - Section 03

D. Concrete Accessories - Section 03

E. Concrete Reinforcing - Section 03

1.06 SUBMITTALS

A. Submit such product literature and catalog cuts of materials to be supplied to relate these materials to the specification. Information shall be in conformance with requirements of Submittals - Special Provision “General Requirements for Building Construction” - Section 01 of these specifications.

B. Concrete Design Mix

1. Prior to the start of placing of concrete, submit the design mix for each class of concrete, indicating that the concrete constituents and proportions will result in a concrete mix meeting the physical requirements for each class of concrete specified. Submit with the design mix, laboratory test reports and manufacturer’s certificates attesting the conformance of constituents with these specifications.
2. Do not vary the proportions of the constituents or source of material of the approved mix without submitting corresponding test result documentation to the Engineer for review and approval.
3. Design mix shall indicate proportions of cement, aggregate and water, and names and proportions of admixtures and air-entraining agents.
4. Provide certification that the design mix complies with all ACI and ASTM requirements.

PART 2 PRODUCTS AND MATERIALS

2.01 CEMENT

A. Cement shall be Portland Cement ASTM C150 Type I or IA or Blended Hydraulic Cement ASTM C595 Type IL, except as otherwise noted or approved. Type III cement shall only be used for Class L concrete, or when approved by the Engineer.

B. A singular brand and manufacturer of cement shall be used for the entire work.

2.02 FLY ASH

A. Fly ash shall conform to ASTM C618 Class C.

B. A singular source of fly ash shall be used for the entire work.

2.03 SLAG

A. Slag shall be ground granulated blast furnace slag conforming to ASTM C989.

2.04 AGGREGATE

A. Aggregate shall consist of clean, hard durable sand, gravel, crushed gravel or crushed rock.

B. Aggregate shall conform to the requirements of ASTM C33. Fine and coarse aggregate shall meet ASTM C33 grading requirements. Coarse aggregates shall be graded in accordance with ASTM gradations as follows:

1. 3/4 inch maximum coarse aggregate - ASTM No. 67
2. 1-1/2 inch maximum coarse aggregate - ASTM No. 467

C. Maximum aggregate size shall be as defined in the Concrete Schedule, or where not defined in the Concrete Schedule, as defined by dimensional constraints for cast-in-place concrete as follows.
   1. Not larger than one-fifth of the narrowest dimension between sides of the forms;
   2. Not larger than one-third the thickness of the slab;
   3. Not larger than three-fourths of the minimum clear spacing between individual reinforcing bars or wire, bundles of bars, or prestressing tendons or ducts.

2.05 MIXING WATER

A. Mixing water shall be natural or treated water, clean and free from injurious amount of oil, acid, alkali, chlorides and sulfates, other common salts, organic matter or other deleterious substances.

B. Mixing water shall yield cement paste complying with the requirements ASTM C109 and ASTM C191.

2.06 ADMIXTURES

A. All admixtures are subject to the written approval of the Engineer and shall be used in strict accordance with the manufacturer's recommendations.
   1. Air-Entraining Admixture
      a. All concrete exposed to weather and freeze-thaw cycles shall be air-entrained, unless otherwise specified.
      b. Air-Entraining admixture shall conform to ASTM C260.
      c. Air-Entrainment shall be as indicated for each class as in the Concrete Schedule.
   2. Water-Reducing, Set-Controlling Admixtures
      a. Water-Reducing, Set-Controlling admixtures shall conform to ASTM C494, Type A for water-reducing, Type C for accelerating, Type D for water-reducing and retarding, and Type E for water-reducing and accelerating.

B. Admixtures containing calcium chloride or soluble chloride shall not be used.

2.07 SYNTHETIC FIBER REINFORCEMENT

A. Manufacturer:
   1. The FORTA Corporation, 100 Forta Drive, Grove City, PA, 800.245.036, www.forta-ferro.com.

B. Product: FORTA-FERRO
   1. Fiber lengths are greater than 2.0 inches.
   2. Before mixing, fibers are collated by twisting with an initial bundle aspect ratio less than 20.
   3. Pre-mixing, macro monofilament fibers are bundled and have an aspect ratio of 80.
   4. Post mixing, fibers are dispersed and have an aspect ratio of 80 or greater.
   5. Fibers are made of copolymer virgin materials that are inert.
   6. Fibers are sized to be flexible and not stiff to ensure fibers 'lay down' and are easy to finish.

C. Fiber Dosage: Add fiber reinforcement at these dosages:
   1. Dosage 7.50 lbs/cy; best benefits to reduce cracking from tension, curling and fatigue.

D. Batching and Mixing
   1. After all or a portion of the concrete has been loaded into the truck or mixer, add fiber reinforcement by mixer ready dispersible bags at the prescribed dosage with the drum turning.
   2. After fibers have been added, add water-reducing admixture (polycarboxylate superplasticizer).

3. Follow ACI procedures to mix 5 minutes once all ingredients are in the drum.

2.08 CURING AND SEALING COMPOUND - INTERIOR

A. Membrane-forming curing compound shall meet the moisture retention requirements of ASTM C309, Type 1. Kure-N-Seal, Sonneborn Division of BASF; Sealtight CS-309-25, W.R. Meadows, Inc.; Aqua-Cure VOX, Euclid Chemical Co., Pro-Spec Cure and Seal WB;; or equal approved by Engineer.

B. Shall be compatible with surface finish.

2.09 CURING COMPOUND - EXTERIOR

A. Curing compound shall comply with ASTM C309, Type 2; resin, white pigmented.

PART 3 EXECUTION

3.01 COORDINATION

A. Examine the drawings and specifications for work of other sections or other contractors and coordinate such work with the requirements of this Section; make provisions for installation of such items as sleeves, pipes, conduits, inserts and hangers in a manner that will not impair or weaken concrete construction.

3.02 READI-MIX CONCRETE

A. Acceptability and Use. Readi-mix concrete shall be designed on the basis of strength, durability, impermeability, and exposure condition, as required for the intended use of the structure by methods specified in ACI 211.1 and ACI 318. All readi-mix concrete shall comply with the water-cement ratio for each specific class of concrete as specified in the Concrete Schedule. Concrete design mix, complete with sample test results shall be submitted to the Engineer for approval prior to placing any concrete.
1. Failure to Meet Strength Requirements. Failure to meet strength requirements shall be as defined in Concrete Quality Control- Special Provision “General Requirements for Building Construction” - Section 01 of these specifications.

B. Mix Proportioning. Mix proportioning shall be the responsibility of the Contractor and shall be submitted for review and approval by the Engineer, in accordance with these specifications.
1. Select proportions for concrete to obtain the quality requirements for the class of concrete as specified in the Concrete Schedule. Contractor, at their expense, shall have an approved independent laboratory prepare design mixes for each specified concrete class.
2. Slump. Slump for class of concrete shall be as specified in the Concrete Schedule. The Contractor shall at their expense, make field slump tests in accordance with ASTM C143 and Concrete Quality Control-Section 03 of these specifications.
3. Adjustment to Concrete Mixes. Design mix adjustments may be requested by the Contractor when characteristics of materials, conditions, weather, test results, or other circumstances warrant. Laboratory test data for revised design mixes and strength results shall be submitted and approved before using in the work. No change in contract price will be allowed for these changes.
4. Addition of Water to the Batch. Addition of water to the batch delivered to the site shall be in strict accordance with ASTM C94. This shall be the Contractor’s responsibility and by their direction, following consultation with the Engineer.
   a. Addition of water to the batch shall be one time only. Total gallons of water added to the batch shall be recorded on the load ticket, which shall be supplied to the Engineer prior to that delivery truck leaving the site. If water is permitted to be added to mixed concrete upon arrival at the job, an additional mixing of 30 revolutions of the drum shall be required.
   b. Contractor shall adjust the water-cement ratio of the batch to the corresponding value based on the addition of water to the batch and shall

submit this information to the Engineer with adjusted strength data for the final batch proportion.

c. At no time shall the addition of water cause the water-cement ratio specified in the concrete class schedule to be exceeded.

3.03 GENERAL

A. Unless otherwise specified, conform to ACI 304, 305, and 306 for concrete installation requirements such as preparation, mixing, conveying, depositing, curing, and cold and hot weather requirements; consolidate concrete in accordance with ACI 309.

B. Concrete not placed within 90 minutes or 300 revolutions, whichever occurs first, after the first mixing of the cement and aggregates will be rejected.

C. Contractor shall indicate on record set of Drawings at site, for review prior to installation, a pouring program for concrete work showing unit of operation, method of pouring, installation of construction/control joints, expansion joints and all necessary work.

D. Proper grade marker or stakes shall be used by Contractor to establish grades for ramps, platforms, sidewalks, slopes to drains, inlets, etc.

E. Trenches, forms, conveying equipment shall be prepared to receive concrete in accordance with ACI 304.

F. Place concrete footings upon undistributed clean surfaces, free from frost, ice, mud and water; when foundation is on dry soil or pervious material, lay waterproof sheathing paper over earth surfaces to receive concrete.

G. Rock surfaces upon which concrete is to be placed, make level, clean, free from all objectionable coatings, water, mud, debris, loose semi-detached or unsound fragments; level surfaces to receive sand cushion placed to minimum thickness of 2 inches.

H. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperature and mechanical injury; maintain with minimum moisture loss and relatively constant temperature for the period necessary for hydration of the cement and hardening of the concrete.

I. All freshly cast concrete shall be protected from damaging effects of the elements freezing, rapid drop in temperature and loss of moisture and from future construction operations.

3.04 PREPARATION OF EQUIPMENT AND PLACE OF DEPOSIT

A. Before placement, clean equipment for mixing and transporting the concrete; remove debris and ice from all surfaces upon which concrete is placed; clean reinforcement of dirt, loose rust, and mill scale, or other coatings.

B. Remove water from all areas before depositing concrete; before depositing new concrete on or against concrete that has set, thoroughly roughen; clean existing surfaces of laitance, foreign matter or loose particles; retighten forms; slush existing surfaces with neat cement grout coat; place new concrete before grout has attained initial set; give horizontal construction joints grout brush coat of cement, fine aggregate, in same proportions as concrete to be placed.

C. Thoroughly wet the stone base on which slabs are to be placed where no vapor barrier is indicated.

D. Check compaction of fill and proper grade for slabs-on-grade. Check screeds and exercise care to prevent disturbing screeds during placement.

E. Remove debris, excess form oil, and water from formwork; avoid washing newly deposited concrete.

3.05 MIXING

A. Ready-mixed concrete shall be mixed and delivered in accordance with ASTM C94 and ACI 304. The production facilities shall comply with the requirements of the National Ready Mixed Concrete Association Certification Plan as regards materials storage and handling, batching equipment, central mixer, truck mixers, agitators, non-agitating units, ticketing system, etc.

B. Do not over-mix; do not use concrete which is retained in mixers so long as to require additional water in excess of design mix water to permit satisfactory placing; retempering of mix is not permitted.

C. Concrete shall be delivered to the site of the work and the mixed concrete discharged completely within 1-1/2 hours after water has been added to cement. In hot weather, or under conditions contributing to quick stiffening of concrete, this time may be reduced by the Engineer.

D. Concrete delivered shall arrive at the site having a temperature not less than 50 Degrees F nor greater than 85 Degrees F, unless otherwise permitted by the Engineer.

3.06 CONVEYING

A. Convey concrete from the mixer to the final deposit by methods that will prevent segregation or loss of materials.

B. Use of aluminum conveyances is not permitted.

3.07 CONCRETE PLACEMENT

A. Place concrete, including drops greater than 60 inches using recommended practices in accordance with ACI 304 and ACI 318. Once pouring operation commences, it shall be carried out as a continuous operation until a section is completed.

B. Deposit concrete as nearly as practical in its final position to avoid segregation due to rehandling or flowing; do not use vibrators to move concrete horizontally within the forms.

C. Do not use retempered concrete or concrete contaminated by foreign material.

D. Plan and conduct concrete placement to ensure that the concrete is kept plastic and that the concrete is free of cold joints.

E. Where there is a time delay greater than 45-minutes between adjacent concrete placement, a bulkhead construction joint, complete with waterstops where required, must be installed.

F. Do not commence placing when the sun, heat, wind or limitations of facilities provided prevent proper finishing or curing.

G. Discontinue concreting when the descending natural air temperature falls lower than 40 Degrees Fahrenheit unless preparations are made and in place to heat or insulate concrete in accordance with the cold weather concreting requirements of this specification.

H. Concrete for walls shall be deposited in approximately horizontal layers not to exceed 18 inches in height to avoid segregation due to rehandling and flowing.

I. Concrete shall not be placed or poured in water. Excess water shall not be permitted. Powdering a mixture of cement to absorb excess water shall not be permitted.

J. Concrete shall be placed before initial set has occurred. Placing should be carried on in such manner that the concrete in the form is still plastic and can be integrated with fresh concrete.

K. Contractor shall notify Engineer of concrete pouring schedule one day in advance of pour to allow for inspection of reinforcing and forms.

L. Bottom dump buckets may be used for transporting mixed concrete to the desired location. Particular care shall be taken to avoid jarring or bumping as this may cause segregation.

M. Where chutes are used to transport concrete, they shall be of metal or wood with metal lining and should have a slope not exceeding 1 vertical to 2 horizontal and not less than 1 vertical to 3 horizontal so that the concrete will travel fast enough to keep the chute clean but slow enough to avoid segregation of materials. The end of each chute shall be provided with a baffle to help prevent segregation, or the concrete should be discharged through a tremie or elephant trunk directly into the form.

N. Elephant trunks and/or tremies shall be used in walls and columns to prevent free fall of the concrete and to allow the concrete to be placed through the cage of reinforcing steel.

O. Pumping equipment shall be of suitable type, without Y-sections, and with adequate pumping capacity. Loss of slump in pumping shall not exceed 1-1/2 inches.

3.08 CONSOLIDATION

A. Each concrete layer placed shall be compacted by mechanical internal vibrating equipment supplemented by hand spading, rodding, or tamping.

B. The period of concrete vibration shall not be less than two seconds nor more than five seconds at any one point.

C. Consolidate concrete thoroughly as it is placed in order to secure a dense mass; work concrete well around the reinforcement and embedded items and into the corners of the forms.

D. Use internal vibrators inserted vertically over the entire area of the placement; form vibrators not permitted; internal vibrators shall maintain a minimum of 5000 impulses when submerged in concrete.

E. Vibrate until voids are eliminated, coarse aggregate is suspended in mortar, and entrapped air bubbles begin to rise to the surface; concrete should move back into the space vacated by the vibrator; vibration duration shall be limited only to the time necessary to produce consolidation without causing segregation.

F. Space vibrator insertions such that the area visibly affected by the vibrator overlaps the adjacent just-vibrated area by a few inches.

G. Penetrate at least 6 inches into previously placed layers in order to bond between layers and avoid cold joints.

H. Take care not to over-vibrate air entrained concrete; place vibrator to eliminate honeycombing but avoid excess vibrating that bleeds all entrapped air from the mix.

I. Do not use vibrators to transport concrete.

3.09 JOINTS AND KEYWAYS

A. Construct expansion, control, and isolation joints and keyways only where indicated on the drawings.

B. Where the placing of concrete is discontinued, clean off laitance and other objectionable material to a sufficient depth to expose sound concrete as soon as concrete is firm enough to retain its form; smooth the top surface of concrete adjacent to the forms with a trowel to minimize visible joints on exposed faces.

C. Immediately upon completion of the work of placing concrete, remove accumulations splashed upon the reinforcement and the surfaces of the forms; perform this removal before concrete takes its initial set; clean reinforcing steel carefully to prevent damage to the concrete steel bond.

D. Do not halt work within 18 inches of the top of any face.

E. For bonded horizontal joint construction, roughen the surface and expose the aggregate; clean the surface thoroughly by wet sandblasting, by cutting with high-pressure water jet or by other approved methods; perform cleaning after the concrete has hardened to prevent raveling of the surface below the desired depth.

F. Before bonding concrete is placed, clean the surface of loose or soft particles or other objectionable materials and keep wet for a minimum period of 12 hours.

G. Cover the cleaned and saturated surface with a coating of neat cement grout and deposit new concrete before the grout has attained its initial set.

3.10 CURING

A. Use a curing compound on all flat work.

B. For exposed slabs with fiber mesh, before applying the curing compound, the exposed fibers shall be melted or burned off with a heat source.

C. Slabs: Immediately following slab finishing, apply liquid membrane-forming curing compound before the surface becomes dry.

D. Vertical Surfaces: When the forms are removed entirely, spray the surface with water and allow it to reach a uniformly damp appearance with no free water on the surface; apply curing compound or begin water curing.

E. For curing concrete under hot weather conditions, see Hot Weather Requirements in this section.

F. For curing concrete under cold weather conditions, see Cold Weather Requirements in this section.

3.11 CONCRETE WALL FINISHES

A. Complete screeding and darbying of top of walls before excess moisture or bleeding water is present on the surface.

B. Do not begin subsequent finishing operations until surface water has disappeared.

C. Refer to Concrete Schedule, included in this specification section, for finish type at each location, defined as follows:
   1. Rough Form Finish: (Type W1)
      a. No form facing materials specified.
      b. Patch tie holes and defects.
      c. Chip off fins 1/4 inch or more in height.
   2. Smooth Form Finish: (Type W2)
      a. Use a form facing material that will produce a smooth, hard, uniform texture on the concrete.
      b. Keep seams to a practical minimum.
      c. Patch tie holes and defects.
      d. Remove all fins.
   3. Smooth Rubbed Finish: (Type W3)
      a. Produce a Smooth Form Finish.
      b. Wet surface and rub with a Carborundum brick until uniform color and texture are produced.
      c. Perform rubbing no later than 24 hours after forms are removed.

d. Do not use any cement grout other than the paste drawn from the concrete itself by rubbing.
e. Thoroughly wash the surface with water.

4. Smooth Troweled Finish: (Type W4)
   a. Produce a Smooth Rubbed Finish.
   b. After wet-rubbing, finish with a steel trowel to increase compaction of fines and to provide maximum density.
5. Smooth Finish (Grout Cleaned): (Type W5)
   a. Use for architectural surfaces exposed to general view, unless other indicated.
   b. Mix 1 part portland cement and 1-1/2 parts fine sand with sufficient water to produce grout having consistency of thick paint; use white portland cement in combination with normal portland cement to achieve uniform surface color after drying.
   c. Wet surface of concrete and uniformly apply grout with brush or spray gun completely filling air bubbles; surface with a wood float scouring wall vigorously.
   d. Allow grout to partially set for one to two hours, depending on weather conditions; in hot dry weather, keep damp, using fine fog spray.
   e. When grout has hardened sufficiently to be scraped from wall with edge of steel trowel without removing grout from small air holes, cut off all grout that can be removed with trowel.
   f. Allow surface to dry thoroughly then rub vigorously with dry burlap to completely remove dried grout; there shall be no visible film or grout remaining after this rubbing.
   g. The entire cleaning operation for any area must be completed the day it is started; no grout shall be left on overnight, and sufficient time shall be allowed for grout to dry after it has been cut with trowel so it can be wiped off clean with burlap.
   h. After entire surface has been grout cleaned, wipe off any slightly dark spots or streaks with fine abrasive hone.

3.12 CONCRETE SLAB FINISHING

A. Complete screeding and darbying slabs before excess moisture or bleeding water is present on the surface.

B. Do not begin subsequent finishing operations until surface water has disappeared and the concrete will sustain foot pressure with only approximately 1/4 inch indentation.

C. Refer to Concrete Schedule, included in this specification section, for finish type at each location, defined as follows:
1. Smooth Float Finish: (Type S1)
   a. Consolidate concrete with a power-driven disc-type float or a combination floating-troweling machine with metal float shoes attached.
   b. Machines which have a water attachment for wetting the concrete during the finishing operation are prohibited.
   c. Check and level surface plane to a tolerance not exceeding 1/4 inch in 10 feet when tested with a 10-foot straightedge. Cut down high spots and fill low spots; immediately after re-leveling, refloat surface to a uniform, smooth, granular texture.
   d. Where slab drainage is indicated, take care to maintain accurate slopes for drainage.
2. Steel Troweled Finish: (Type S2)
   a. Produce a dense, smooth, non-slip and hard steel troweled surface. Comply with ACI 302.1R, paragraph 8.3.11.
   b. The floor shall meet ACI Class 5 minimum requirements.
   c. Appearance: Ridges, trowel marks, bumps, pits, splatter or other imperfections in the surface of the concrete floor are not allowed. The floor appearance shall be uniform over the entire surface.
   d. Floor flatness and levelness shall comply with the following ACI117 4.3, 4.4, and 4.5 and 302.1R 8.15 requirements as follows:

1) $F_F = 35$
2) $F_L = 25$

3. Integral Finishes: (Type S3)
   a. Use for slabs where some material other than concrete will be the final wearing surface.
   b. Screeded Finish - Place screed blocks at frequent intervals and strike off to surface elevations desired; unless otherwise indicated, use on base slabs upon which grout finish, regular mortar bed ceramic tile, sand cushion terrazzo or similar type wearing surface is applied.
4. Broom Finish: (Type S4)
   a. Draw stiff broom over previous Smooth Float Finish, to obtain non-slip finish.
5. Abrasive Aggregate Non-slip Finish: (Type S5)
   a. Screed and float concrete to the required finish level with no coarse aggregate visible.
   b. Uniformly sprinkle abrasive aggregate over the floated surface at a rate of not less than 1/4-pound per square foot.
   c. Steel trowel surface to a smooth even finish, uniform in texture and appearance and free from blemishes, including trowel marks.
   d. Immediately after curing remove cement coating covering the abrasive aggregate by steel brushing, rubbing with an abrasive stone or sandblasting to expose abrasive particles.
6. Hardener Floor Treatment: (Type S6)
   a. Hardener shall be installed in strict accordance with manufacturer's printed instructions; experienced workmen shall apply hardener at a minimum of 45 pounds per 100 square feet.

3.13 PERIMETER INSULATION

A. Install perimeter insulation at building foundation wall and under floor slab as shown on the contract drawings.

3.14 HOT WEATHER REQUIREMENTS

A. Comply with ACI 305R unless otherwise specified herein below.

B. Hot weather conditions are deemed to exist when the temperature in the forms is 75 Degrees Fahrenheit or above, or a combination of high air temperature, low relative humidity and wind velocity impair the quality of fresh or hardened concrete; take protective measures for mixing, transporting and placing concrete in accordance with ACI 305R.

C. The temperature of the concrete at the place of discharge may not exceed 85 Degrees Fahrenheit.
   1. If ice is used to lower temperature, place crushed, shaved or chipped ice directly into the mixer as part or all of the mixing water; mix until ice is completely melted.
   2. Record the concrete temperature at the time of discharge.

D. Do not add water that will cause the proportions to exceed the maximum water-cement ratio shown in Table I.
   1. Notify the Engineer before adding any water to the concrete mix.
   2. Record the amount of water added to the concrete at the jobsite.

E. Discharge concrete within 45 minutes or 100 revolutions, whichever occurs first, after the first mixing of cement and aggregates.

F. Placing and Curing:
   1. Place concrete promptly upon arrival.
   2. Provide at least one standby vibrator for each 3 vibrators in use.
   3. Protect concrete from direct sunlight; keep forms covered and moist by means of water sprinkling or the application of continuously wetted burlap or cotton mats for a minimum of 24 hours. Windbreaks and/or sunshades shall be provided as directed by the Engineer.

4. When forms are removed, provide wet cover to the newly exposed surfaces to avoid exposure to hot sun and wind.
5. Continue specified water curing methods for 10 days; leave covering in place 4 additional days; do not permit alternate wetting and drying cycles.
6. For slabs on grade, beam and deck concrete, and other horizontal placements protect the surface between finishing operations using one or more of the following methods:
    a. Careful use of a fog nozzle.
    b. Spreading and removing polyethylene sheeting between finishing operations.
    c. Application of mono-molecular film after the strike-off.

G. During extremes in weather, floor slabs shall not be cast unless the slab is protected by a roof and other suitable protective measures are provided. After curing has been completed, the floor shall be exposed to the air for 48 hours prior to allowing traffic on the floors.

3.15 COLD WEATHER REQUIREMENTS

A. Comply with ACI 306.1 (R2002) unless otherwise specified herein below.

B. Cold weather is defined any time when the daily temperature is 40 Degrees Fahrenheit or lower during placement and the protection period. If at any time during the progress of the work, the temperature drops below 40 Degrees F., the Contractor shall make suitable provisions to protect the concrete by use of insulation materials such as blankets, mats, etc., and equipment for providing artificial heat.

C. Combustion type temporary heating devices shall be vented outside of any temporary enclosure and building envelope. Combustion gases shall not be allowed in any temporary enclosure and building envelope.

D. Protect concrete surfaces from freezing for at least 24 hours after placement.

E. All surfaces in contact with newly-placed concrete including formwork, reinforcement and subgrade must be above 35 Degrees Fahrenheit.

F. Use preparation methods capable of producing concrete with a temperature not more than 85 Degrees Fahrenheit, and not less than 55 Degrees Fahrenheit, at the time of placement.

G. Do not heat concrete ingredients to a temperature higher than that necessary to keep the temperature of the mixed concrete, as placed, within the specified temperatures. (Do not heat water in excess of 140 Degrees Fahrenheit.)

H. Concrete shall have a temperature of not less than 55 Degrees Fahrenheit when placed; mix concrete at a temperature between:
1. 60 Degrees Fahrenheit and 70 Degrees Fahrenheit when outside air temperature is above 30 Degrees Fahrenheit.
2. 65 Degrees Fahrenheit and 75 Degrees Fahrenheit when outside air temperature is between 0 Degrees Fahrenheit and 30 Degrees Fahrenheit.
3. 70 Degrees Fahrenheit and 80 Degrees Fahrenheit when outside air temperature is below 0 Degrees Fahrenheit.

I. Follow concrete placement with tarpaulins or other readily movable coverings, so only a few feet of concrete is exposed to the outside air at any time.

J. Maintain the temperature and moisture conditions specified in all parts of the newly placed concrete by covering, insulating, housing or heating; arrange for protection methods in advance of placement.

K. Maintain concrete at a temperature of not less than 55 Degrees Fahrenheit nor more than 70 Degrees Fahrenheit for a period of 3 days after placement.

L. A thermometer accurate to plus or minus 2 Degrees F shall be placed under the curing blanket. Additional insulation shall be supplied as required to maintain the temperature above 55 Degrees F.

M. After the curing period, the temperature of the exposed surface shall not be permitted to drop faster than 30 Degrees F in 24 hours.

N. Do not remove forms during the initial protection period.

O. Protect insulation against wetting that will impair its insulating value using moisture-proof cover material; keep insulation in close contact with concrete.

P. Construct enclosure to withstand wind and snow loads and be reasonably airtight; provide sufficient space between the concrete and enclosure to permit free circulation of heated air.

Q. Use vented heaters; do not permit heaters to heat or dry concrete locally. Unvented salamanders or other heaters which produce carbon dioxide as by-products shall not be permitted within enclosures or inside buildings. If heaters are used, precautions shall be taken to prevent drying of the slab through the use of water jackets or other suitable methods.

R. Maintain relative humidity above 40% within heated enclosures before construction supports are removed.

S. Monitor temperature to ensure concrete is kept within specified limits recording time and concrete temperature every 8 hours.

T. Assure concrete has developed necessary strength before removing forms; provide additional test cylinders with the same protection as the structure they represent to verify concrete strength before construction supports are removed.

U. If water curing is used, terminate at least 12-hours before end of temperature protection period. Permit concrete to dry.

V. After the required protection period gradually reduce the concrete temperature within an enclosure or insulation at a rate not to exceed 20 Degrees Fahrenheit per day until the outside temperature has been reached.

W. Apply membrane forming curing compound to concrete surfaces during the first period of above-freezing temperatures after forms are stripped and before air temperature rises to 50 Degrees Fahrenheit; apply membrane forming curing compound to slabs as soon as finishing operations are completed, except where live steam curing is used.

3.16 DELIVERY TICKETS

A. With each load of concrete delivered to the job there shall be furnished by the ready-mixed concrete producer delivery tickets for the Contractor. Delivery tickets shall provide the following information:

1. Date and serial number of ticket;
2. Name of ready-mixed concrete plant;
3. Job location;
4. Contractor;
5. Type and brand name of cement;
6. Mix number or specified cement content in bags per cubic yard of concrete;
7. Truck number;
8. Time dispatched stamped by a time clock;
9. Amount of concrete in load in cubic yards;
10. Admixtures in concrete, if any;
11. Maximum size of aggregate;
12. Water added at job, if any;
13. Slump of concrete ordered

TABLE 1

CONCRETE CLASS SCHEDULE

Parameter Value	Compressive Strength (PSI) 28-Day	Water-Cement Ratio Maximum	Air Content Range (%) Minimum-Maximum	Slump Range (Inches) Minimum-Maximum	Coarse Aggregate (Inches) Maximum
Class A	4,000	0.5	1 to 2	2 to 4	3/4
Class B	4,000	0.5	1 to 2	2 to 4	1-1/2
Class C	4,000	0.5	5 to 7	2 to 4	3/4
Class D	4,000	0.5	4 to 6	2 to 4	1-1/2

TABLE 2

CONCRETE SCHEDULE

USES AND PROPERTIES

Use	**Finish**	**Class and Considerations**
Footings	W1	Class A or B
Foundation Walls	W2 S1 on top of the wall	Class A or B
Exterior Flat Work, Curbs	S4	Class C or D
Interior Floor Slabs	S2	Class A or B
Metal Stair Treads	S2	Class A or B

Note: Provide fibers in the concrete mix being used for Interior floor slabs and exterior flat work. Reference paragraph 2.07 of this section for the quantity to use.

END OF SECTION

SECTION 03 30 01

CONCRETE QUALITY CONTROL

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. The work under this section shall cover sampling and testing of concrete to determine the materials conformance and work conformance to the requirements specified for cast-in-place concrete.

PART 2 PRODUCTS AND MATERIALS (N/A)

PART 3 EXECUTION

3.01 TESTING FOR ACCEPTANCE

A. Samples of concrete shall be delivered to a location on the site where material conformance tests can be performed.
   1. Samples of concrete shall be obtained in accordance with ASTM C172.
   2. Test specimens shall be stored without being disturbed for the first 24 hours.
   3. An independent testing laboratory, hired and paid for by the Contractor, shall conduct tests on the proposed concrete mixture to determine the slump, entrained air content, and compressive strength. Supply the standard equipment and molds necessary, and the transport the test specimens to the testing laboratory.

B. Slump and Air Content Tests
   1. Slump tests shall be made in accordance with ASTM C143.
   2. Air content tests shall be made in accordance with ASTM C173 or ASTM C231.
   3. Slump tests and air tests shall always be performed from the same batch from which strength tests are performed.
   4. If the measured slump or air content falls outside the limits specified, a check test shall be made immediately on another portion of the same sample. In the event of a second failure, the concrete shall be considered to have failed to meet the requirements of the specifications and shall not be used in the work.

C. Strength Tests: Results from tests conducted by the Contractor shall be considered evidence of compliance of Contractor's materials used in the work, when strength is used as the basis for acceptance.
   1. Cylinders for strength tests shall be made in accordance with ASTM C31. During the first 24 hours all test specimens shall be covered and kept at air temperatures between 60 Degrees Fahrenheit and 80 Degrees Fahrenheit in facilities provided on the job site by the Contractor. At the end of 24 hours, specimens will be carefully transported by the Contractor to the testing laboratory, where molds shall be removed, and cylinders shall be cured in a moist condition at 73.4 Degrees Fahrenheit ±3.0 Degrees Fahrenheit until time of test.
   2. A strength test for any class of concrete shall consist of four standard cylinders made from a composite sample secured from a single load of concrete in accordance with ASTM C172, with one cylinder tested at 7 days, two at 28 days, and the fourth used as a spare. The test results at 28 days shall be the average of the strength of two specimens determined in accordance with ASTM C39, except that if one specimen in a test shows manifest evidence of improper sampling, molding or testing, it shall be disregarded and the spare cylinder shall be tested.

3.02 SELECTION OF TESTING LABORATORY

A. An independent testing laboratory to perform Concrete Quality Control shall meet the requirements of ASTM E329.

B. The laboratory shall be selected by the Contractor and approved by the Engineer.

3.03 TEST REPORTS

A. Test reports shall be a PDF emailed to the Engineer.

3.04 TESTING REQUIREMENTS

A. The Contractor shall be required to perform one test for each 100 cubic yards of concrete poured, or fraction thereof, for each class of concrete used. Each test shall consist of four (4) cylinders; one (1) to be tested at seven (7) days, two (2) to be tested at twenty-eight (28) days, and one (1) to be a spare.

B. Compliance testing shall be performed on every single load, or portion thereof, where water addition to the single load, or portion thereof, takes place on site.

C. A minimum of one (1) test shall be performed per day for each class of concrete placed.

D. The testing company shall perform a minimum of one test footings, one test for foundations walls and one test for floor slab concrete.

E. Each test shall consist of four (4) cylinders; one (1) to be tested at seven (7) days, two (2) to be tested at twenty-eight (28) days, and one (1) to be a spare.

3.05 CONDITIONS OF COMPLIANCE AND NON-COMPLIANCE

A. Compliance of Contractor's Materials Used in the Work.
   1. To conform to the requirements of this specification, every 28-day test representing each mix must be equal to or greater than the specified minimum strength without exception. If a specimen shows manifest evidence of improper sampling, molding, or testing, it will be disregarded. Note, however, that the anticipated strength for all mixes is appreciably above the specified minimum strength due to quality required by the water-cement ratio specified.

B. Non-Compliance of Contractor's Materials Used in the Work
   1. When strength is used as the basis for acceptance, should individual tests of the Contractor's specimens produce strengths less than 90% of the specified strength (f'c), tests of cores drilled from the area in question may be required in accordance with ASTM C42. Three cores shall be taken for each cylinder test less than 90% of the specified strength (f'c). If the concrete in the structure will be dry under service conditions, the cores shall be air dried (temperature 60 to 80°F, relative humidity less than 60 percent) for seven (7) days before test and shall be tested dry. If the concrete in the structure will be more than superficially wet under service conditions, the cores shall be immersed in water for at least 48 hours and tested wet.
   2. Concrete represented by the core tests will be considered structurally adequate and meet the requirements of this specification if the average of the three cores is equal to at least 95 percent of the specified strength (f'c) and if no single core is less than 90 percent of f'c. To check testing accuracy, locations represented by erratic core strengths may be retested. If these strength acceptance criteria are not met by the core tests, the Engineer shall order appropriate action at no additional cost to the Owner.

END OF SECTION

SECTION 05 50 00
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated metal items.

B. Shop finishing.

1.02 RELATED SECTIONS

A. Section 03 30 00 - Cast-In-Place Concrete: Execution requirements for embedded anchors and attachments for metal fabrications specified by this section in concrete.

B. Section 06 10 00 - Rough Carpentry: Execution requirements for embedded anchors and attachments for metal fabrications specified by this section.

1.03 REFERENCES

A. American National Standards Institute (ANSI):
   1. ANSI A14.3 - Ladders, Fixed, Safety Requirements.

B. American Society of Testing and Materials (ASTM) International:
   1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
   2. ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
   3. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
   4. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   5. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.
   6. ASTM A307 - Standard Specification for Carbon Steel Bots, Studs, and Threaded Rod 60,000 PSI Tensile Strength.
   7. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
   8. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.
   9. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
   10. ASTM B177 - Standard Specification for Chromium Electroplating.

C. American Welding Society (AWS):
   1. AWS A2.4 - Symbols for Welding, Brazing, and Nondestructive Examination.
   2. AWS D1.1 - Structural Welding Codes.

D. Association for Materials Protection and Performance (AMPP):
   1. AMPP Painting Manual

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable. Indicate welded constructions using standard AWS A2.0 welding symbols. Indicate net weld lengths.

C. Welders Certificates: Certify welder employed on the work, verifying AWS qualification within previous 12 months.

1.05 QUALIFICATIONS

A. Fabricator: Company specializing in performing the work of this Section with minimum three (3) years documented experience.

B. Erector: Company specializing in performing the work of this Section with minimum three (3) years documented experience.

C. Design under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the state of the project location.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Product storage and handling provisions.

B. Accept metal fabrications on site in labeled shipments. Inspect for damage.

C. Protect metal fabrications from damage by exposure to weather.

1.07 QUALITY ASSURANCE

A. Fabricate structural steel members in accordance with AISC Codes of Standards Practice.

1.08 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on Shop Drawings.

PART 2 PRODUCTS

2.01 MATERIALS

A. Plates Angles and Dowels: ASTM A36, Fy = 36 ksi.

B. Bolts, Nuts, and Washers: ASTM A325 galvanized to ASTM A153/A153M for galvanized components.

C. Anchor Bolts: ASTM F1554, grade 36, hot-dipped galvanized steel threaded rod with forged heavy hex head.

D. Welding Materials: AWS D1.1; type required for materials being welded.

E. Shop and Touch-Up Primer: Tnemec Tneme-Zinc 90-97 or Sherwin Williams Protective and Marine Coatings Corothane I Galvapac 2K Zinc Primer, no substitutions.

F. Paint: Tnemec Series 161 epoxy or Sherwin Williams Protective and Marine Coatings Recoatable Epoxy Primer, no substitutions.

2.02 COMPONENTS

A. Following is list of principal items only. Refer to drawings for items not specifically scheduled.

B. Guard Posts: Steel pipe, concrete filled, crowned cap, as detailed; prime and paint.

C. Anchor Bolts: Unfinished.

2.03 FABRICATION

A. Prepare surfaces in accordance with SSPC SP3. Surfaces exposed to view shall have the surface prepared in accordance with SSPC SP6 to 1.0 to 1.5 blast profile.

B. Fit and shop assemble in largest practical sections, for delivery to site.

C. Fabricate items with joints tightly fitted and secured.

D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.04 FACTORY APPLIED FINISHES

A. Prepare surfaces in accordance with SSPC SP3. Surfaces exposed to view shall have the surface prepared in accordance with SSPC SP6 to 1.0 to 1.5 blast profile.

B. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

C. Prime paint all items with one coat Tnemec Tneme-Zinc 90-97 or SW Corothane, 3 mils thick, and one coat Tnemec Series 161 epoxy or SW Recoatable Epoxy Primer, 4 to 6 mils. Color shall be Light Grey.

2.05 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation from Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed Steel items to bare metal where site welding is required.

B. Supply items required to be cast into concrete or embedded in masonry with setting templates to appropriate sections.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Make provisions for erection stresses. Install temporary bracing to maintain alignment, until permanent bracing and attachments are installed.

C. Field weld components indicated on shop drawings. Remove paint and primer at locations of field welds.

D. Perform field welding in accordance with AWS D1.1.

E. Obtain approval of Engineer prior to site cutting or making adjustments not scheduled.

F. After erection, prime all welds, abrasions and surfaces not shop primed with one coat Tnemec Tneme-Zinc 90-97 or SW Corothane, 3 mils thick and one coat Tnemec Series 161 epoxy or SW Recoatable Epoxy Primer, 4 to 6 mils.

END OF SECTION

SECTION 05 51 00
METAL STAIRS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Steel stair frame of structural sections, with closed risers.

B. Pan to receive concrete fill stair treads.

1.02 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

A. Section 04 20 00 – Unit Masonry: Placement of metal anchors in masonry.

1.03 RELATED SECTIONS

A. Section 03 30 00 - Cast-In-Place Concrete: Concrete fill in stair pans.

B. Section 05 52 00 - Metal Railings: Handrails.

C. Section 09 91 00 - Painting [09 96 00 - High Performance Coatings]: Paint finish.

1.04 REFERENCES

A. American Society for Testing and Materials (ASTM) International:
   1. ASTM A36 - Standard Specification for Carbon Structural Steel.
   2. ASTM A283 - Standard Specification for low and Intermediate Tensile Strength Carbon Steel Plates.
   3. ASTM A325 - Standard Specification for Structural Bolts for Steel, Heat Treated, 120/105 ksi Tensile Strength.

B. American Welding Socity (AWS):
   1. AWS A2.0 - Standard Welding Symbols.
   2. AWS D1.1 - Structural Welding Code.

1.05 DESIGN REQUIREMENTS

A. Fabricate stair assembly to support live load of 100 lb/sq ft with deflection of stringer framing not to exceed 1/240 of span.

1.06 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures [Submittals]: Submittal provisions.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.

C. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.

1.07 QUALIFICATIONS

A. Prepare Shop Drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State of Wisconsin.

1.08 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on Drawings.

PART 2 PRODUCTS

2.01 MATERIALS

A. Steel Sections: ASTM A36.

B. Plates: ASTM A36.

C. Stair Treads: 2 inch concrete in metal pan; 12 inches deep; smooth concrete surface; provide safety nosing.

D. Safety Tread Stair Nosing: 3 inch wide ribbed anti-slip extruded aluminum.

E. Concrete for Treads: Portland cement Type I, 3000 psi 28 day strength, 2 to 3 inch slump.

F. Bolts, Nuts, and Washers: ASTM A325.

G. Welding Materials: AWS D1.1; type required for materials being welded.

2.02 FABRICATION - GENERAL

A. Fit and shop assemble in largest practical sections, for delivery to site.

B. Fabricate components with joints tightly fitted and secured.

C. Continuously seal jointed pieces by continuous welds.

D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

F. Accurately form components required for anchorage of stairs to building structure.

2.03 FABRICATION - PAN STAIRS

A. Fabricate stairs with closed risers and treads of metal pan construction, ready to receive concrete.

B. Form treads and risers with sheet steel stock.

C. Secure tread pans to stringers with clip angles welded in place.

D. Form stringers with rolled steel channels 12 inches deep.

2.04 FINISHES

A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing in accordance with SSPC SP6.

B. Do not prime surfaces in direct contact with concrete or where field welding is required.

C. Prime paint items with one coat.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

B. Beginning of installation means erector accepts existing conditions.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Supply items required to be cast into concrete or embedded in masonry with setting templates, to appropriate sections.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide anchors, plates and angles required for connecting stairs to structure.

C. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

D. Field weld components indicated on shop drawings. Perform field welding in accordance with AWS D1.1.

E. Field bolt and weld to match shop bolting and welding. Conceal bolts and screws whenever possible.

F. Mechanically fasten joints butted tight, flush, and hairline. Grind welds smooth and flush.

G. Obtain Engineer approval prior to site cutting or making adjustments not scheduled.

H. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

3.04 ERECTION TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

END OF SECTION

SECTION 05 52 00

METAL RAILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Steel pipe handrails, railings, and fittings.

1.02 RELATED SECTIONS

A. Section 09 91 00 – Painting: Paint finish.

1.03 DESIGN REQUIREMENTS

A. Railing assembly, swing gate, and attachments shall be designed to resist a concentrated load of 200 pounds and a linear load of 50 pounds per linear foot.

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

1.05 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on drawings.

PART 2 PRODUCTS

2.01 STEEL RAILING SYSTEM

A. Pipe: ASTM A53, Grade B Schedule 40.

B. Anchors: Wood Lag screws appropriate to secure to wood blocking.

C. Swing gate: Pallet Self-Closing Mezzanine Safety Gate (PLG-6-PCY) from CAI Safety Systems or equal.

D. Color: Powder-coated gray.

2.02 FABRICATION

A. Fit and shop assemble components in largest practical sizes, for delivery to site.

B. Fabricate components with joints tightly fitted and secured.

C. Design and fabricate for removal railing section.

D. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

E. Continuously seal joined pieces by continuous welds.

F. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

G. Accurately form components, to each other and to building structure.

H. Prepare steel surfaces in accordance with SSPC SP6 and prime paint.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

B. Beginning of installation means erector accepts existing conditions.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

3.03 INSTALLATION

A. Install components plumb and level, accurately fitted, free from distortion or defects.

B. Provide anchors, and plates required for connecting railings to structure. Anchor railing to structure.

3.04 ERECTION TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

END OF SECTION

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural roof, wall, and floor framing.

B. Roof, wall, and floor sheathing.

C. Pressure treated lumber.

D. I -Joists and Rim Boards.

E. Blocking, nailers, fascia, and fasteners.

1.02 RELATED SECTIONS

A. Section 06 17 53 - Shop-Fabricated Wood Trusses.

1.03 REFERENCES

A. American Lumber Standards Committee (ALSC):
   1. Softwood Lumber Standards.

B. American National Standards Institute (ANSI):
   1. ANSI A135.4 - Basic Hardboard.
   2. ANSI A208.1 - Wood Particleboard and Flakeboard: Types, Grades, and Uses.

C. American Plywood Association (APA).

D. American Wood Protection Association (AWPA) U1-18.

E. National Forest Products Association (NFPA).

F. National Institute of Standards and Technology (NIST):
   1. NIST PS 20 - American Softwood Lumber Standard.

G. Southern Pine Inspection Bureau (SPIB):
   1. SPIB - Standard Grading Rules for Southern Pine Lumber.

H. Western Wood Products Association (WWPA):
   1. WWPA G5 - Western Lumber Grading Rules.

1.04 SUBMITTALS

A. Submit product data on the sawn lumber, LVL lumber, wood sheathing, shear walls, shear walls anchors, and metal connectors.

1.05 QUALITY ASSURANCE

A. All lumber and plywood shall bear a grading stamp exposed to view.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Product storage and handling provisions.

PART 2 PRODUCTS

2.01 LUMBER MATERIALS

A. Lumber Grading Rules: SPIB and WWPA.

B. Lumber and rafter framing: 19 percent maximum moisture content.

2x4s, 2x6s, 2x8s, 2x10s: SPF No. 1/ No. 2 or better, Fb = 875 psi.

2x12s: SP or DF No. 1 or better, Fb = 1000 psi.

C. Posts: SPF No. 1 and better, Fb = 850 psi, Fc (parallel) = 700 psi.

D. Nailers and Blocking: Spruce-Pine-Fir or Hem Fir No. 2 or better, 19 percent maximum moisture content.

E. Pressure Treated Lumber: Southern Pine No. 2 or better, preservative treated conforming to the U1-18 Standards of the American Wood Protection Association. Each piece shall be treated in accordance with AWPA standards and certified by an approved inspection agency. The wood shall be pretreated to the following Use Categories:
1. Wood in an interior location in with concrete or masonry: UC2
2. Wood in an exterior location in contact with concrete or masonry: UC4A.
3. Wood in an exterior location in contact with or embed in the ground: UC4B.
4. Structural wood posts embedded in the ground: UC4B.

2.02 ENGINEERED WOOD I-JOISTS AND RIM BOARDS

A. Wood I-Joists: Solid Web Wood I-Joists shall be manufactured in accordance with the requirements of APA PRI-400 Performance Standard for I-Joists.
1. 14” Joist Depth: APA Performance-Rated designation PRI-70.
   a. Basis of design is Weyerhaeuser TrusJoist TJI 360, 14” deep with 2 5/16 inches wide flanges.
2. Rim Board: Engineered wood rim board by wood I-joist manufacturer.
   b. Basis of design is Weyerhaeuser 1 1/8” TJ Rim Board.

B. Wood I-Joists shall have the design capacity to support the project design loads based on indicated depth, spacing, and span shown on the Drawings.
1. Provide lateral bracing, full-depth blocking, web stiffeners, filler blocks, backer blocks, fasteners and fastener patterns, and fastener anchorage to supporting structure per joist manufacturer’s guidelines and as indicated on Drawings.
2. Safety bracing is to be provided by the installer to keep the joists straight and plumb as required and to ensure adequate lateral support for the individual members until the sheathing material is applied.

C. Manufacturers:
1. Weyerhaeuser
2. Pacific Woodtech (via Wausau Supply)
3. Louisiana-Pacific Corporation LP Building Products.
4. Georgia-Pacific Building Products.

2.03 SHEATHING MATERIALS

A. Roof Sheathing: 3/4” Plywood, APA Rated Sheathing, Exposure 1, unsanded, Group 2; or OSB, APA Rated Sheathing, Exposure 1.

B. Exterior Wall Sheathing: 1/2” Plywood, APA Rated Sheathing, Exposure 1, unsanded, Group 2; or OSB, APA Rated Sheathing, Exposure 1.

C. Interior Wall Sheathing: 1/2” Plywood, APA Rated Sheathing, Grade BCX.

D. Pressure Treated Plywood: APA Rated Sheathing, Grade C-D, Exterior, unsanded, Group 2, preservative treated same as lumber.

E. Floor Sheathing: 3/4 inch thick plywood, tongue-and-groove edges, APA Rated Sturd-I-Floor, exterior.

2.04 ACCESSORIES

A. Wall Framing Base Plate Anchor:
   1. Simpson Strong-Tie Stainless Steel Titen HD Heavy Duty Screw Anchor: ½ inch diameter by 6 inch long or,
   2. DeWalt (Powers Fasteners) Wedge-Bolt Plus 316 Stainless Steel ½ inch diameter by 6 inches long.

B. Self drilling and tapping screws.

C. Hot dipped galvanized ring shank nails.

D. Metal Connectors:
   1. Hot dipped galvanized steel.
   2. Connector type as noted on the drawings.
   3. Manufactured by Simpson Strong-Tie.
   4. Or equal by MiTek (USP Structural Connectors).

E. Hold downs: As shown on Drawings. Finish shall be galvanized.

F. Nails. Hot dipped galvanized or stainless steel in contact with pressure treated lumber.

G. Wood to Metal Screws: Hilti Self-Drilling screws, #3 point, #10 fastener diameter.

H. Wood to Steel Screws for Exterior Applications: Teks Wood-to-Metal screws, #12 fastener diameter x 2 ¾" long, with exterior use rated coating.

I. Anchor Bolts: ASTM F1554, grade 36, hot-dipped galvanized steel threaded rod with forged heavy hex head.

J. Sill Gasket: Closed cell polythene foam in continuous rolls. Gasket shall be as wide as wall plate.

K. H clips.

L. Site applied preservative treatment.

M. Plate Steel: A36, prime painted.

PART 3 EXECUTION

3.01 FASTENERS AND CONNECTORS

A. Fasteners and connectors in contact with treated wood shall be hot dipped galvanized steel or stainless steel.

B. Reference IBC 2015 Table 2304.10.1 Fastening Schedule for minimum fastening requirements.

3.02 FRAMING

A. Set structural members level and plumb, in correct position.

B. Interior walls shall run full height from the floor slab to the bottom of the roof trusses, unless noted otherwise.

C. Bottom wall plates of interior walls shall be fastened to the concrete slab with masonry screws at 24 inches on center.

D. Brace the top wall plates of interior walls to the bottom of the roof trusses. Where the walls run parallel to the trusses then install 2x4 blocking at 24 inches on center between the trusses and secure the top plate to the blocking.

E. Anchor the bottom wall plate to the concrete foundation with one wall framing base plate anchor at 24 inches on center. Install one anchor within at a maximum of 6 inches from each end of a plate and 12 inches from each corner. Concrete must be 21 days old prior to installing the anchors.

F. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in true alignment until completion of erection and installation of permanent bracing.

G. Place horizontal members crown side up.

H. Construct headers, floor framing and wall studs full length without splices.

I. Set members level and plumb, in correct position.

J. Fasten members in place:
1. Anchor lumber together with nails.
2. Anchor treated lumber with hot dipped galvanized nails approved for use with the treatment type of the lumber.
3. Anchor treated lumber to masonry and concrete with stainless steel masonry screws or bolts as specified.
4. Anchor lumber to metal with self-drilling and tapping screws.
5. Anchor lumber to existing lumber with galvanized ring shank nails.
6. Anchor plywood to lumber with nails.
7. Anchor plywood to treated lumber with hot dipped galvanized nails.

K. Provide pressure treated lumber at all locations in contact with concrete or masonry.

L. Pressure treated lumber that is cut or drilled shall have the cut or drilled areas filed coated with a preservative treatment.

M. Anchors to be used in contact with treated sheathing and lumber shall be hot dipped galvanized or stainless steel.

N. Provide headers for all openings regardless if headers are shown on the drawings.

O. Place sill gasket directly on concrete foundation and concrete masonry units.

P. For any walls with vertical cavities taller than 10 feet, provide equally spaced continuous horizontal solid wood blocking at no more than 10 feet on center.

3.03 ROOF SHEATHING

A. Install with the long dimension of the panel across supports, and with panel continuous over two or more spans. Suitable edge support shall be provided where indicated on drawings or in recommendations of the American Plywood Associates by use of panel clips, tongue-and-groove panels, or lumber blocking between joists. Panel end joints shall occur over framing. Allow 1/8 inch spacing at panel ends and 1/4 inch at panel edges, unless otherwise recommended by the panel manufacturer.

B. Fasten with 8d-2 ½" common nails 6 inches on center along panel edges and 12 inches on center at intermediate supports; except, when supports are spaced 48 inches on center or more, space nails 6 inches on center at all supports.

3.04 WALL SHEATHING

A. At wood studs and ends of wood trusses, nail 6 inches on center along panel edges and 12 inches on center at intermediate support with 8d-2 ½" common nails. Provide blocking between studs and between trusses for panel edge fastening at all panel joints.

B. Allow 1/8 inch spacing at panel ends and 1/4 inch at panel edges, unless otherwise recommended by the panel manufacturer.

3.05 FLOOR SHEATHING

A. Install with the long dimension of the panel across supports and with panel continuous over two or more spans. Panel edges shall be tongue-and-groove or supported on 2-inch lumber blocking installed between joists. Protect against damage until finish floor is installed.

B. Stagger panel end joints. Panel end joints shall occur over framing. Allow 1/8 inch spacing at panel ends and edges, unless otherwise recommended by the panel manufacturer. Panel fastening to be glue-nailed.

C. Use 6d ring-shank or screw-shank nails for panels 3/4 inch thick or less, and 8d for thicker panels. Fasten panel edges at 6 inches on center and 12 inches at intermediate supports.

D. Field-glue floors with adhesives meeting APA Specification AFG-01, applied in accordance with the manufacturer's recommendations. If non-veneer panels with sealed surfaces and edges are used, use only solvent-based glues; check with panel manufacturer. Apply continuous line of glue on joists, and continuous or spaced line of glue in groove of tongue-and-groove panels. Use 6d ring- or screw-shank nails spaced 12 inches on center at panel ends and intermediate bearings.

3.06 NAILERS

A. Install where shown or noted on the drawings. Install blocking in walls for the support of cabinets and other work requiring solid blocking support for fastening.

B. Fasten wood nailers to masonry with stainless steel masonry screws. Use one (1) screw at 24 inches on center for 2x4's. Use two (2) screws at 24 inches on center for 2x6's, 2x8's, and plywood on top of masonry walls. Fasten to metal with self-drilling, self-tapping wood to metal screws.

C. Pressure treated lumber that is cut or drilled shall have the cut or drilled areas filed coated with a preservative treatment.

3.07 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

B. Surface Flatness of Floors: 1/4 inch in 10 feet, maximum.

END OF SECTION

SECTION 06 17 53

SHOP-FABRICATED WOOD TRUSSES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated wood trusses for roof and floor framing.

B. Bridging, bracing, and anchorage.

C. Connectors.

1.02 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM) International:
   1. ASTM A167 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
   2. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

B. International Code Council:
   1. IBC - International Building Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.

C. National Forest Products Association (NFPA).

D. National Institute of Standards and Technology (NIST):
   1. NIST PS 20 - American Softwood Lumber Standard.

E. Southern Pine Inspection Bureau (SPIB):
   1. SPIB - Standard Grading Rules for Southern Pine Lumber.

F. Truss Plate Institute (TPI):
   1. ANSI/TPI 1 - National Design Standard for Metal Plate Connected Wood Truss Construction.
   2. TPI BWT-76 - Bracing Wood Trusses - Commentary and Recommendations.
   3. TPI DSB-89 - Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses.
   4. TPI HET-80 - Handling and Erecting Wood Trusses - Commentary and Recommendations.
   5. TPI HIB-91 - Commentary and Recommendations for Handling, Installing and Bracing Metal Plate Connected Wood Trusses.
   6. TPI PCT-80 - Design Specifications for Metal Plate Connected Parallel Chord Wood Trusses.
   7. TPI QST-88 - Quality Standard for Metal Plate Connected Wood Trusses.
   8. TPI 85 - Design Specifications for Metal Plate Connected Wood Trusses.

G. Western Wood Products Association (WWPA):
   1. WWPA G5 - Western Lumber Grading Rules.

1.04 SYSTEM DESCRIPTION

A. Trusses shall be designed in accordance with “National Design Specifications for Stress-Grade Lumber and its Fastenings” (NDS) by National Forest Products Association and “Design Specifications for Metal Plate Connected Wood Trusses” by Truss Plate

Institute (TPI), latest editions, and the rules of the Department of Commerce, State of Wisconsin.

1.05 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Shop Drawings: Indicate sizes and spacing of trusses, web and chord sizes, loads and truss cambers, and framed openings. Submit design calculations.

C. Product Data: Submit truss configurations and bridging and bracing.

1.06 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
   1. Lumber Grading Agency: Certified by NIST PS 20.

B. Truss Design, Fabrication, and Installation: In accordance with ANSI/TPI 1 and TPI HIB-91.

1.07 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

B. Design trusses under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State of Wisconsin.

1.08 REGULATORY REQUIREMENTS

A. Conform to Wisconsin Commercial Building Code, current edition, for loads, seismic zoning, and other governing load criteria.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Special Provision “General Requirements for Building Construction – Section 01 60 00 - Product Requirements: Product storage and handling provisions.

B. Handle and storage of trusses in accordance with manufacturer’s instructions and the Truss Plate Institute (TPI HET-80 and TPI HIB-91) recommended practices.

C. Store trusses in a vertical position on a flat surface, raised 4 to 6 inches off the ground or supporting surfaces, supports spaced 8 to 10 feet on center. Cover the trusses to protect from the weather elements but allow air to flow through the trusses.

1.10 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

PART 2 PRODUCTS

2.01 MATERIALS

A. All lumber used for truss members shall be in accordance with the published values of a recognized rules writing agency and shall bear the grade stamp of that agency.

B. Connector plates shall be manufactured of not less than 20 gauge steel and shall meet or exceed ASTM A653 and shall be galvanized according to ASTM A653.

2.02 FABRICATION

A. Do not fabricate trusses more than 30 days prior to installation.

B. Fabrication shall be in accordance with Truss Plate Institution recommended practices.

C. Fabricate top and bottom chord extensions as indicated on drawings.

2.03 CONNECTORS

A. Truss-to-truss connectors shall be designed and provided by truss manufacturer.

B. Steel connectors, anchors, and ties at truss supports as noted on drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify that supports and openings are ready to receive trusses.

3.02 PREPARATION

A. Coordinate placement of bearing and support items.

3.03 ERECTION

A. Damaged trusses shall not be installed.

B. Trusses with wood that is moldy, damaged or stained by water/snow/ice are not allowed to be installed.

C. Erect trusses in accordance with manufacturer’s instructions and the Truss Plate Institution (TPI HET-80 and TPI HIB-91) recommended practices.

D. Set members level and plumb, in correct position.

E. Make provisions for erection loads and for sufficient temporary bracing to maintain structure plumb, and in alignment until completion of erection and installation of permanent bracing.

F. Do not field cut or alter structural members without approval of Engineer.

G. Trusses shall not be cut, added onto, or altered in any way without the consent of the Engineer.

H. Install metal connectors at locations indicated on drawings.

I. Brace trusses as required by manufacturer and as noted on the drawings.

J. All trusses shall be connected to each interior wall the truss crosses with light-gauge steel clips as indicated on drawings.

3.04 TOLERANCES

A. Special Provision “General Requirements for Building Construction” - Section 01 40 00 - Quality Requirements: Tolerances.

B. Framing Members: 1/2 inch maximum, from true position.

END OF SECTION

SECTION 06 22 10
INTERIOR TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Furnish and install plastic interior trim where shown on drawings.

1.02 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry: Blocking.

B. Section 07 27 13 – Sheet Membrane Air/Vapor Retarder.

C. Section 07 92 00 - Joint Sealants: Perimeter sealant.

D. Section 09 91 00 – Painting: Field finishing.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
   2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 – Submittal Procedures: Submittal provisions.

B. Product Data: Manufacturer’s data sheets on each product used.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 – Product Requirements: Product storage and handling provisions.

B. Material should be stacked on edge or laid flat on a smooth, level surface. Edges and corners should be protected from chipping. Store products off the ground, on a flat surface, and under waterproof covering. If sheets should become wet, allow to dry thoroughly before installing.

1.06 WARRANTY

A. Warranty: Furnish minimum 10-year manufacturer’s limited warranty. Warranty shall include coverage from cracking, rotting, delamination, and excessive swelling from moisture.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. AZEK by Vycom Corporation.

2.02 TRIM BOARDS

A. General
   1. Edges must be square, and top and bottom surfaces shall be flat with no convex or concave deviation.

2. Uniform surface free of cupping, warping, and twisting.
3. Smooth finish. 5/4 inch thick. Width as shown on Drawings.

B. Material: Free foam cellular PVC material with a small-cell microstructure. PVC shall be homogeneous and free of void, holes, cracks, and foreign inclusions and other defects.

C. Performance and physical characteristic requirements
1. Density 0.55 g/sq cm (ASTM D702)
2. Water Absorption 0.15% (ASTM D570)
3. Nail Hold 35 Lbf/in (ASTM D1761)
4. Screw Hold 680 Lbf/in (ASTM D1761)
5. Gardner Impact 103 in-lbs (ASTM D5420)
6. Charpy Impact (at 23O C) 4.5 in-lbs (ASTM D256)
7. Coefficient of Linear Exp 3.2x10-5 (ASTM D696)
8. Burning Rate No burn when flame removed (ASTM D635)
9. Flame Spread Index < 25 (ASTM E84)

D. Trim: AZEK Trimboards by Vycom Corporation, 801 Corey Street, Moosic, PA 18507.

2.03 ACCESSORIES

A. Fasteners:
1. Stainless steel or hot-dipped galvanized nails or screws designed for plastic trim (thinner shank, blunt point, full round head). Fastener shall be long enough to penetrate solid wood substrate a minimum of 1 1/2".
2. Staples, small brads and wire nails are not permitted.

B. Adhesives: AZEK Adhesive, a cellular PVC cement.

C. Sealant: Urethane, polyurethane, or acrylic based sealants without silicone.

PART 3 EXECUTION

3.01 PREPARATION

A. Correct conditions detrimental to timely and proper completion of work.

B. Verify air/vapor retarder system installation is complete.

3.02 INSTALLATION

A. General:
1. Install per manufacturer’s recommendations.
2. Fasteners shall be installed at 16” on center.
3. Counter-sink all fasteners.
4. Install in longest pieces possible.
5. Joints between boards shall not occur within 12 inches of corner on one side.

B. Plastic Trim:
1. Glue all joints with adhesive.
2. A glue joint shall be secured with fastener on each side of joint.
3. Surfaces to be glued shall be smooth, clean, and in complete contact with each other.
4. Use a minimum of 2 fasteners per every framing member.
5. Fasteners shall be installed no more than 2 inches from the end of each board.
6. Allow for expansion and contraction at the ends of the run, where board ends are glued.

C. Final Finishing:
1. Fill nail holes flush with sealant prior to final finishing.

2. Expansion and contraction joints in plastic trim shall be have sealant installed under Section 07 92 00 before final finish is applied.
3. Final finish under Section 09 91 00 – Painting.
4. Sealant shall be installed at top and bottom board perimeter under Section 07 92 00 after final finish is applied.

END OF SECTION

SECTION 07 21 13
BOARD INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Board insulation at perimeter foundation wall, underside of floor slabs, cavity wall construction, exterior wall furring construction, and attic access construction.

1.02 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete: Slab and foundation construction.

B. Section 06 10 00 - Rough Carpentry: Attic access construction.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM) International:
1. ASTM C240 - Standard Test Methods of Testing Cellular Glass Insulation Block.
2. ASTM C272 - Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
3. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation.
4. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
5. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
6. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
7. ASTM D1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
8. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics.
9. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
10. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.

B. International Code Council:
1. IBC - International Building Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.
2. IECC - International Energy Conservation Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.

C. National Fire Protection Association (NFPA):
1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

D. Underwriters Laboratories Inc. (UL):
1. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials.

1.04 ENVIRONMENTAL REQUIREMENTS

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

B. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 INSULATION MATERIALS

A. Polystyrene Insulation Type A: ASTM C578 Type IV; extruded cellular type, conforming to the following:
   1. Thermal Resistance: 5-year aged R-values of 5.4 and 5.0 minimum per inch thickness at 40°F and 75°F, respectively.
   2. Water Absorption: In accordance with ASTM C272, 0.1 percent by volume maximum.
   3. Compressive Strength: Minimum 25 psi.
   4. Flame Spread Index: Less than 75 [*25 where required by building code*].
   5. Smoke-Developed Index: Less than 450.
   6. Thickness: Thickness indicated in schedule.

B. Manufacturers:
   1. DiversiFoam Products.
   2. Dow Chemical: Styrofoam brand.
   3. Foamular.
   4. Owens Corning.

2.02 ADHESIVES

A. Adhesive: Type recommended by insulation manufacturer for application.

B. Acceptable Manufacturer's products:
   1. Henkel Loctite PL300 Foam Board Adhesive
   2. Henkel Loctite PL Premium Construction Adhesive.
   3. BASF MasterWeld 420.
   4. DAP Beats the Nail Panel and Foam Construction Adhesive.

2.03 FOAM SEALANT

A. Polyurethane insulating foam sealant; one-component, gun or straw applied; UL classified; containing no solvents, CFC's or VOC's; moisture-resistant.

B. Products:
   1. Great Stuff Pro by Dow Chemical Company.
   2. Handi-Foam by FOMO.
   3. Kwik Foam by DAP, Inc.

2.04 INSULATION PROTECTION BOARD

A. Insul-Cap by Wisconsin Poured Wall Contractors Supply or equal, color to match sidewalk.

PART 3 EXECUTION

3.01 EXAMINATION

A. Special Provision "General Requirements for Building Construction" - Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify substrate, adjacent materials, and insulation boards are dry and ready to receive insulation and adhesive.

C. Verify substrate surface is flat, free of fins, irregularities, and materials or substances that may impede adhesive bond.

3.02 INSTALLATION

A. Foundation Perimeter:

1. Adhere insulation to wall by applying 2 inch diameter spots of adhesive to insulation boards at 16 inches on center both ways.
2. Butt edges and ends tight to adjacent board and to protrusions.
3. Cut and fit insulation tight to protrusions or interruptions to insulation plane.

B. Under Concrete Slabs:
1. Place insulation under slabs on grade after base for slab has been compacted.
2. Prevent insulation from being displaced or damaged while placing vapor retarder and slab.
3. Cut and fit insulation tight to protrusions or interruptions to insulation plane.

C. Exterior Walls:
1. Coordinate installation with installation of vertical furring members.
2. Install boards vertically.
3. Butt edges and ends tight to adjacent board and to protrusions.
4. Fasten insulation in place.
5. Cut and fit insulation tight to protrusions or interruptions to insulation plane.

D. Attic Access:
1. Adhere to attic hatch construction.

3.03 PROTECTION OF INSTALLED CONSTRUCTION

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Protection of finished Work provisions.

B. Do not permit Work to be damaged prior to covering insulation.

3.04 SCHEDULES

A. Perimeter Foundation Wall Insulation: Type A, extruded polystyrene, 1.5-inch thick, square edges.

B. Exterior Wall insulation: Type A, extruded polystyrene, 1-inch thick, square edges.

C. Attic Access Insulation: Type A, extruded polystyrene, 2-inch thick, square edges.

END OF SECTION

SECTION 07 21 16
BLANKET INSULATION

PART 1 GENERAL

1.01 WORK INCLUDED

A. Batt insulation in wall construction; and batt insulation for filling perimeter door and window shim spaces, crevices in exterior wall and roof assembly, and other miscellaneous areas.

1.02 RELATED WORK

A. Section 06 10 00 - Rough Carpentry.

B. Section 07 27 13 – Sheet Membrane Air/Vapor Retarder.

C. Section 07 25 00 - Weather Barriers.

D. Section 08 15 80 - Vinyl Windows.

E. Section 09 29 00 - Gypsum Board.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM) International:
   1. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
   2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. International Code Council:
   1. IBC - International Building Code, 2009 Edition, and referenced standards with 2011 State of Wisconsin amendments.
   2. IECC - International Energy Conservation Code, 2009 Edition, and referenced standards with 2011 State of Wisconsin amendments.

C. National Fire Protection Association (NFPA):
   1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

D. Underwriters Laboratories Inc. (UL):
   1. UL 723 - Tests for Surface Burning Characteristics of Building Materials.

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Manufacturer’s Installation Instructions: Submit.

C. Product Data: Submit data on product characteristics, performance criteria, and limitations.

1.05 COORDINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Coordinate the Work Section 07 27 13 for installation of vapor retarder.

PART 2 PRODUCTS

2.01 BATT INSULATION

A. Batt Insulation: ASTM C665; preformed fiberglass; unfaced. Owens Corning Fiberglas Thermal Batts.

PART 3 EXECUTION

3.01 EXAMINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify substrate adjacent materials and insulation are dry and ready to receive installation.

C. Verify mechanical and electrical services within walls have been installed and tested.

3.02 INSTALLATION

A. Install in accordance with manufacturer’s recommendations.

B. Install in walls spaces without gaps or voids.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tight in spaces and tight to exterior side of mechanical and electrical services within plane of insulation.

E. Fill voids around electrical junction boxes that are inside the vapor back boxes.

END OF SECTION

SECTION 07 21 26
BLOWN FIBERGLASS INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Ceiling: Loose fill fiberglass insulation pneumatically placed.

1.02 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 06 17 53 - Shop-Fabricated Wood Trusses.

C. Section 07 27 13 – Sheet Membrane Air/Vapor Retarder.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM) International:
   1. ASTM C764 - Standard Specifications for Mineral Fiber Loose-Fill Thermal Insulation.
   2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. International Code Council:
   1. IBC - International Building Code, 2009 Edition, and referenced standards with 2011 State of Wisconsin amendments.
   2. IECC - International Energy Conservation Code, 2009 Edition, and referenced standards with 2011 State of Wisconsin amendments.

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Product Data: Submit data on product characteristics, performance criteria, and limitations.

PART 2 PRODUCTS

2.01 MATERIALS

A. Fiberglass Insulation: ASTM C764; per ASTM E84 flame spread index of 25 or less and smoke developed index of 450 or less; no formaldehyde; no asbestos.

B. Ventilation Baffles: Formed plastic.

C. Thickness markers.

D. Acceptable Insulation Manufacturers:
   1. CertainTeed InsulSafe SP.
   2. Owens Corning PROPINK L77 loose fill insulation.
   3. Knauf Insulation Jet Stream Ultra Blowing Insulation

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation are dry and ready to receive insulation.

B. Verify spaces are unobstructed to allow placement of insulation.

3.02 INSTALLATION

A. Install thickness markers that are labeled in inches. Install at least one for every 300 square feet throughout the attic. The markers shall be attached to the trusses and shall be marked with the minimum initial thickness and minimum settled thickness with numbers a minimum of 1 inch in height. Each marker shall face the attic access.

B. Install insulation and ventilation baffle in accordance with manufacturer's instructions.

C. Pneumatically place insulation in quantity to allow for settling to achieve a thermal resistance rating as indicated on the Drawings.

D. Place insulation against baffles. Do not impede natural attic ventilation to soffit.

E. Place tight to and behind mechanical and electrical services within the plane of insulation.

F. Completely fill intended spaces. Leave no gaps or voids.

G. Install certification indicating initial installed thickness, settled thickness, settled R-value, installed density, coverage area, and number of bags installed. The insulation installer shall sign and date the certification. Post the certification in a sealed plastic sleeve to a truss adjacent to and visible from the attic access hatch.

3.03 CLEANING

A. Special Provision "General Requirements for Building Construction" - Section 01 70 00 - Execution and Closeout Requirements: Cleaning provisions.

B. Remove loose insulation residue.

END OF SECTION

SECTION 07 21 26
BLOWN FIBERGLASS INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Ceiling: Loose fill fiberglass insulation pneumatically placed.

1.02 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 06 17 53 - Shop-Fabricated Wood Trusses.

C. Section 07 27 13 – Sheet Membrane Air/Vapor Retarder.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM) International:
   1. ASTM C764 - Standard Specifications for Mineral Fiber Loose-Fill Thermal Insulation.
   2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. International Code Council:
   1. IBC - International Building Code, 2009 Edition, and referenced standards with 2011 State of Wisconsin amendments.
   2. IECC - International Energy Conservation Code, 2009 Edition, and referenced standards with 2011 State of Wisconsin amendments.

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Product Data: Submit data on product characteristics, performance criteria, and limitations.

PART 2 PRODUCTS

2.01 MATERIALS

A. Fiberglass Insulation: ASTM C764; per ASTM E84 flame spread index of 25 or less and smoke developed index of 450 or less; no formaldehyde; no asbestos.

B. Ventilation Baffles: Formed plastic.

C. Thickness markers.

D. Acceptable Insulation Manufacturers:
   1. CertainTeed InsulSafe SP.
   2. Owens Corning PROPINK L77 loose fill insulation.
   3. Knauf Insulation Jet Stream Ultra Blowing Insulation

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation are dry and ready to receive insulation.

B. Verify spaces are unobstructed to allow placement of insulation.

3.02 INSTALLATION

A. Install thickness markers that are labeled in inches. Install at least one for every 300 square feet throughout the attic. The markers shall be attached to the trusses and shall be marked with the minimum initial thickness and minimum settled thickness with numbers a minimum of 1 inch in height. Each marker shall face the attic access.

B. Install insulation and ventilation baffle in accordance with manufacturer's instructions.

C. Pneumatically place insulation in quantity to allow for settling to achieve a thermal resistance rating as indicated on the Drawings.

D. Place insulation against baffles. Do not impede natural attic ventilation to soffit.

E. Place tight to and behind mechanical and electrical services within the plane of insulation.

F. Completely fill intended spaces. Leave no gaps or voids.

G. Install certification indicating initial installed thickness, settled thickness, settled R-value, installed density, coverage area, and number of bags installed. The insulation installer shall sign and date the certification. Post the certification in a sealed plastic sleeve to a truss adjacent to and visible from the attic access hatch.

3.03 CLEANING

A. Special Provision "General Requirements for Building Construction" - Section 01 70 00 - Execution and Closeout Requirements: Cleaning provisions.

B. Remove loose insulation residue.

END OF SECTION

SECTION 07 25 01
WEATHER BARRIER

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Continuous weather resistive barrier.

1.02 SUBMITTALS

A. Submit product data on all the products to be used.

1.03 WARRANTY

A. Provide a manufacturer's one year product warranty.

PART 2 PRODUCTS

2.01 MATERIALS

A. Self-adhered vapor permeable water resistive barrier.
   1. Henry Blueskin VP110, 48 inch wide sheet, or approved equal.

B. Assembly auxiliary materials:
   1. Primer: Polymer emulsion water based quick setting primer with low VOC content. Henry Aquatac Primer or approved equal.
   2. Flashing: Self-adhered butyl flashing integrally laminated to a white engineered poly film surface. Henry FortiFlash Butyl or approved equal.
   3. Sealants:
      a. Moisture cure sealant: One component, moisture curing, non-sag, gun-grade elastomeric polymer. Henry Moistop Sealant or approved equal.
      b. Termination sealant: One-part high performance synthetic rubber sealant. Henry 212 All Purpose Sealant

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify surfaces are sound, clean, and free of frost, oil, grease, dirt, excess mortar or other contaminants

B. Substrate must be continuous and secure, and free of projections and irregularities that may be detrimental to membrane installation.

C. Sheathing fasteners must be installed into solid backing and set flush with sheathing.

D. Do not install air barrier over substrates that are wet to touch.

3.02 PREPARATION

A. Protection: Protect top and backside of substate walls against bulk water during and after application of air barrier

3.03 INSTALLATION

A. Refer to Water Resistive Barrier Manufacturer detail drawings for installation procedures.

B. Primary water resistive barrier

1. Where required, install adhesive/primer continuously and at a rate recommended by Water Resistive Barrier Manufacturer.
    a. Henry Aquatac Primer is required for installations less than 40 °F (4 °C), and where extreme environmental conditions or extended UV exposure is anticipated.
    b. Allow adhesive/primer to cure to a tacky film prior to application of water resistive barrier.
    c. Only apply adhesive/primer to surfaces which will be covered during the same working day. Primed areas not covered at end of day must be re-primed prior to installation of water resistive barrier.
2. Peel protective film from water resistive barrier and align top of membrane, verifying proper positioning, prior to complete film removal and placement.
3. Press water resistive barrier firmly into place by applying hand pressure to the middle of the membrane and working the pressure to the edges, eliminating wrinkles and air bubbles.
4. Install water resistive barrier in shingle fashion to eliminate reverse laps.
5. Where lap adhesion is less than desired, secure lap with adhesive as recommended by the Water Resistive Barrier Manufacture.
    a. Allow adhesive to cure to a tacky film prior to subsequent air barrier installation.
6. Lab adjoining edges:
    a. Horizontal seams: two (2) inch minimum.
    b. Vertical seams: three (3) inch minimum.
7. Roll water resistive barrier and laps of water resistive barrier with termination sealant.
8. Seal permanently exposed reverse laps of water resistive barrier with termination sealant.

C. Special Considerations: Henry requires special consideration detailing where Blueskin VP100 is subject to extreme weather conditions and bulk water within a completed wall assembly. Contact Henry for further clarification.

END OF SECTION

SECTION 07 27 13

PLASTIC SHEET MEMBRANE AIR/VAPOR RETARDER

PART 1 GENERAL

1.01 SECTION INCLUDES

A. A continuous vapor retarder throughout the building to the bottom side of the wood truss bottom chords and to the inside face of the exterior wall studs.

B. A continuous vapor retarder at the exterior masonry walls to be furred, insulated, and finished with siding.

1.02 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 06 17 53 – Shop-Fabricated Wood Trusses.

C. Section 07 92 00 - Joint Sealants: Penetration sealing.

D. Section 16 – Electrical.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
   2. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
   3. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials.

B. International Code Council:
   1. IBC - International Building Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.
   2. IECC - International Energy Conservation Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.

PART 2 PRODUCTS

2.01 PRODUCTS

A. Vapor retarder:
   1. 6 mil clear polyethylene film for above grade application.

B. Tape:
   1. 3M 8087 Construction Seaming Tape.

PART 3 EXECUTION

3.01 INSTALLATION

A. Secure vapor retarder to bottom side of wood ceiling framing and to the inside face of the exterior wall studs with staples.

B. Secure air/vapor retarder to top of wall plates at exterior masonry walls and as required to secure in place until installation of exterior furring members. Air/vapor retarder shall be continuous behind furring members.

C. Air/vapor retarder shall be continuous throughout the building, including over top of interior walls and ceiling. Air/vapor retarder shall be connected to exterior wall air/vapor retarder.

D. Seams shall be lapped with 4 inches minimum. Tape all seams. Tape the seam at the transition between the ceiling and wall.

E. Completely seal any tears and punctures with tape.

F. Seal all penetrations vapor-tight with tape and/or sealant.

END OF SECTION

SECTION 07 31 16
STONE COATED METAL ROOF SHINGLES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Formed metal roofing panels with colored stone chip finish, underlayment, ridge vent, hip flashing, valley flashing, pipe flashing, eave flashing fasteners and accessories for a complete watertight roofing system.

B. Related Documents: Provisions established within General and Supplementary Conditions of the Contract, Special Provision “General Requirements for Building Construction – Section 01 – General Requirements, and the Drawings are collectively applicable to this Section.

1.02 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 – Submittals Procedures.

B. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, finishes, fasteners, accessories, and manufacturers written installation instructions.

C. Samples for Initial Selection: Manufacturer's color charts and samples consisting of units or sections of units showing the full range of colors, textures, and patterns available. Color selection by Owner.

1.03 QUALITY ASSURANCE

A. Regulatory Requirements:
1. Conform to applicable building code for roof assembly fire hazard requirements.
2. Conform to building code for minimum wind uplift resistance.

1.04 REFERENCES

A. Fire-Test-Response Characteristics: Provide DECRA Shingle with fire-test-response characteristics indicated, as determined per test method ASTM E108 – Test For Fire Resistance of Roof Covering Materials, for application and slopes indicated.
1. Fire-Test Exposure: Class A.

B. ASTM A792/A792M: Sheet Steel, Aluminum-Zinc Alloy Coated by the Hot Dip Process, Structural (physical) Quality.

C. UL 1897 and UL 580: Wind Uplift Resistance of Roof Assemblies.

D. ASTM C920: Specification for Elastomeric Joint Sealants.

E. Impact Resistance: UL 2218, Class 4.

F. Appraisal Certificates:
1. International Code Council (ICC), Whittier California, Report No. ESR 1483.
2. Underwriters Laboratories, Inc., Northbrook, Illinois, USA File No. R14710.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store and handle roofing materials to ensure dryness. Store in a dry, well-ventilated, weather tight place. Protect from corrosion, staining and traffic and wind damage. Store rolls of felt and other sheet materials on end on pallets or another raised surface.

1.06 WARRANTY

A. Manufacturing Warranty: Written, transferable, limited warranty provided by DECRA Roofing Systems, covering manufacturing defects/excessive granule loss/surface coating degradation. Refer to warranty for specifics.
   1. Warranty Period: 50 years from date of Substantial Completion.
   2. Wind Warranty: 120 mph winds, full warranty period.
   3. Hail Penetration: full warranty period.
   4. Watertightness: 5-year warranty from installing contractor for 100 materials and labor.
   5. Leak Barrier: 30-year warranty.

B. Manufacturer's Non-Prorated Period Protection Warranty: Coverage shall include a minimum of twenty (20) years non-prorated protection including cost of labor to remove and replace part or all of the shingle system affecting performance, include replacement of any or all manufacturer products and components included in the system warranty through the non-prorated and annually declining prorated duration of the warranty.

C. The following information shall be included on all guarantee and warranty documents:
   1. Manufacturer material and installation requirements may vary concerning the issuance of the non-prorated protection warranty.
   2. Include and provide all product(s), labor and installation methods necessary and as specified herein, including manufacturer requirements not found specified herein, as required by the approved manufacturer to obtain the specified warranty requested herein.
   3. All products used for adhesive and/or adherence purposes and sealants approved and/or supplied by the manufacturer shall be covered by the manufacturer non-prorated protection warranty specified herein and the State Guarantee.
   4. Existing re-installed and new metal flashing and new wood blocking mechanical securement shall be covered in the guarantee but not the manufacturer system warranty specified herein.

D. Contractor shall perform a minimum of two (2) roof system inspections during the term of this guarantee. The first inspection shall be approximately two (2) years after installation date on five (5) year guarantee with final inspection performed within last 6-months of five (5) year guarantee.

1.07 SITE CONDITIONS

A. Apply roofing in dry weather. All roofing materials installed during rain shall be removed and replaced with dry materials at Contractor's expense.

B. DO NOT apply roofing unless authorized by the Owner or approved in writing on manufacturer letterhead when the working hour's ambient temperature is below 32 degrees Fahrenheit. Under no circumstances will any seaming, flashing or adhesive activities be allowed when the ambient temperature is below 20 degrees Fahrenheit, or the wind chill factor is below 0 degrees Fahrenheit.

C. Install all rooftop mounted equipment in a watertight manner and repair any damage to sheet metal or other components related to connection and protection of the roof system.

D. Prevent materials from entering and clogging roof drains and conductors including those drains on adjacent low slope roof areas. Remove roof drain plugs when no work is taking place or when rain is forecast.

E. Protection of surfaces: Take every precaution to prevent water leakage, or debris falling into the building interior, or other such occurrences. Contractor is responsible for any and all damage to the building interior or its contents that occur as a direct cause of the Work and due to the Contractors methods and mean practice to accomplish the Work required herein.

F. Wall surfaces shall be protected with tarpaulins or other suitable cover to prevent damage, staining or discoloration that might result from operations such as removal, disposal, replacement or removing of equipment or materials to the roof surface. Windows, doorways, docks, walkways, etc. may require special protection measures.

G. The same ground cover protection shall be provided under and/or around dump truck or dump box locations at or along side the building.

H. Disposal of materials: All materials to be disposed of shall be loaded directly into trucks or drop-off dump-box by means that will prevent damage to existing or new surfaces and to control pollution. Free-fall of debris from heights over 15' will not be allowed.

I. Contractor is responsible for any charges, such as landfill fees, incurred for disposal of materials.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. DECRA Roofing Systems, Inc., 1230 Railroad Street, Corona, CA 92882 (951-272-8180), (951-272-4476 FAX); www.decra.com.

B. Metro Roof Products, Oceanside, California. Color shall be selected from manufacturer's standard colors. Local Manulfacturer's representative: Dan Hinkel (612) 221-9825.

C. Tilcor Roofing Systems, Grand Prairie, Texas. Color shall be selected from manufacturer's standard colors.

D. Unapproved manufacturer and products installed on the Project shall be cause for rejection of the roof system in its entirety and shall be completely replaced by the Contractor at no cost to the Project.

2.02 MATERIALS

A. Metal Shingle: DECRA Shingle XD two course formed interlocking panels resembling dimensional roofing shingles.
1. Material: Rolled and pressure formed, Aluminum-Zinc Alloy Coated Steel with two vertical ribs forming two flat steps, each of which shall have raised and lowered pan sections.
2. Finish: Ceramic coated colored stone chip finish.
3. Thickness: 0.0138 inches.
4. Steel: Grade 37.
5. Size: 14-1/8" wide by 52-3/8" long.
6. Exposure: 12-1/4" wide by 49-1/2" long.
7. Weight: 150 pounds per square.
8. Color: Selected by Owner from 5 standard colors.

B. Flashing:
1. Valley: DECRA Roofing Systems, Inc., Shingle Valley, Aluminum-Zinc Alloy coated Steel sheet 0.0165 inches. Pressure formed into a valley with a stone coated valley cap. Finish: Match upper exposed stone coated surface of the valley cap to the shingle material.
2. Rake / Gable Channel: DECRA Roofing Systems, Inc., Shingle Rake/Gable Channel, Aluminum-Zinc Alloy Coated Steel sheet, 0.0165 inches. Pressure formed to match roofing material, color, and finish to be applied along rakes and gables.
3. Short Course Clip: DECRA Roofing Systems, Inc., Shingle Short Course Clip, Aluminum-Zinc Alloy Coated Steel sheet, 0.0165 inches. Pressure formed for use with starting a short course or when Shingle Edge Clip w/ Drip Edge will not conform to existing eave/fascia.

4. Pipe Jack Flashing: 0.0165 inches galvanized or Aluminum-Zinc Alloy Coated Steel, clean, prime and paint to match roof material.
5. Underpan: DECRA Roofing Systems, Inc., DECRA Shingle Underpan: Aluminum-Zinc Alloy Coated Steel sheet, 0.0165 inches, pressure formed to counter flash roof penetrations matching Shingle material profile.

C. Hip & Ridge: Shingle Hip & Ridge covers hips and ridges without vents, matching shingle material, color, and finish.
1. Hips / Ridges: DECRA Roofing Systems, Inc., Shingle Hip & Ridge, Aluminum-Zinc Alloy Coated Steel sheet, 0.0165 inch. Pressure formed to match roofing material, color, and finish to be applied along hips and ridges.
2. Roof to wall flashing: DECRA Roofing Systems, Inc. XD Channel – Aluminum-Zinc Alloy coated steel sheet, 0.0165 inch pressure formed to flash along the hips and ridges.
3. Screws: Minimum No. 9 (1/4 inch diameter) x 1-1/2 inch long, corrosion resistant, black or color coordinated to match the panels.
4. Wood blocking shall be provided.

D. Ridge Vent: DECRA Ridge Vent with a DECRA Shingle Hip and Ridge.

2.03 ACCESSORIES

A. Sheet Metal Materials: Aluminum-Zinc Alloy Coated Steel sheet: ASTM A 792/A 792M, Class AZ50 coating designation; minimum Grade 37.

B. Leak Barrier Underlayment: ASTM D 1970; high temperature self-adhering, rubberized asphalt bonded to sheet polyethylene underlayment; 60 mils thick with strippable treated release paper.
1. CertainTeed WinterGuard HT.
2. GAF MetalMate Film-Surfaced Leak Barrier.
3. Owens Corning WeatherLock Flex.

C. Sealant: One-part elastomeric polyurethane, sealant as recommended in writing by panel manufacturer. Where sealant will be exposed, provide in color to match panels.
1. Standard: ASTM C920-86.

D. Fasteners: Corrosion resistant screws. Screws: Minimum No. 9, hex head, of sufficient length to penetrate substrate 1/2 inch minimum see manufacturer's instructions for fastening positions. Recommended length is 1-1/2 inch long.

E. Stack Vent Covers: Dual wall decorative vent cover. Cap Master by Mid-American Building Products (800) 521-8486 or equal. Color to be selected by Owner.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrate and conditions for compliance with requirements for maximum moisture content, soundness of roof deck and other conditions affecting performance of DECRA metal roofing. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean substrate of any projections and substances detrimental to metal panel roofing. Cover knotholes or other minor voids in substrate with sheet metal flashing secured with roofing nails.

B. Coordinate installation of metal shingles with roof deck, flashing and other adjoining work to ensure proper sequencing. Do not install roofing until vent stacks and other penetrations through roofing have been installed, are securely fastened and flashing is in place.

3.03 INSTALLATION

A. General: Comply with manufacturer's written instructions for products and applications indicated, unless more stringent requirements apply.

B. Underlayment: Apply layer of leak barrier underlayment on entire surface to receive metal shingles. Wrap up adjacent wall surfaced.

C. Install a complete system including the shingles and all metal flashings for starter clip with drip edge at the eaves, rake/gable channel at the gables, side flashing and XD channel at roof to wall flashings, vent pipe flashings, shingle valley flashing, hip and ridge flashings and ridge vents for a complete, proper and water tight water roofing system.

D. Valleys: Install in accordance with manufacturer's instructions with a minimum 6 inch overlap in direction of flow, provide continuous solid wood blocking.

E. Shingle Panels: Install DECRA Shingle XD, accessories, flashing, and hip & ridge level and plumb. Use fasteners per above specifications.
1. Install each DECRA Shingle XD® panel left to right in accordance with manufacturer's instructions. Do not create a pattern.
2. The right side of each panel must be pushed into position to engage the Side-Lap locking mechanism.
3. Fasten each panel with minimum 5 fasteners horizontally along the back flange of each panel at pre-punched tabs. Review manufacturer's instructions for fastener placement.
4. First course of panels positioned at eave will clip into Starter Clip with Drip Edge.

F. Hip & Ridge: Install Shingle Hip & Ridge along hips, ridges and rakes as indicated on approved submittals and in accordance with manufacturers written instructions. Bend and fold exposed ends of hips ridges and neatly, cap with an end cap or a piece of similar material at vented locations install over ridge vent material.

G. Install a ridge vent at all locations where shown on the drawings. Install per shingle and vent manufacturer recommendations. Cut opening in decking at ridge to meet the minimum requirement for a vented space.

H. Edge metal:
1. Edge metal shall be fabricated and sized to conceal the self-adhering ice & water backup protection membrane lapped onto fascia.
2. Edge metal intended to be lapped by another edge metal installation shall be field-cut and notched as required prior to installation to achieve a proper tight-fitting lap. Edge metal shall have proper lap minimum 1" maximum 2".
3. Edge metal intended to lap other edge metal installations shall be hand compressed prior to installation to achieve a tight fit at the lap. Nails through the edge metal laps are not acceptable.

3.04 CLEANING AND PROTECTION

A. Damaged Units: Replace panels and other components of the work that have been dented, damaged or have deteriorated beyond successful repair by finish touchup with acrylic coating and stone chip granules.

B. Cleaning: After completing installation, remove any debris from the roof.

C. Foot Traffic: Avoid walking on side laps.

3.05 DETAILS

A. Reference the DECRA Shingle XD details. Comply with these manufacturer's details for the installation of the new roofing system.

END OF SECTION

SECTION 07 46 18
PREFORMED METAL SOFFIT AND FASCIA

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preformed and prefinished metal soffit, fascia and drip edge with related accessory components.

B. Provide and install a complete system.

1.02 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 07 31 16 – Stone Coated Metal Shingles.

C. Section 07 71 24 - Seamless Gutters and Downspouts.

D. Section 07 92 00 - Joint Sealants.

1.03 REFERENCES

A. American Architectural Manufacturers Association (AAMA):
1. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
2. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
3. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
4. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

B. American Society for Testing and Materials (ASTM):
1. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
3. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

C. Federal Specification Unit (FS):
1. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Product Data: Indicate size, shape, configuration, finish, and framing system.

C. Samples: Submit samples of colors for selection.

1.05 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three (3) years documented experience.

B. Installer: Company specializing in performing the Work of this section with minimum three (3) years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Product storage and handling provisions.

B. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.

C. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

D. Prevent contact with materials which may cause discoloration or staining.

1.07 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on drawings.

1.08 WARRANTY

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Warranty provisions.

B. Warranty: Provide 20-year warranty, include coverage for degradation of panel finish including color fading caused by exposure to weather.

PART 2 PRODUCTS

2.01 PRODUCTS

A. Aluminum Fascia and Soffit:
1. Prefinished and preformed aluminum.
2. Soffit: 16-inch center vent soffit panel, System 3 by Rollex.
3. Fascia: Two pieces metal fascia to cover the fascia board – see drawings.
4. Provide all accessories and trim.

B. Drip Edge: Prefinished and preformed aluminum, ODE by Rollex.

C. Soffit Channel: Rollex ‘RS’ trim. Same material, thickness, and finish as soffit.

D. Fasteners: Manufacturer’s standard type to suit application; fastener cap same color as panel.

E. Field Touch-up Paint: As recommended by panel manufacturer.

F. Manufacturer: Rollex or equal.

G. Colors: As selected from manufacturer’s standard colors.

2.02 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Form pieces in longest practical lengths.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building framing members are ready to receive panel system.

3.02 INSTALLATION

A. Install metal soffit and fascia system in accordance with manufacturer's instructions.

B. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint. Allow to dry prior to installation.

C. Fasten soffit to supports; aligned, level, and plumb.

D. Use concealed fasteners for fastening soffit panel wherever possible.

3.03 TOLERANCES

A. Maximum Offset From True Alignment Between Adjacent Members Butting or In Line: 1/16 inch.

B. Maximum Variation from Plane or Location Indicated on Drawings: 1/4 inch.

3.04 CLEANING

A. Special Provision "General Requirements for Building Construction" - Section 01 70 00 - Execution and Closeout Requirements: Cleaning provisions.

B. Remove site cuttings from finish surfaces.

END OF SECTION

SECTION 07 46 25
PREFINISHED ENGINEERED WOOD SIDING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Factory Finished engineered wood siding, trim and fabricated corners.

B. Starter boards and strips.

C. Sealing panel joints and penetrations.

D. Prefinished metal drip flashings within siding.

E. Fasteners.

1.02 WORK INSTALLED BUT FURNISHED UNDER OTHER SECTIONS

A. Section 07 21 13 - Board Insulation: Insulation installed on sheathed walls behind siding.

B. Section 07 25 00 – Weather Barrier: Weather barrier installed over insulation behind siding.

1.03 REFERENCES

A. ASTM International (ASTM):
   1. ASTM A153 – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   2. ASTM C920 – Standard Specification for Elastomeric Joint Sealants.

B. American National Standards Institute (ANSI)
   1. ANSI A135.6 – Engineered Wood Siding.

C. APA – The Engineered Wood Association (APA):
   1. APA PS 2-10 – Performance Standard for Wood-Based Structural-Use Panels.
   2. APA PRP 108 – Performance Standards and Qualifications Policy for Structural-Use Panels.
   3. APA PR-N124 – APA Product Report, LP SmartSide Substrate Lap and Panel Siding.

1.04 SUBMITTALS

A. Product Data: siding and trim, material, construction and finish.

B. Color chart.

C. Application and installation instructions.

D. Samples: For each exposed product and texture specified, submit two samples, minimum size 6-inches long representing actual product, color, and patterns.

E. Shop Drawings: Installation details. Include drip flashing and relationship with adjacent construction.

1.05 QUALITY ASSURANCE:

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum of five (5) years documented experience.

B. Installer Qualifications: Company specializing in performing Work of this Section with minimum two (2) years documented experience with projects of similar scope and complexity.

C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store and handle in strict compliance with manufacturer's written application instructions and recommendations.

B. Protect from damage due to weather, excessive temperature, and construction operations.

1.07 WARRANTY

A. Material Warranty:
   1. Manufacturer's Warranty: 50-year transferable limited warranty with 5 year, 100 percent repair and replacement warranty, then prorated from the 6th through the 49th year from the date of installation.
   2. Warrantied failures include:
      a. Structural failures including buckling.
      b. Deterioration of materials beyond normal weathering.
      c. Fungal degradation.
      d. Cracking, peeling, separating, chipping, flaking, or rupturing of resin impregnated surface overlay.
      e. Hail damage consisting of a crack, chip, or dent in the surface overlay exceeding 3/8-inch in length or diameter. Warranty shall cover hail up to 1-3/4inch in diameter.

B. Finish Warranty: Manufacturer shall repair finishes that deteriorate within the warranty period.
   1. Manufacturer's 30-year warranty, with prorated costs after year 7 and material only after year fifteen.
   2. Deterioration includes the following:
      a. Discoloration due to chalking more than No. 8 rating when tested according to ASTM D4214.
      b. Peeling or blistering.
      c. Eroding and exposing the substrate.
      d. Discoloring due to yellowing.
      e. Discoloring due to fading more than 3 Delta E when tested according to ASTM D2244.

1.08 CLOSEOUT SUBMITTALS

A. Submit maintenance data.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. LP SmartSide, www.lpcorp.com

B. Substitutions: None.

2.02 MATERIALS

A. Siding: Prefinished and engineered Wood Siding.
   1. LP SmartSide Nickel Gap Siding
      a. Thickness: 0.5 inch.

b. Board Width: 8 inch.
c. Length: 16 feet.
d. See drawings for locations.

2. LP SmartSide 38 Series Vertical Siding
   a. Thickness: 0.354 inch.
   b. Board Width: 15.94 inch.
   c. Length: 16 feet.
   d. See drawings for locations.
3. LP SmartSide 440 Series Brushed Smooth Trim
   a. Thickness: 0.675 inch.
   b. Width: As indicated on drawings.
   c. Length: 16-feet.
   d. See drawings for locations.
4. Others:
   a. LP SmartSide 540 Outside Corner
5. Factory Finish: LP SmartSide ExpertFinish. See drawings for colors and locations.

B. Accessories:
1. Fasteners: ASTM A153
   a. Hot-dip galvanized or stainless steel nails per manufacturer recommendations.
   b. Follow manufacturer's requirements for installing sidings over foam plastic sheathing to wood structural panel sheathing.
   c. Prefinished to match siding and trim.
2. Sealant: ASTM C920, minimum Class 25 sealant. Install per requirements of Section 07 92 00, including warranties.
3. Water-Resistive Barrier: Per Section 07 25 00
4. Flashing:
   a. LP SmartFlash Metal Flashing
   b. Aluminum flashing with Kynar 500 coating
5. Touch-Up Paint.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify the Engineer of unsatisfactory preparation before proceeding.

C. Verify location of concealed framing support and anchorage.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best results for the substrate under the project conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions and drawing details.
1. Read warranty and comply with terms necessary to maintain warranty coverage.
2. Install in accordance with conditions stated in ICC-ES Evaluation Service Report.
3. Properly space joints to allow for equilibration.

B. Allow products to adjust to ambient conditions before starting installation.

C. Do not install to green wood, damage, or crooked structural framing. Do not install over rain soaked or buckled materials. Do not install if excessive moisture is present in the interior, including that from curing concrete and plaster.

D. Install in full length pieces where possible. Installed pieces may not be less than 4-feet long sections.

E. Over Wood Sheathing: Fasten siding through insulation and sheathing into studs.

F. Do not cut siding/cladding to fabricate trim, use manufacturer's trim components.

G. Install H-Moldings between siding butt joints as recommended by manufacturer.

H. Install prefinished sheet metal flashing above door and window casings, louver and fan openings, horizontal trim in field of siding, and where required by the manufacturer.

I. Install prefinished fabricated corner trim.

J. Seal around penetrations.

K. Paint exposed cut edges, blemishes, and unfinished exposed fastener with siding manufacturer's touch-up paint.

L. Follow manufacturer's specific requirements for gapping sidings.

M. At nickle gap siding butt joints, Apply a min. 1 inch wide strip of matching paint down the center of flashing prior to installation of flashing, or use a paint brush to manually apply a coating of paint to flashing after it has been installed to help ensure complete paint coverage is worked into the butt joint.

3.04 ADJUSTING AND CLEANING

A. Remove and replace damaged, improperly installed, or otherwise defective materials.

B. Clean finished surfaces in accordance with the manufacturer's written instructions and maintain in a clean condition during construction.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products.

END OF SECTION

SECTION 07 62 00
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 WORK INCLUDED

A. Includes sheet metal flashing and trim as shown on the drawings, specified herein, and as needed for a complete and proper installation.

1.02 RELATED WORK

A. Section 06 10 00 - Rough Carpentry.

B. Section 07 31 16 – Stone Coated Metal Shingles.

C. Section 07 71 24 – Seamless Gutters and Downspouts.

D. Section 07 46 25 – Engineered Wood Siding

1.03 REFERENCES

A. American Architectural Manufacturers Association (AAMA):
1. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
2. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
3. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
4. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

B. American Society for Testing and Materials (ASTM):
1. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM B32 - Standard Specification for Solder Metal.
3. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

C. National Roofing Contractors Associates (NRCA):
1. NRCA - Roofing Manual.

D. Sheet Metal and Air Conditioning Contractors (SMACNA):
1. SMACNA - Architectural Sheet Metal Manual, 6th Edition.

E. Aluminum Association (AA) - Aluminum Construction Manual:
1. Aluminum Sheet Metal Work and Building Construction.

1.04 WARRANTY

A. Provide a limited 20-year warranty on the Kynar 500 Finish against cracking, crazing, chipping, peeling, and chalking.

B. All manufactured products shall be warranted to be free of defects in material and workmanship for a period of five (5) years from date of shipment. The warranty shall cover repairing or replacing defective materials at no cost to the Owner.

1.05 QUALITY ASSURANCE

A. Applicator: Company specializing in sheet metal flashing work with five (5) years minimum experience.

1.06 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Submit Shop Drawings: Fill out and submit manufacture’s product cut sheet. Identify material profile, material type and thickness, profile dimensions, quantities, fastening methods, and installation details.

C. Submit manufacturer’s installation instructions.

D. Samples: Provide sample, when requested by Engineer, of metal flashing illustrating typical seam, external, material, and finish.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation.

C. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

PART 2 PRODUCTS

2.01 PRODUCTS

A. Miscellaneous Flashings: Counterflashings and sheet metal flashing required at mechanical equipment and other miscellaneous items shall be 24 gauge galvanized steel, ASTM A525, G90, coresteel with Kynar 500 finish of color as selected. Provide 20-year finish warranty. Construct per SMACNA Architectural Sheet Metal Manual. These flashings shall be shop bent.

B. Drip Edge: Prefinished and performed aluminum as manufactured by Rollex or equal of color as selected.

C. Nails for Fastening Flashings to Blocking: Hot dipped zinc coated steel type as recommended by flashing manufacturer.

D. Sealant: Tremco Dynomic or Sonneborn Sonolastic NP1.

2.02 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Form pieces in longest practical lengths.

C. Form shop bent material in accordance with recommendations of the SMACNA Architectural Sheet Metal Manual.

D. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.

B. Verify roof termination and base flashings are in place, sealed, and secure.

C. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

A. Install manufactured material in accordance with manufacturer's instruction.

B. Install starter and edge strips, and cleats before starting installation.

C. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

D. Seal metal joints watertight.

E. Conform to drawing details and details included in SMACNA and NRCA manual for installation of shop bent material.

F. Weather lap joints of counterflashings on to roof sheathing 3 inches minimum and seal weather tight with plastic roof cement.

END OF SECTION

SECTION 07 71 24
SEAMLESS GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aluminum gutters, downspouts, and accessories as shown on the drawings, specified herein, and as needed for a complete and proper installation.

1.02 RELATED SECTIONS

A. Section 07 31 16 – Stone Coated Metal Shingles.

B. Section 07 46 18 - Preformed Metal Soffit and Fascia.

1.03 REFERENCES

A. American Architectural Manufacturers Association (AAMA):
   1. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
   2. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
   3. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
   4. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

B. American Society for Testing and Materials (ASTM):
   1. ASTM B32 - Standard Specification for Solder Metal.
   2. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

C. Federal Specification Unit (FS):
   1. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.

D. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):
   1. Architectural Sheet Metal Manual.

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 – Submittals Procedures: Submittal provisions.

B. Shop Drawings: Indicate configurations.

C. Product Data: Submit data on prefabricated components.

D. Submit samples of colors for selection.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with SMACNA Manual.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 – Product Requirements: Product storage and handling provisions.

B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope to drain.

C. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

1.07 WARRANTY

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Warranty provisions.

B. Provide a limited 20 year warranty on the finish against cracking, crazing, blistering, chipping, peeling, chalking, and fading.

PART 2 PRODUCTS

2.01 MATERIALS

A. Gutters:
1. 0.032 inch prefinished and preformed aluminum.
2. 7 inch seamless ‘K’ style, supported by concealed brackets.
3. Rollex aluminum gutter coil.

B. Downspouts:
1. Pefinished and preformed aluminum.
2. 4 inch by 5 inch closed.
3. Rollex Rainware.

C. Color as selected by Engineer from manufacturer’s standard colors to match roof color, see drawings.

D. Splash Block:
1. Concrete Splash Block.
2. 12” x 30”.

2.02 COMPONENTS

A. End Caps, Downspout Elbows, Joint Fasteners, Expansion Joints, Welded Mitered Corners: Profiled to suit gutters and downspouts.

2.03 FABRICATION

A. Field measure site conditions prior to fabricating work.

B. Form gutters and downspouts of profiles and sizes indicated.

C. Fabricate with required connection pieces.

D. Form sections square, true, and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.

E. Fabricate gutter and downspout accessories; seal watertight.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work and conditions are as instructed by the manufacturer.

B. Beginning of installation means acceptance of substrate.

3.02 INSTALLATION

A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions. Provide a watertight system.

B. Provide elbow on end of downspout to direct water from building. Maintain 4 inch clearance between end of elbow and splash block.

C. Set splash blocks under downspouts.

END OF SECTION

SECTION 07 92 00
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparing sealant substrate surfaces.

B. Sealant and joint backing.

1.02 RELATED SECTIONS

A. Section 3 - Concrete: Sealants used in conjunction with cast-in-place concrete.

B. Section 06 22 10 - Interior Trim: Sealants used in conjunction with trim.

C. Section 07 46 46 - Mineral Fiber-Cement Siding: Sealants used in conjunction with trim.

D. Section 08 15 80 - Vinyl Windows: Sealants used in conjunction with windows.

E. Section 08 16 00 - Fiberglass Reinforced Polyester Door and Frame System: Sealants used in conjunction with door frames.

F. Section 08 81 00 – Glass Glazing: Glazing sealants and accessories.

G. used in conjunction with plumbing penetrations, fixtures, and equipment.

H. Section 23 - Heating, Ventilating, and Air Conditioning: Sealants used in conjunction with mechanical penetrations, fixtures, and equipment.

I. Section 26 - Electrical: Sealants used in conjunction with electrical penetrations.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM) International:
   1. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
   2. ASTM C1193 - Standard Guide for Use of Joint Sealants.
   3. ASTM C1382 - Test Method for Determining Tensile Adhesion Properties of Sealants When Used In Exterior Insulation and Finish Systems (EIFS) Joints.
   4. ASTM D1667 - Standard Specification for Flexible Cellular Materials – Poly (Vinyl Chloride) Foam (Closed-Cell).
   5. ASTM D1056 – Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.

B. Sealing and Waterproofers Institute (SWI):
   1. SWI - Sealant and Caulking Guide Specification.

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Product Data: Indicate sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

C. Manufacturer’s Installation Instructions: Submit special procedures, surface preparation, and perimeter conditions requiring special attention.

D. Warranty: Include coverage for installed sealants and accessories failing to achieve watertight seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

1.05 QUALITY ASSURANCE

A. Conform to Sealant and Waterproofers Institute requirements for materials.

B. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.

C. Applicator qualifications:
1. Applicator shall have at least three (3) years experience in installing materials of types specified and shall have successfully completed at least three (3) projects of similar scope and complexity.
2. Applicator shall designate a single individual as project foreman who shall be on site at all times during installation.

D. Single source responsibility for joint sealants:
1. Obtain joint sealants from single manufacturer for each different product required to ensure compatibility.
2. Manufacturer shall instruct applicator in procedures for intersecting sealants.

E. Perform work in accordance with ASTM C1193 guidelines, except where more stringent requirements are indicated or specified.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements.

B. Do not install solvent curing sealants in enclosed building spaces.

C. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.07 PRODUCT STORAGE AND HANDLING

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Product storage and handling provisions.

B. Deliver the materials to the job site in the manufacturer’s unopened containers with all labels intact and legible at time of use.

C. Store materials in accordance with manufacturer’s recommendations with proper precautions to ensure fitness of material when installed.

1.08 SEQUENCING AND SCHEDULING

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Work coordination provisions.

B. Coordinate the work of this Section with all Sections referencing this Section.

1.09 SUBSTRATE CONDITIONS

A. Provide joints properly dimensioned to receive the approved sealant system.

B. Provide joint surfaces that are clean, dry, sound and free of voids, deformations, protrusions, and contaminants which may inhibit application or performance of the joint sealant.

1.10 WARRANTY

A. Deliver to the Engineer signed copies of the following written warranties against adhesive and cohesive failure of the sealant and against infiltration of water and air through the sealed joint for a period of three (3) years from date of completion.
   1. Manufacturer's standard warranty covering sealant materials.
   2. Applicator's standard warranty covering workmanship.

PART 2 PRODUCTS

2.01 GENERAL

A. Compatibility:
   1. Provide joint sealants, joint fillers, and accessory joint materials that are compatible with one another and with joint substrates under project conditions.
   2. Install joint sealants, joint fillers, and related joint materials that are nonstaining to visible joint surfaces and surrounding substrate surfaces.

B. Provide colors selected by Engineer from manufacturer's standard color range, unless noted otherwise.

2.02 SEALANTS

A. Low Modulus Silicone Sealant:
Tremco Spectrem 3, GE SCS 2000, Dow 795, Pecora 895 Sikasil WS295, Tremco Spectrem 4
   1. Locations to be used:
      a. Vertical joints which are bordered on one or both sides by a porous building material such as concrete, natural stone, or masonry or a non-porous building material such as painted metal, anodized aluminum, mill finish aluminum, stainless steel, vinyl siding, PVC, or porcelain tile.
      b. Interior and exterior door frames perimeters.
      c. Interior and exterior window and louver perimeters.
      d. Exterior concrete masonry, brick and stone joints.
      e. Exterior wall penetrations of plumbing, HVAC, and electrical items.
   2. Primer for mortar, masonry, concrete, and other porous substrates: Tremsil Silicone Porous Primer.

B. Polyurethane Sealant:
   1. Tremco Dymonic 100, Vulkem 116, BASF MasterSeal NP1 or NP2. Sikaflex 201US
   2. Color: Selected by Engineer.
   3. Locations to be used:
      a. Vertical joints which are bordered on one or both sides by a porous building material such as concrete, natural stone, or masonry or a non-porous building material such as painted metal, anodized aluminum, mill finish aluminum, stainless steel, vinyl siding, PVC, or porcelain tile.
      b. Interior and exterior door frames perimeters.
      c. Interior and exterior window and louver perimeters.
      d. Exterior wall penetrations of plumbing, HVAC, and electrical items.

C. Medium Modulus Silicone Sealant:
   1. Dow Corning 786, GE SCS1700 Sanitary, Tremsil 200, Sikasil N Plus.
   2. Mildew-resistant, fungicide.
   3. Color: White at plumbing fixtures. Clear at countertops.
   4. Locations to be used:
      a. Perimeter of countertops
      b. Perimeter of plumbing fixtures.

D. Self-Leveling Polyurethane Sealant:
   1. BASF MasterSeal SL 1, Vulkem 45SSL, Sikaflex 1CSL.
   2. For areas where the slope of the slab makes self-leveling material impractical BASF MasterSeal SL 2, Vulkem 45SSL, Sikaflex 2cNS.
   3. Color: Match floor color.
   4. Locations such as at interior and exterior concrete slab control and perimeter expansion joints.

E. Interior Paintable Sealant
   1. Tremco Dymonic FC or Sika Hyflex 150.

F. Semi-Rigid Floor Joint Filler:
   1. Pecora Dynapoxy EP-800, Euclid Chemical EUCO-700, WR Meadows Rezi-Weld Flex.
   2. Location to be used: Interior concrete slab sawed control joints.

2.03 ACCESSORIES

A. Primer: Non-staining type, as recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, as recommended by sealant manufacturer; compatible with joint forming materials.

C. Backer Rod: Polyethylene foam rod or rope or other compatible non-waxing, non-extruding, non-staining resilient material as recommended by sealant manufacturer, closed cell, sized 25 percent wider than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

E. Masking Tape: Non-staining, non-absorbent tape product compatible with joint sealants and adjacent joint surfaces that is suitable for masking.

PART 3 EXECUTION

3.01 EXAMINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirement: Coordination and project conditions.

B. Verify that joint openings are ready to receive work and field measurements are as shown on Drawings and recommended by the manufacturer.

C. Beginning of installation means acceptance of substrates.

3.02 PREPARATION

A. Prepare surfaces to receive sealants in accordance with sealant manufacturer’s instructions and recommendations.

B. Examine joint sizes and correct as required to allow for anticipated movement and to achieve proper width/depth ratio per manufacturer’s recommendations for specified sealant.

C. Thoroughly clean joint surfaces using cleaners approved by sealant manufacturer, whether primers are required or not.
   1. Remove all traces of previous sealant and joint backer by mechanical methods, such as by cutting, grinding and wire brushing, in manner not damaging to surrounding surfaces.
   2. Remove paints from joint surfaces except for permanent, protective coatings.

3. Remove wax, oil, grease, dirt film residues, temporary protective coatings and other residues by wiping with cleaner recommended for that purpose. Use clean, white, lint-free cloths and change cloths frequently.
4. Remove loose materials and foreign matter.
5. Remove dust by blowing clean with oil-free, compressed air.

D. Verify that joint backing and release tapes are compatible with sealant.

E. Measure joint dimensions and size materials to achieve required width/depth ratios.

F. Protect elements surrounding the work of this Section from damage or disfiguration.

3.03 INSTALLATION

A. Install sealant in accordance with manufacturer's instructions, and SWI "Sealant: The Professional's Guide".

B. Where necessary to protect adjacent surfaces, mask adjacent surfaces with tape prior to priming and/or caulking.
1. Use masking tape where required to prevent sealant or primer contact with adjoining surfaces that would be permanently stained or otherwise damaged by such contact or the cleaning methods required for removal.
2. Apply tape so as not to shift readily and remove tape immediately after tooling without disturbing joint seal.

C. Provide backer rod uniformly to depth required by sealant manufacturer for proper joint design using a blunt instrument.
1. Fit securely by compressing backer material 25 percent to 50 percent so no displacement occurs during tooling.
2. Avoid stretching or twisting joint backer.
3. Install to achieve a neck dimension no greater than 1/3 the joint width.

D. Install bond breaker where backer rod is not used or where recommended by sealant manufacturer, adhering strictly to the manufacturers installation requirements.

E. Prime joint substrates where required.
1. Use and apply primer according to sealant manufacturers recommendations.
2. Confine primers to sealant bond surfaces; do not allow spillage or migration onto adjoining surfaces.
3. Prime immediately prior to caulking.

F. Install sealants immediately after joint preparation.

G. Install sealants to fill joints completely from the back, without voids or entrapped air, using proven techniques, proper nozzles, and sufficient force that result in sealants directly contacting and fully wetting joint surfaces.

H. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

I. Install sealants to uniform cross-sectional shapes with depths relative to joint widths that allow optimum sealant movement capability as recommended by sealant manufacturer.

J. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

K. Tool sealants in manner that forces sealant against back of joint, ensures firm, full contact at joint interfaces and leaves a finish that is smooth, uniform and free of ridges, wrinkles, sags, air pockets and embedded impurities. Provide concave tooled joints.

L. Remove sealant from adjacent surfaces in accord with sealant and substrate manufacturer recommendations as work progresses.

M. Protect joint sealants from contact with contaminating substances and from damages. Cut out, remove, and replace contaminated or damaged sealants, immediately, so that they are without contamination or damage at time of substantial completion.

N. Clean adjacent surfaces immediately and leave work neat and clean. Remove excess and droppings using recommended cleaners as work progresses. Remove masking tape immediately after tooling of joints.

3.04 CLEANING AND REPAIRING

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Cleaning provisions.

B. Clean adjacent soiled surfaces.

C. Repair or replace defaced or disfigured finishes caused by work of this Section.

3.05 PROTECTION OF FINISHED WORK

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Protecting installed work.

B. Protect sealants until cured.

END OF SECTION

SECTION 08 15 80

VINYL WINDOWS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Solid Vinyl Windows.

1.02 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used.

B. Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work; and installation requirements.

PART 2 PART 2 - PRODUCTS

2.01 VINYL WINDOWS

A. Vinyl Awning Window:
   1. Pella 250 Awning Window
   2. Approved equal

B. Vinyl Single-Hung Windows:
   1. Pella Encompass Single-Hung Window
   2. Approved equal

C. Frame:
   1. 2 ¾ inch frame depth with integral nailing fin.

D. Grilles:
   1. Dual-Pane Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass. Patterns are Custom – see drawings. Interior and exterior grille color is White.

E. Color: Manufacturer’s standard white.

F. Locks: Zinc die-cast hook latch locks, color as selected by Engineer from manufacturer’s standard colors .

G. Weather Stripping: Manufacturer’s standard.

H. Screens: Formed aluminum frames with charcoal fiberglass mesh screens.

I. Glazing:
   1. Insulated glass consisting of two panes of clear tempered glass. Refer to 08 81 00 Glazing – Type A Glass.
   2. Low E2 coating.
   3. Argon gas filled airspace.
   4. SHGC of 0.70 or less.
   5. U-factor of 0.30 or better.
   6. VT of 0.6 or better.

J. Hardware
   1. Awning
      a. Roto Operator: Dual arm with fold down crank handle on sill.
      Locks: Factory-installed, zinc-die-cast, single-handle on each jamb, zinc-die-cast, multi-point lock.

b. Color: Match to window interior.

2. Hung Window
   a. Balances: Inverted Constant Force Stainless Steel Coil Balances.
   b. Locks: Factory-installed, zinc-die-cast, self-aligning, cam-action locks located on check rail.
   c. Sash Locks: Two sash locks installed on windows with minimum of 29-1/2 inches frame width.
   d. Tilt Latches: Factory-installed, zinc-die-cast, located on check rail of lower sash and the top rail of the upper sash.
   e. Fasteners: Corrosion-resistant, PVC-compatible material.
   f. Hardware Finish: Matches window interior.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install window unit plumb, level and square with no distortion of frame members.

C. Fasten in place to steel framing through the window nailing fin with corrosion resistant screws with flat heads.

D. Fill perimeter frame to wall opening cavity with batt insulation. Do not use expansive foam insulation.

E. Apply approved sealant in accordance with Section 07.

F. Do not puncture prefinished exterior surfaces. Refer to installation instructions for complete installation recommendations.

3.02 ADJUSTING AND CLEANING

A. Adjust operating sash and hardware to provide tight fit at contact points and at the weather stripping for smooth operation.

B. After installation adjust units for proper operation, without binding, sticking, or racking.

C. Remove excess sealant materials and visible labels from glass. Clean glass surfaces promptly after installation.

D. Initiate and maintain all protection and other precautions required to ensure windows are in acceptable condition at time of substantial completion.

3.03 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 08 16 00
FIBERGLASS REINFORCED POLYESTER DOOR AND FRAME SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fiberglass reinforced polyester doors and frames.

1.02 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry: Wall opening construction.

B. Section 07 21 16 - Blanket Insulation: Insulation for frame.

C. Section 07 92 00 - Joint Sealants: Perimeter sealing.

D. Section 08 71 00 - Door Hardware.

E. Section 09 91 00 - Painting: Field painting of door and frames.

F. Section 26 - Electrical: Electrical security hardware.

1.03 REFERENCES

A. Americans with Disabilities Act (ADA) of 1990, Accessibility Guidelines for Buildings and Facilities, 2010 edition.

B. American National Standards Institute (ANSI):
   1. ANSI A117.1 - 2003 - Accessible and Usable Buildings and Facilities.

C. American Society for Testing and Materials (ASTM):
   1. ASTM C1363 - Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus.
   2. ASTM E413 - Standard Classification for Rating Sound Insulation.

D. International Code Council:
   1. IBC - International Building Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.
   2. IECC - International Energy Conservation Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.

E. National Fire Protection Association (NFPA):
   1. NFPA 80 - Standard Fire Doors and Other Opening Protectives.
   2. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.

F. Underwriters Laboratories (UL):
   1. UL9 - Fire Tests of Window Assemblies.
   2. UL10B - Fire Tests of Door Assemblies.
   3. UL10C - Positive Pressure Fire Tests of Door Assemblies.

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Shop Drawings: Indicate door elevations, internal reinforcement, closure method, and finish.

C. Product Data: Indicate door configurations, location of cutouts for hardware reinforcement, and manufacturer literature.

D. Manufacturer's Installation Instructions: Submit special installation instructions.

E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Conform to requirements of ANSI A250.8, SDI-100 and ANSI A117.1.

1.06 QUALIFICATIONS

A. Manufacturer: Company specializing in the manufacture of FRP doors and frames with a minimum of 10 years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Special Provision "General Requirements for Building Construction" - Section 01 60 00 - Product Requirements: Product storage and handling provisions.

B. Accept doors on site in manufacturer's packaging. Inspect for damage.

C. Store doors and frames at the building site off the ground, under cover with adequate ventilation. If the door wrapper becomes wet, remove immediately. Store vertically with the least possible angle. Do not stack horizontally.

1.08 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

1.09 COORDINATION

A. Coordinate work with wall opening construction, glazing, and hardware installation.

B. Coordinate electric security hardware installation and wiring connections.

1.10 WARRANTY

A. Special Provision "General Requirements for Building Construction" - Section 01 70 00 - Execution and Closeout Requirements: Warranty provisions.

B. Warranty:
1. Furnish a one (1) year warranty for products to be free of defects in materials and workmanship.
2. Furnish a 10 year corrosion warranty against degradation or failure due to corrosion.

PART 2 PRODUCTS

2.01 PRODUCTS

A. Manufacturers - non-rated doors and frames:
1. Chem-Pruf, Brownsville, Texas; (800) 444-6424.
2. Corrim Company, Oshkosh, Wisconsin; (920) 231-2000.
3. FRP Composites, Wisconsin Rapids, Wisconsin; (715) 421-3770.
4. Simon Door Company LLC, Brownsville, Texas; 866-894-7511.
5. Tiger Door, Inc., Omaha, Nebraska; (888) 891-4416.
6. Special-Lite.
7. Substitutions: None.

B. Manufacturers - rated doors and frames:
   1. Simon Door Company, LLC.
   2. Tiger Door, Inc.
   3. Substitutions: None.

C. Doors and Frames
   1. Flush type fiberglass reinforced plastic - solid core doors and frames.
   2. System Thermal Transmittance: U-value of not more than 0.087 nominal BTU per AAMA 15031.

2.02 DOOR CONSTRUCTION

A. FRP door panels shall be made of fiberglass-reinforced plastics using resins and reinforcements tailored to the corrosive environment peculiar to particular project. Door panel shall have a fiberglass content of not less than 25 percent by weight and all exterior surfaces shall be treated with ultra-violet inhibitors. The door panels shall be flush construction having no seams or cracks. All mortises shall be provided by the manufacturer. Unless otherwise specified, door thickness shall be nominal 1-3/4 inches.

B. Face Sheets:
   1. One continuous piece of FRP material of suitable structural integrity and resin composition to provide a door panel with the ability to perform reliably in the specified environment and physical constraints.
   2. Standard face sheets shall be manufactured using a corrosion-resistant resin system with light stabilizing additives. The resin shall be reinforced with fiberglass.
   3. Face sheets shall be 0.070 inch to 0.125 inch thickness.

C. Core: All voids between the door faces shall be completely filled with expanded polyurethane foam, minimum density 4 pounds per cubic foot, maximum flame developed index less than 25 in accordance with ASTM E84.

D. Stiles and Rails: Door panels shall be constructed with the use of a full stile and rail structure. Doors that do not have an engineered stile and rail system are not acceptable. The stile and rail system is to be fabricated entirely from FRP components and shall, of themselves, provide the structural integrity for the door panels. The stile and rail system of itself shall provide an impenetrable barrier between the edge of the door and the core material. The stiles and rails shall provide the primary support for hardware accessories and attachments. Pultrusion: In compliance with pultrusion industry standards.

E. Reinforcements: Door panels shall be adequately reinforced and compression members fabricated from suitable corrosion resistant materials so as to accommodate hinges, closer units, locksets, kickplates, push pull plates, exit devices, strikes, etc. No wood blocking and steel or aluminum plates, ribs, fitting, or fasteners are to be used.

F. Thru-bolting: Doors shall contain sufficient internal reinforcing in the areas of thru-bolt hardware as specified. Reinforcement shall be a corrosion-resistant compression member with the ability to resist typical thru-bolt torquing and maintain the sealed integrity of the panel.

G. Finish: Standard coat to be gray or white, matte finish, paintable.

2.03 FRAME CONSTRUCTION

A. One-piece molded cross-section with molded stop, fabricated entirely from FRP materials.

B. Frames shall be reinforced with anchor blocks and prepared for the attachment of hinges, closer units, panic exit devices and any other pertinent hardware. Mortises for the hinges shall be prepared by the factory. All hardware reinforcements will be made from polymer materials, unless alternates are approved.

C. Corner Joints: Head and jamb members shall be standard 45 degrees miter, providing a neatly mitered corner connection, fabricated for Knocked Down (KD) field assembly. Jambs and header shall be joined at corners with hidden FRP angle chips and stainless steel flat head screws. Screws shall not be visible on interior or exterior frames faces. Chemically welded frames are acceptable.

D. Finish: Standard coat to be gray or white, minimum 15 mils thick, matte finish, paintable.

E. Provide drilled holes in frame for silencers.

F. Provide mortar guard box.

2.04 ACCESSORIES

A. Removable Glazing Stops: Rolled FRP channel shape, batted corners; prepared for counter sink style tamper-proof stainless steel screws; stops must not extend beyond face of door.

B. Hardware: All doors and frames shall be machined using templates available from the manufacturer of specified hardware. Doors and frames shall be internally reinforced for specified surface hardware before core is installed in door. Hardware shall be field installed.

C. Astragals for double doors without mullions shaped specifically for double doors.

D. Fasteners: Stainless steel. Conceal fasteners wherever possible.

E. Frame Silencers: Resilient rubber, fitted into drilled holes. Provide four (4) single silencers for single doors on strike side. Provide four (4) single silencers on frame head for each door at double doors without mullions.

2.05 FABRICATION

A. Perform fabrication operations, including cutting, fitting, forming, drilling and grinding of material in manner which prevents damage to exposed surfaces.

B. Continuity: Maintain accurate relation of planes and angles, with hairline fit of contacting members.

C. Clearance: Door shall be manufactured with proper hinge rail clearance depending upon hinge type used, and 1/8 inch at head, 1/8 inch at lock rail, and 3/16 inch at bottom rail above threshold or finished floor without threshold.

2.06 FINISHING

A. Factory finish, polyurethane semi-gloss, smooth facesheet, color to be manufacturer's standard white.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that opening sizes and tolerances are acceptable.

B. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's requirements.

B. Coordinate installation of doors and frames with installation of hardware specified in Section 08 71 00.

C. Install doors and frames in accordance with SDI-100 and as specified in NFPA 80.

D. Coordinate with wall construction for anchor placement.

E. Coordinate installation of grilles specified in Section 23.

3.03 ADJUSTING

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Adjustment provisions.

B. Adjust door for smooth and balanced door movement.

END OF SECTION

SECTION 08 36 13
SECTIONAL OVERHEAD DOORS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Upward acting overhead sectional door.

B. Operating hardware, supports, and controls.

1.02 RELATED WORK

A. Section 06 10 00 - Rough Carpentry: Rough wood blocking for door opening.

B. Section 13 34 00 - Fabricated Engineered Structures: Wall opening construction.

C. Section 13 34 20 - Pre-Engineered Pole Building and Components: Wall opening construction.

D. Section 26 - Electrical: Empty conduit from control stations to door operator.

E. Section 26: Electrical service to disconnect located near door operator.

1.03 REFERENCES

A. ASTM International:
1. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
3. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors By Uniform Static Air Pressure Difference.

B. Door and Access Systems Manufacturers Association:
1. ANSI / DASMA 102 latest version - Specifications for Sectional Overhead Type Doors.
2. ANSI / DASMA 105 latest version – Test Method for Thermal Transmittance and Infiltration of Garage Doors and Rolling Doors.
3.

C. National Electrical Manufacturers Association:
1. NEMA MG 1 - Motors and Generators.

1.04 REGULATORY REQUIREMENTS

A. Conform to applicable code for motor and motor control requirements.

1.05 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Shop Drawings: Submit shop drawing for approval prior to fabrication. Include detailed plans, elevations, details of framing members, required clearances, anchors, and accessories. Include relationship with adjacent materials.

C. Product Data: Submit manufacturer’s product data and installation instructions for each type of sectional door. Include both published data and any specific data prepared for this project.

D. Submit ANSI/DASMA 105-2012 tested U factor.

1.06 OPERATION AND MAINTENANCE DATA

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Submittal provisions.

B. Operation and Maintenance Data: Include data for motor and transmission, shaft and gearing, lubrication frequency, control adjustments, and spare part sources.

1.07 QUALITY ASSURANCE

A. Manufacturer: Sectional doors shall be manufactured by a firm with a minimum of five (5) years of experience in the fabrication and installation of sectional doors. Manufacturers proposed for use, which are not named in these specifications, shall submit evidence of ability to meet performance and fabrication requirements specified, and include a list of five (5) projects of similar design and complexity completed within the past five (5) years.

B. Installer: Installation of sectional doors shall be performed by the authorized representative of the manufacturer.

C. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

1.08 WARRANTY

A. Furnish ten (10) year manufacturer’s warranty against delamination of the door panels.

B. Furnish a manufacturer’s workmanship and material for one (1) year on the springs and two (2) years on the operator.

PART 2 PRODUCTS

2.01 PRODUCTS

A. Manufacturer and Model:

2-inch door, R= ~16

1. Overhead Door Company Thermacore Series 592.
2. Clopay 3720 Series.
3. Wayne Dalton Thermospan 200.
4. Raynor ThermaSeal TM200.
5. Haas Door Model CHT-2016.
6. CHI Model 3216.
7. No substitutions.

2.02 MATERIALS

A. Door assembly:

B. The tested ANSI/DASMA 105-2017 U factor shall be 0.16 or better.

C. As a minimum comply with ANSI/DASMA 102-2018 or as specified within.

D. Comply with the requirements of UL325

E. Finish and Color: Two coat baked-on polyester with white exterior and interior color with Kynar finish.

F. Windload Design: The design wind load shall be 20 psf.

G. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.

H. Lock: Tumbler keyed lock.

I. Weather stripping: EPDM rubber seals fitted inside joints between sections. EPDM rubber bulb-type strip at bottom. Header seal and jamb weather stripping.

J. Track: Provide standard lift clearance 3-inch track.

K. Manual Operation: Chain hoist.

L. Lift mechanism shall be a 10,000 cycle torsion spring on cross head shaft with braided steel lift cables.

M. Electric Motor Operator: Side mount operator, Micanan Model PRO_GH VFD with all standard features or approved equal prior to bidding. 1 hp, 1 phase, 115 volt motor, soft start soft stop speed control, timer to close, operator mounted variable frequency drive inerter, emergency chain hoist, door speeds up to 24 inches per second, and 2 year warranty.

N. Operation Controls: Push-button operated control stations with open, close, and stop buttons for flush mounting, for both interior and exterior location. The control stations shall be water tight per NEMA 4 for a wet environment. Provide and install a UL 325 approved Warning Placard.

O. Provide two remote control wireless openers with an outside antenna.

P. Entrapment Protection:

Q. One set of NEMA 4 photoelectric sensors mounted no more than 6 inches above the floor.

R. A second set of NEMA 4 photoelectric sensors mounted 30 inches above the floor.

S. Install both sets parallel with the floor.

T. Windows: Aluminum sash section with ½ inch insulated DSB glazing as shown on the drawings.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify that wall openings are ready to receive work and opening dimensions and tolerances are within limits.

B. Verify electric power is available and of correct characteristics.

C. Beginning of installation means acceptance of existing surfaces.

3.02 PREPARATION

A. Prepare opening to permit correct installation of door unit.

3.03 INSTALLATION

A. Install door unit assembly in strict accordance with manufacturer’s instructions and recommendations.

B. Comply with UL325 and ANSI/DASMA 102.

C. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.

D. Securely brace door tracks suspended from structure. Secure tracks to structural members only.

E. Fit and align door assembly including hardware, level and plumb, to provide smooth operation.

F. Push button controls are to be located where shown on the drawings and must be in sight of the overhead door it controls. Mount the Warning Placard in a location in compliance with UL325 in a location visible from the controller and overhead door.

G. Coordinate installation of electrical service to the unit by electrical contractor. Complete wiring from disconnect to unit components. Install and connect the low voltage wiring for the push button controls, bottom edge, and photo eye.

H. Instruct Owners personnel in proper operating procedures and maintenance schedule.

3.04 ADJUSTING AND CLEANING

A. Test sectional doors for proper operation and adjust as necessary to provide proper operation without binding or distortion.

B. Touch-up damaged coatings and finishes and repair minor damage. Clean exposed surfaces using non-abrasive materials and methods recommended by manufacturer of material or product being cleaned. Remove labels and visible markings.

END OF SECTION

SECTION 08 71 00
DOOR HARDWARE

PART 1 GENERAL

1.01 WORK INCLUDED

A. Hardware for hollow steel, wood, and fiberglass reinforced polyester doors and frames.

B. Thresholds.

C. Gasketting.

1.02 WORK FURNISHED BUT INSTALLED UNDER OTHER SECTIONS

A. Furnish templates to Section 08 16 00 for door and frame preparation.

1.03 RELATED WORK

A. Section 08 16 00 - Fiberglass Reinforced Polyester Door and Frame System.

1.04 REFERENCES

A. American National Standards Institute (ANSI):
   1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
   2. ANSI A156 - Complete Set of 24 BHMA Standards (A156 Series) with Binder.

B. Americans with Disabilities Act (ADA) of 1990, Accessibility Guidelines for Buildings and Facilities, 2010 edition.

C. Architectural Woodwork Institute (AWI).

D. Builders' Hardware Manufacturers Association (BHMA).

E. Door and Hardware Institute (DHI).

F. Intertek Testing Services (Warnock Hersey Listed):
   1. WH - Certification Listings.

G. International Code Council:
   1. IBC - International Building Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.
   2. IECC - International Energy Conservation Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.

H. National Fire Protection Association (NFPA):
   1. NFPA 80 - Standard for Fire Doors, Fire Windows.
   2. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.
   3. NFPA 101 - Life Safety Code.

I. National Association of Architectural Metal Manufacturers (NAAMM).

J. Steel Door Institute (SDI).

K. Underwriters Laboratories Inc. (UL):
   1. UL 10B - Fire Tests of Door Assemblies.
   2. UL 305 - Panic Hardware.
   3. UL - Building Materials Directory.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with the following requirements:
   1. ANSI A156 series.
   2. NFPA 80.
   3. UL 305.

1.06 CLOSEOUT SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Closeout provisions.

B. Project Record Documents: Record actual locations of installed cylinders and their master key code.

C. Operation and Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

D. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.07 QUALIFICATIONS

A. Manufacturers: Companies specializing in manufacturing door hardware with minimum three (3) years experience.

B. Hardware Supplier: Company specializing in supplying commercial door hardware with three (3) years documented experience.

1.08 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Submit schedule.

C. Shop Drawings: Indicate locations and mounting heights of each type of hardware.

D. Product Data: Submit catalog cuts.

E. Samples: Submit one (1) sample of typical hinge, latchset, lockset, and closer, illustrating style, color, and finish.

F. Submit manufacturer’s parts lists, templates, and installation instructions.

G. Special Provision “General Requirements for Building Construction” - Section 01 40 00 - Quality Requirements: Manufacturer’s certificate provisions.

H. Submit manufacturer’s certificate that fire-rated hardware meets or exceeds specified requirements.

I. All hardware schedules shall be vertical format.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Product storage and handling provisions.

B. Package hardware items individually with necessary fasteners, instrumentations, and templates; label and identify package with door opening code to match hardware schedule.

C. Protect hardware from theft by cataloging and storing in secure area.

1.10 COORDINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Coordination provisions.

B. Coordinate work of this Section with other directly affected Sections involving manufacturer of any internal reinforcement for door hardware.

C. Provide templates or actual hardware as required to ensure proper preparation of doors and frames.

D. Coordinate Owner’s keying requirements during course of work, prior to submittal of shop drawings.

1.11 WARRANTY

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Warranty provisions.

B. Closer: Furnish 10 year warranty.

1.12 MAINTENANCE MATERIALS

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Maintenance materials.

B. Furnish special wrenches and tools applicable to each different or special hardware component.

C. Furnish maintenance tools and accessories supplied by hardware component manufacturer.

1.13 EXTRA MATERIALS

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Extra material provisions.

B. Provide 10 extra key lock cylinders for each master keyed group.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Butt Hinges: Hager, McKinney, PBB, Stanley.

B. Geared Hinges: Roton, Pemco, Hager.

C. Latch Sets: Dorma, Schlage, Sargent.

D. Push/Pulls: Builders Brass, Hiawatha, Rockwood.

E. Cylinder Locks: Schlage.

F. Exit Devices: Dorma, Sargent, Von Duprin.

G. Closers: Dorma, LCN.

H. Overhead Holders: Glynn Johnson, Architectural Builders Hardware.

I. Manual Bolts: Hager, Ives, Rockwood.

J. Thresholds and Gasketting: National Guard, Reese, Zero, Pemco.

K. Protection Plates: Builders Brass, Hager, Hiawatha, Rockwood.

L. Latch Guards: Hager, Ives.

M. Electric Strikes: HES. HES 9600 at doors with exit devices and HES 1006 at doors with lock sets.

N. Substitutions: None.

2.02 KEYING

A. Supply construction core for each exterior door.

B. Door Locks: Key per Owner requirements to existing master key systems at substantial completion.

C. Supply two (2) keys for each lock and per Owner requirements.

2.03 FINISHES

A. Finishes are identified in Schedule at end of this Section.

PART 3 EXECUTION

3.01 EXAMINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.

C. Verify that power supply is available to power operated devices.

D. Beginning of installation means acceptance of substrates.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer’s instructions and requirements of SDI, NFPA 80, and BHMA.

B. Use the templates provided by hardware item manufacturer.

C. Mounting heights for hardware from finished floor to centerline of hardware item shall comply with ADA, ANSI, and BHMA.

D. Conform to ADA and ANSI for positioning requirements for accessibility.

3.03 ADJUSTING

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Testing, adjusting, and balancing.

B. Adjust hardware for smooth operation.

3.04 PROTECTION OF INSTALLED CONSTRUCTION

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Protecting installed construction.

B. Do not permit adjacent work to damage hardware or hardware finish.

3.05 SCHEDULE (H.S. = Hardware Set)

H.S. 1 (interior door)

1 Roton	780-053	(Hager)
1 lock	ND60PD	(Schlage)
1 closer	P4041 Spring H-Cush	(LCN)
1 kickplate	190S, 12 inch	(Hager)
1 flush bolt	FB458	(Ives)

H.S. 2 (exterior single FRP door)

1 Roton	780-053	(Hager)
1 lock	ND60PD	(Schlage)
1 closer	P4041 Spring H-Cush	(LCN)
1 kickplate	190S, 12 inch	(Hager)
1 threshold	425	(NG)
1 jamb seal	A626A	(NG)
1 sweep	C607A	(NG)
1 flush bolt	FB458	(Ives)

Attic Access Hatch

1 jamb seal	5050CL	(NG)

NOTES:

1. Lock type design as follows, unless noted otherwise:
   a. Schlage D Series, Rhodes.
   b. Full size interchangeable cores.
2. Finishes:
   a. US26D/32D, unless noted otherwise.
   b. Closers sprayed aluminum, unless noted otherwise.
3. Hinge Size: 4½ inch by 4½ inch, unless noted otherwise.

END OF SECTION

SECTION 08 81 00
GLASS GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Glass and glazing for doors, windows, and frames.

1.02 RELATED SECTIONS

A. Section 08 15 80 – Vinyl Windows.

B. Section 08 36 13 – Sectional Overhead Doors.

1.03 REFERENCES

A. American National Standards Institute (ANSI):
   1. ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Used in Buildings.

B. American Society of Civil Engineers (ASCE):
   1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

C. American Society for Testing and Materials (ASTM) International:
   1. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
   2. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
   3. ASTM C1036 – Standard Specification for Flat Glass.
   4. ASTM C1048 – Standard Specification for Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass.
   5. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass.
   6. ASTM C1193 - Standard Guide for Use of Joint Sealants.
   7. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
   8. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls By Uniform Static Air Pressure Difference.
   9. ASTM E546 - Standard Test Method For Frost/Dew Point of Sealed Insulating Glass Units.
   10. ASTM E576 - Standard Test Method For Frost/Dew Point of Sealed Insulating Glass Units in the Vertical Position.
   11. ASTM E773 – Standard Test Methods for Accelerated Weathering of Sealed Insulating Glass Units.
   12. ASTM E1425 - Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylights, and Glazed Wall Systems.

D. Federal Specification Unit (FS):
   1. FS A-A-272B - Caulking Compounds.
   2. FS TT-S-01543 - Sealing Compound, Silicone Rubber Base.

E. Glass Association of North America (GANA) - formerly FGMA:
   1. GANA - Sealant Manual.
   2. GANA - Glazing Manual.
   3. GANA - Laminated Glass Design Guide.

F. International Code Council:
   1. IBC - International Building Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.

2. IECC - International Energy Conservation Code, 2015 Edition, and referenced standards with 2018 State of Wisconsin amendments.

G. Laminators Safety Glass Association - Standards Manual.

H. National Fire Protection Association (NFPA):
1. NFPA 80 - Standard for Fire Doors, Fire Windows.

I. Sealed Insulated Glass Manufacturers Association (SIGMA).

J. Underwriters Laboratories Inc. (UL):
1. UL - Building Materials Directory.

1.04 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Submittal provisions.

B. Product Data:
1. Glass: Provide structural, physical, and environmental characteristics, size limitations, special handling or installation requirements, and manufacturer product literature.
2. Glazing Sealants, Compounds, and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors where exposed.

C. Samples: For glass requested by the Engineer submit one (1) sample 12 inch x 12 inch in size.

D. Submit warranty.

E. Manufacturer’s Certificate: Certify sealed insulated and laminated glass, meets or exceeds specified requirements.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with GANA Glazing Manual, GANA Sealant Manual, SIGMA and Laminators Safety Glass Association Standards Manual for glazing installation methods.

1.06 QUALIFICATIONS

A. Installer: Company specializing in performing Work of this section with minimum three (3) years experience.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Environmental provisions.

B. Do not install glazing when ambient temperature is less than 50 degrees F.

C. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.08 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on drawings.

1.09 COORDINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Coordination provisions.

B. Coordinate the Work with glazing frames, wall openings, and perimeter air and vapor seal to adjacent Work.

1.10 WARRANTY

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Warranty provisions.

B. Manufacturer’s Warranty:
   1. Furnish 10 year warranty, include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.
   2. Furnish 10 year warranty to include coverage for delamination of laminated glass and replacement of same.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Glass:
   1. Cardinal IG.
   2. Libby-Owens-Ford.
   3. Pilkington.
   4. PPG.
   5. Viracon.

B. Insulated Unit Fabricator
   1. Custom Glass Product.
   2. HGP.
   3. Old Castle Glass.

2.02 GLASS MATERIALS

A. Type A: Insulated unit, double pane, 1/4-inch tempered safety glass panes, low-E, aluminum spacer, dual seal, total unit thickness of 1 inch.

2.03 EXECUTION

2.04 EXAMINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify that openings for glazing are correctly sized and within acceptable tolerance.

C. Verify surfaces of glazing channels or recesses are clean, free of obstructions impeding moisture movement, weeps are clear, and ready to receive glazing.

D. Beginning of installation means acceptance of substrates.

2.05 PREPARATION

A. Clean contact surfaces with solvent and wipe dry.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces in accordance with manufacturers instructions.

2.06 INSTALLATION

A. Perform installation in accordance with GANA Glazing Manual.
   1. Glazing Sealants: Comply with ASTM C1193.
   2. Fire Rated Openings: Comply with NFPA 80.

B. Install in accordance with glazing and frames manufacturer's instructions.

C. Exterior Wet/Dry Method (Preformed Tape and Sealant) Installation:
   1. The sealant used must be compatible with glazing tape compound.
   2. Cut glazing tape to length and set against permanent stops, 3/16 inch below sight line. Seal corners by butting tape and dabbing with compatible butyl sealant.
   3. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete continuity of air and vapor seal.
   4. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
   5. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.
   6. Install removable stops, with spacer strips inserted between glazing and applied stops, 1/4 inch below sight line.
   7. Fill gap between glazing and stop with elastomeric glazing sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.
   8. Apply cap bead of elastomeric glazing sealant along void between stop and glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

2.07 CLEANING

A. Special Provision "General Requirements for Building Construction" - Section 01 70 00 - Execution and Closeout Requirements: Cleaning provisions.

B. Remove glazing materials from finish surfaces.

C. Remove labels from glass after work is complete.

D. Clean glass and adjacent surfaces.

2.08 PROTECTION OF FINISHED WORK

A. Special Provision "General Requirements for Building Construction" - Section 01 50 00 - Temporary Facilities and Controls: Protection of finished work provisions.

B. After installation, mark pane with an 'X' by using removable plastic tape or paste.

END OF SECTION

SECTION 09 91 00
PAINTING

PART 1 GENERAL

1.01 WORK INCLUDED

A. Surface preparation.

B. Surface finish.

1.02 RELATED WORK

A. Section 22 - Plumbing: Painting of mechanical items and identification.

B. Section 23 - Heating, Ventilating, and Air Conditioning: Painting of mechanical items and identification.

C. Section 26 - Electrical: Painting of electrical items and identification.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM) International:
   1. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
   2. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.

B. Painting and Decorating Contractors of America:
   1. PDCA - Architectural Painting Specification Manual.

C. SSPC: The Society for Protective Coatings:
   1. SSPC - Steel Structures Painting Manual.

D. OSHA

E. WI DNR

1.04 DEFINITIONS

A. Conform to ASTM D16 for interpretation of terms used in this Section.

1.05 REGULATORY REQUIREMENTS

A. Conform to International Building Code for flame/fuel/smoke rating requirements for finishes.

B. Conform to all OSHA and WI DNR requirements for surface preparation, existing finish removal and disposal, especially regarding lead based paints.

1.06 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Samples: Submit samples illustrating range of colors available for each surface finishing product scheduled, for selection.

C. Manufacturer’s Installation Instructions: Submit special surface preparation procedures and substrate conditions requiring special attention.

D. Provide two (2) copies of a schedule detailing each substrate in the same order as the schedules used in Part 3 of this section. Include the following:
   1. The specific products to be used for each coat.
   2. Documentation that the manufacturer has reviewed and approved each painting system.
   3. Data pages for all products listed.
   4. On one set of data pages, highlight the following:
      a. Type of Resin.
      b. Dry Film Thickness.
      c. Volume Solids.
      d. Units of Sheen.
      e. Other performance or descriptive data required by Part 2 of this section.
      f. If this information is not on the data page, provide the information in a letter of certification from the manufacturer. Attach the letter to the appropriate data page.

E. Submit two (2) drawdowns of each product and color combination selected. Drawdowns shall be applied using a 4 mil WFT drawdown bar on Leneta form WD plain white coated cards size 3-7/8 inch x 6 inch.
   1. Label each card with the following:
      a. Job Name.
      b. Date.
      c. Product Name.
      d. Product Number.
      e. Color number as stated in the color schedule.
      f. Name, address, and phone number of the supplying facility.

1.07 CLOSEOUT SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Closeout provisions.

B. Operation and Maintenance Data: Submit data on cleaning, touch-up and repair of painted and coated surfaces.

1.08 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing quality products specified in this section with minimum three (3) years documented experience.

B. Applicator: Company specializing in performing commercial work of this section with minimum three (3) years documented experience.

C. Certified lead renovation contractor or lead abatement contractor for removal or surface preparation of existing lead based finishes.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Product storage and handling provisions.

B. Deliver products to site in sealed and labeled containers; inspect to verify acceptance.

C. Container labeling to include manufacturer’s name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.

D. Paint Materials: Store paint materials at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in well ventilated area, unless required otherwise by manufacturer’s instructions.

E. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.10 ENVIRONMENTAL REQUIREMENTS

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Environmental provisions.

B. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 50 degrees F for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by manufacturer’s instructions.

C. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer.

D. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent, unless required otherwise by manufacturer’s instructions.

E. Minimum Application Temperatures for Latex Paints: 50 degrees F (10 degrees C) for interiors; 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer’s instructions.

F. Minimum Application Temperature for Varnish and Stain Finishes: 65 degrees F (18 degrees C) for interior or exterior, unless required otherwise by manufacturer’s instructions.

G. Comply with OSHA and WI DNR requirements when dealing with existing lead based paint finishes.

1.11 EXTRA MATERIAL

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Extra material provisions.

B. Provide a one (1) gallon container of each color, type, and finish to Owner.

C. Label each container with color, texture, and room locations in addition to the manufacturer’s label.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - PAINT, PRIMERS, SEALERS, BLOCK FILLER

A. Sherwin Williams.

B. Other Acceptable Manufacturers that can meet same or better requirements of the specified Sherwin Williams paint: Hallman Lindsay Paint, Pratt & Lambert, PPG Paints, and Diamond Vogel.

2.02 ACCEPTABLE MANUFACTURERS - URETHANE AND STAIN

A. Sherwin Williams.

B. Other Acceptable Manufacturers that can meet same or better requirements of the specified Sherwin Williams products: Hallman Lindsay Paint, Pratt & Lambert, PPG Paints, and Diamond Vogel.

2.03 ACCEPTABLE MANUFACTURERS - EPOXY PAINT

A. Sherwin Williams.

B. Other Acceptable Manufacturers that can meet same or better requirements of the specified Sherwin Williams products: Hallman Lindsay Paint, Pratt & Lambert, PPG Paints, and Diamond Vogel.

2.04 MATERIALS

A. Coatings: Ready mixed, except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.

B. Coatings: Good flow and brushing properties; capable of drying or curing free of streaks or sags.

C. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

2.05 FINISHES

A. Refer to schedule at end of Section for surface finish. Colors shall be selected by Engineer.

B. See plans and specifications for items to receive finishes.

C. If the drawings do not convey a particular color scheme, a multiple color scheme for interior paint finishes shall be presumed. This may include exterior doors with a different color on the interior surface than the exterior surface, up to 5 different interior wall colors (for the project) and individual rooms having 2 different wall colors within them. Color transitions if present will occur at outside corners, inside corners and/or at a transition point with surface mounted trim.

PART 3 EXECUTION

3.01 EXAMINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Plaster and Gypsum Wallboard: 12 percent.
   2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
   3. Interior Located Wood: 15 percent, measured in accordance with ASTM D4442.
   4. Exterior Located Wood: 15 percent, measured in accordance with ASTM D4442.

E. Contractor is required to test existing paint finishes for the presence of lead prior to removal or surface preparation.

F. Beginning of installation means acceptance of substrate.

3.02 PREPARATION

A. Surface Appurtenances: Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

B. Surfaces: Correct minor defects and clean surfaces which affect work of this Section.

C. Marks: Shellac and seal marks which may bleed through surface finishes.

D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

E. Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.

F. Asphalt, Creosote, or Bituminous Surfaces Scheduled for Paint Finish: Remove foreign particles to permit adhesion of finishing materials. Apply latex based compatible sealer or primer.

G. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

H. Concrete Floors: Shot blast.

I. Copper Surfaces Scheduled for a Paint Finish: Remove contamination by steam, high pressure water, or solvent washing. Apply vinyl etch primer immediately following cleaning.

J. Copper Surfaces Scheduled for a Natural Oxidized Finish: Remove contamination by applying oxidizing solution of copper acetate and ammonium chloride in acetic acid. Rub on repeatedly for required effect. Once attained, rinse surfaces with clear water and allow to dry.

K. Gypsum Board Surfaces: Latex fill minor defects. Spot prime defects after repair.

L. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

M. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

N. Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

O. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt, and rust. Where heavy coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.

P. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.

Q. Interior Wood Items Scheduled to Receive Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.

R. Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted paintable exterior caulking compound after prime coat has been applied.

S. Glue-Laminated Beams: Prior to finishing, wash surfaces with solvent, remove grease and dirt.

T. Wood and Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

U. Remove and dispose or prepare lead based paint finishes in accordance with OSHA and WI DNR requirements.

3.03 PROTECTION

A. Protect elements surrounding the work of this Section from damage or disfiguration.

B. Repair damage to other surfaces caused by work of this Section.

C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.

D. Remove empty paint containers from site.

3.04 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

B. Do not apply finishes to surfaces that are not dry.

C. Apply each coat to uniform finish.

D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.

E. Sand lightly between coats to achieve required finish.

F. Allow applied coat to dry before next coat is applied.

G. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

H. Prime back surfaces of interior and exterior woodwork with primer paint.

I. Prime back surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with mineral spirits.

J. If painting is scheduled at the interior surface of an exterior masonry wall, the entire wall surface, including concealed spaces, shall be painted.

3.05 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Sections 22, 23, and 26 are responsible for color coding and identification banding of equipment, ductwork, piping, and conduit.

B. Paint shop primed equipment.

C. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

D. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are prefinished at locations where adjacent surface is scheduled to be painted.

E. Replace identification markings on mechanical or electrical equipment when painted accidentally.

F. Painting of interior surfaces of air ducts, and convector and baseboard heating cabinets that are visible through grilles and louvers shall be by Sections 22, 23, and 26.

G. Paint exposed conduit and electrical equipment occurring in finished areas.

H. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.

I. Replace electrical plates, hardware, light fixture trim, and fittings removed prior to finishing.

3.06 CLEANING

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. As Work proceeds, promptly remove paint where spilled, splashed, or spattered.

C. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.

D. Collect cotton waste, cloths, and material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

3.07 SCHEDULE - SHOP PRIMED ITEMS FOR SITE FINISHING

A. Section 05 51 00 - Metal Stairs: Exposed surface of stair.

B. Section 05 52 00 – Metal Railings: Exposed surface of handrail.

C. Section 07 72 33 - Roof hatches: Exposed surface of roof hatch.

3.08 EXTERIOR PAINT SCHEDULE:

A. Wood - Plywood ,T-111 siding, and Textured Composition Board Siding:

1st Coat: 100% acrylic solid color stain

2nd Coat: 100% acrylic solid color stain

Min. DFT: 1.3 mils per coat

Min. Volume Solids: 31%

Sheen: 0-5 units @ 60 degrees

Label Warranty: 8 years minimum

1. S-W Woodscapes Exterior Acrylic Solid Color House Stain A15 series
2. PPG REZ Exterior Acrylic Latex Solid Color Stain 77-445 Series.

B. Ferrous Metal - (except surfaces scheduled to receive polyurethane):

Touch-up: Rust-inhibitive waterborne acrylic primer, free of heavy metals

DFT: 2.5-5.0 mils

Min. Volume Solids: 44%

1. S-W DTM Acrylic Primer/Finish B66W1
2. PPG Pitt-Tech Int/Ext Industrial DTM Primer/Finish Enamel 90-712 Series.

2nd Coat: Non-blocking, 100% acrylic gloss coating

3rd Coat: Non-blocking, 100% acrylic gloss coating

Min. DFT: 1.3 mils per coat

Min. Volume Solids: 31%

Sheen: 70-90 units @ 60 degrees

1. S-W Super Paint Exterior High Gloss Door & Trim Enamel A85 series
2. PPG Pitt-Tech Int/Ext High Gloss DTM Industrial Enamel 90-374 Series.

3.09 INTERIOR PAINT SCHEDULE:

A. Wood - painted:

1st Coat: 100% acrylic primer

Min. DFT: 1.6 mils

Min. Volume Solids: 39%

1. S-W Premium Interior Wall and Wood Latex Primer B28W8111
2. PPG Speedhide Interior Latex Enamel Undercoater 6-855.

2nd Coat: Non-blocking, acrylic, semi-gloss

3rd Coat: Non-blocking, acrylic, semi-gloss

Pencil Hardness (ASTM D3363): H or harder

Min DFT: 1.3 mils per coat

Min. Volume Solids: 33%

Sheen: 35-45 units @ 60 degrees

1. S-W ProClassic Waterborne Interior Acrylic Semi-gloss B31W20 series
2. PPG Int/Ext Semi-Gloss Acrylic Metal Finish 7-374 Series
3. See drawings for color selections

B. Ferrous Metal:

Touch-up: Rust-inhibitive waterborne acrylic primer, free of heavy metals

DFT: 2.5-5.0 mils

Min. Volume Solids: 44%

1. S-W DTM Acrylic Primer/Finish B66WW10
2. PPG Pitt-Tech Int/Ext Industrial DTM Primer/Finish Enamel 90-712 Series.

2nd Coat: Non-blocking, acrylic, semi-gloss

3rd Coat: Non-blocking, acrylic, semi-gloss

Pencil Hardness (ASTM D3363): H or harder

Min. DFT: 1.3 mils per coat

Min. Volume Solids: 33%

Sheen: 35-45 units @ 60 degrees

1. S-W ProClassic Waterborne Interior Acrylic Semi-gloss

   B31W20 series
2. PPG Int/Ext Semi-Gloss Acrylic Metal Finish 7-374 Series

3.10 MISCELLANEOUS PAINT SCHEDULE

For items that require finish and no specific paint system is identified, provide manufacturer recommended paint system for the given application.

END OF SECTION

SECTION 10 14 00
SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Interior signs.

1.02 SUBMITTALS

A. Special Provision “General Requirements for Building Construction” - Section 01 33 00 - Submittal Procedures: Submittal provisions.

B. Shop Drawings: Indicate letters and sign styles, lettering font, foreground and background colors, locations, and overall dimensions of each sign and letter.

C. Manufacturer’s Installation Instructions: Submit installation template and attachment devices.

1.03 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three (3) years documented experience.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Product storage and handling provisions.

B. Package letters and signs, labeled in name groups.

C. Store adhesive attachment tape at ambient room temperatures.

1.05 ENVIRONMENTAL REQUIREMENTS

A. Special Provision “General Requirements for Building Construction” - Section 01 60 00 - Product Requirements: Environmental provisions.

B. Do not install signs when ambient temperature is lower than recommended by manufacturer.

C. Maintain this minimum temperature during and after installation of signs.

D. Provide ventilation to disperse fumes during application of solvent-based adhesive.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Load Capacity Signage for Mezzanine: Applied plastic signs, 0.125 inch thick colored plastic substrate with 1/32 inch raised text and pictogram. Manufactured InPro Corporation, Schwaab Inc. or equal.
   1. Texts: “6000 LBS OVER 10’-0”x10-0” AREA (60 PSF)”
   2. Black texts on white background.
   3. Adhesive tape mounted.

2.02 ACCESSORIES

A. Mounting Hardware: As required for installation location and substrate, as provided by manufacturer.

B. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

A. Special Provision “General Requirements for Building Construction” - Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify that surfaces are ready to receive work.

C. Beginning of installation means acceptance of substrates.

3.02 INSTALLATION

A. Install in accordance with manufacturer’s instructions.

B. Install signs and letters after substrate is finished, in locations indicated.

3.03 CLEANING

A. Special Provision “General Requirements for Building Construction” - Section 01 70 00 - Execution and Closeout Requirements: Cleaning provisions.

B. Clean signs per manufacturer’s instructions.

END OF SECTION

SECTION 10 44 16
FIRE EXTINGUISHERS

PART 1 GENERAL

1.01 WORK INCLUDES

A. Fire extinguishers.

1.02 RELATED WORK

A. Section 06 10 00 - Rough Carpentry: Blocking.

1.03 REFERENCES

A. National Fire Protection Association (NFPA):
   1. NFPA 10 - Standard for Portable Fire Extinguishers.
   2. NFPA 17 – Standard for Dry Chemical Extinguishing Systems.

B. Underwriter's Laboratories Inc. (UL):
   1. Fire Protection Equipment Directory.

1.04 PERFORMANCE REQUIREMENTS

A. Conform to NFPA 10 requirements for extinguishers.

B. Furnish extinguishers classified and labeled by Underwriters Laboratories Inc. for purpose specified and indicated.

PART 2 PRODUCTS

2.01 FIRE EXTINGUISHERS

A. Manufacturers:
   1. Amerex.
   2. Ansul.
   3. J.L. Industries (Activar).
   4. Larsens Manufacturing Company.
   5. Nystorm Products Company.
   6. Potter Roemer.

B. Ten pound Model MP10, Larsen's. UL Rating: 4A-60B:C.

C. Finish: Red enamel.

2.02 ACCESSORIES

A. Brackets, exposed: Support bottom of extinguisher, by manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Special Provision "General Requirements for Building Construction" - Section 01 30 00 – Administrative Requirements: Coordination and project conditions.

B. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

A. Install mounting bracket at each extinguisher location, so that top of extinguisher is 48 inches above the finished floor

B. Place extinguisher on wall bracket. Secure rigidly in place in accordance with manufacturer's instructions.

END OF SECTION

SECTION 11 16 20
KEY VAULTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Key vaults.

1.02 SUBMITTALS (NONE)

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Knox Company, 1601 W. Deer Valley Road, Phoenix, AZ 85027, (800) 552-5669, www.knoxbox.com.

B. Coordinate with Lodi Area Fire official before submittal and ordering.

2.02 MATERIAL

A. Key Vault: Knox-Box Series 3200, lift off door, recessed mount with recessed mounting kit, Dark Bronze finish.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify rough opening for unit is correctly sized and located.

B. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

A. Install plumb and level in wall openings or on surface 56 inches from finished floor to inside top of cabinet.

B. Secure rigidly in place in accordance with manufacturer's instructions.

END OF SECTION

SECTION 31 23 16
EXCAVATION

PART 1 GENERAL

1.01 WORK INCLUDED

A. Building excavation.

1.02 RELATED WORK

A. Special Provision “General Requirements for Building Construction” - Section 01 40 00 - Quality Requirements: Inspection of bearing surfaces and compaction testing.

B. Section 31 23 23 - Backfill and Compaction.

1.03 PROTECTION

A. Protect benchmarks from equipment and vehicular traffic.

B. Protect above and below grade utilities which are to remain.

C. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.

D. Notify Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.

E. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.

F. Grade excavation top perimeter to prevent surface water run-off into excavation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Reference the Foundation Exploration Report in Special Provision “General Requirements for Building Construction – Section 01 of this specification manual for a description of the existing soils on site.

PART 3 EXECUTION

3.01 PREPARATION

A. Identify required lines, levels, contours, and datum. Coordinate with 01 30 00 - Administrative Requirements.

B. Identify known underground utilities. Stake and flag locations.

C. Identify and flag surface and aerial utilities.

D. Notify utility company to remove and relocate utilities.

E. Maintain and protect existing utilities remaining which pass through work area.

3.02 EXCAVATION

A. Excavate subsoil required for building foundations, construction operations, and other work.

B. Machine slope banks to angle of repose or less until shored.

C. Excavation shall not interfere with normal 45 degree bearing splay of any foundation.

D. Hand trim excavation and leave free of loose matter.

E. Remove lumped subsoil, boulders, and rock up to 1/3 cu. yd., measured by volume.

F. Correct unauthorized excavation at no cost to Owner.

G. Fill over-excavated areas under structure bearing surfaces in accordance with direction by Engineer.

H. Stockpile excavated material in area designated on site and remove excess subsoil not being reused, or not re-usable from site.

I. Excavation for building foundations shall extend to footing bearing.

3.03 DEWATERING

A. Water collected in footing trenches from surface run-off or seepage of groundwater shall be removed by sump pump or other conventional dewatering method prior to placement of foundation concrete.

B. Any soil softened by standing water shall be removed prior to resuming construction activities.

C. Site grades shall be maintained during construction to prevent flow toward open excavations and the construction area.

3.04 FIELD QUALITY CONTROL

A. Field inspection and testing shall be performed under the provisions of Special Provision “General Requirements for Building Construction” - Section 01 40 00.

B. An independent inspection and testing firm shall observe and perform field compaction tests on the bearing surfaces to determine if the existing soils are adequate for a bearing surface for the proposed structure. If the existing soils are found not to be adequate, the independent firm shall provide recommendation on the course of action required to correct the situation. The building foundation has been designed for an allowable soil bearing capacity of 2,500 psf.

END OF SECTION

SECTION 31 23 23
BACKFILL AND COMPACTION

PART 1 GENERAL

1.01 WORK INCLUDED

A. Backfilling to subgrade elevations around building foundations.

B. Compaction of existing subsoil prior to backfilling.

C. Compaction requirements.

1.02 RELATED WORK

A. Special Provision “General Requirements for Building Construction” - Section 01 40 00 - Quality Requirements.

B. Section 31 23 16 - Excavation.

1.03 REFERENCES

A. ANSI/ASTM C136 - Sieve Analysis of Fine and Coarse Aggregates.

B. ANSI/ASTM D698 - Moisture-Density Relations of Soils and Soil-Aggregate Mixture Using 5.5 lb 2.49 kg Rammer and 12-inch Drop.

C. ANSI/ASTM D1557 - Moisture-Density Relations of Soils and Soil-Aggregate Mixture Using 10-pound Rammer and 18-inch Drop.

PART 2 PRODUCTS

2.01 COMMON FILL MATERIALS

A. Type A: Subsoil; Existing, free of all topsoil and organic material, roots, gravel larger than 3-inch size, and debris may be used to backfill around building foundations.

B. Type B: Imported granular sand, conforming to the gradations required in Section 209 of the State of Wisconsin Department of Transportation Standard Specifications.

C. Type C: Imported borrow, aggregate base course, ¾-inch dense graded base, crushed stone or crushed gravel conforming to the gradations required in Section 305.2.2.1 of the State of Wisconsin, Department of Transportation, Standard Specifications.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify foundation or basement walls are braced to support surcharge forces imposed by backfilling operations.

B. Verify areas to be backfilled are free of debris, snow, ice, or water, and ground surfaces are not frozen.

3.02 BACKFILLING

A. Backfill areas to contours and elevations. Use unfrozen materials.

B. Backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces.

C. Place and compact fill materials in continuous layers not exceeding 8 inches loose depth.

D. Maintain optimum moisture content of backfill materials to attain required compaction density.

E. Backfill simultaneously on each side of unsupported foundation walls.

F. Slope grade away from building minimum 2 inches in 10 feet unless noted otherwise.

G. Make changes in grade gradual. Blend slopes into level areas.

H. Remove surplus backfill materials from site.

I. Leave stockpile areas completely free of excess fill materials.

3.03 TOLERANCES

A. Top Surface of Backfilling: Plus or minus 1 inch.

B. Allow adequate space for topsoil or paving.

3.04 FIELD QUALITY CONTROL

A. Field inspection and testing shall be performed under the provisions of Special Provision “General Requirements for Building Construction” - Section 01 40 00.

B. An independent inspection and testing firm shall perform field compaction tests on the compacted backfill materials.

C. If compaction tests on backfill material indicate work does not meet specified requirements, remove work, replace, and retest at no cost to Owner.

3.05 SCHEDULE OF LOCATIONS

A. The paragraphs below identify location, fill material to be used and compaction expressed as a percentage of maximum density with ANSI/ASTM D1557.

B. Interior Slab-On-Grade: One 6 inch minimum layer of Type C directly under the slab and Type B or C for fill to raise the grade up to that point, each lift compacted to 95 percent.

C. Around Foundations Within the Building Area: Type B, each lift compacted to 95 percent.

D. Fill Under Grass Areas at Exterior Side of Perimeter Foundation Walls: Type A or B, compacted to 90 percent, compacted to 95 percent within 10 feet of foundation walls.

E. Fill Under Concrete Paving at Exterior Side of Perimeter Foundation Walls: Type B, compacted to 95 percent.

F. Fill Under Asphalt Paving at Exterior Side of Perimeter foundation Walls: Type B, compacted to 95 percent.

G. Fill and Base Course Under Concrete Sidewalks: Type B or C, provide 6-inch thick layer, compact to 95 percent.

END OF SECTION

17. Ferry Operations Building HVAC, Item SPV.0060.02.

A Description

This item consists of the heating and ventilation work for the Ferry Operations Building. The work shall be in accordance to the applicable plans, the special provision “General Requirements for Building Construction”, and the following specifications.

B Material

See specifications below.

C Construction

See specifications below.

D Measurement

The department will measure Ferry Operations Building HVAC 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.0060.02	Ferry Operations Building HVAC	EACH

Payment is full compensation for furnishing and installing all materials and equipment.

SECTION 23 05 00
BASIC HVAC REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 GENERAL

A. Hereinafter, the term “Mechanical Contractor” shall be intended and interpreted as defining the term “Heating, Ventilating and/or Air Conditioning Contractor”.

B. Hereinafter, the terms “Mechanical System” and “Mechanical Equipment” shall be intended and interpreted as defining the terms “Heating, Ventilating and/or Air Conditioning System or Equipment”.

C. If the bidding documents contain conflicting information or discrepancies between the plan sheets and details, plan sheets with other plan sheets, or the plan sheets and specifications, the bidder shall contact the Engineer in writing during the bidding process for verification of the correct information. Failure to verify the correct information with the Engineer during bidding will result in the Mechanical Contractor being responsible for any re-work deemed necessary by the Engineer at no additional cost to the Owner.

D. The drawings are schematic in nature. All required ductwork and piping offsets, transitions, fittings, and supports shall be included in the base bid to accommodate actual field conditions. Final locations of all work shall be coordinated in the field and installed where directed by the Owner's Representative.

E. The Mechanical Contractor shall be responsible for coordinating construction phasing with the General Contractor . Furnish and install all temporary piping, ductwork, and control connections as required to facilitate the construction phasing.

1.03 REFERENCE STANDARDS

A. Abbreviations of standards organizations referenced in other sections are as follows:
1. AABC - Associated Air Balance Council
2. ABMA - American Boiler Manufacturers Assoc.
3. ADC - Air Diffusion Council
4. AGA - American Gas Assoc.
5. AMCA - Air Movement & Control Assoc.
6. ANSI - American National Standards Institute
7. ARI - Air Conditioning & Refrigeration Institute
8. ASHRAE - American Society of Heating, Refrigerating and Air Conditioning Engineers
9. ASME - American Society of Mechanical Engineers
10. ASTM - American Society of Testing and Materials
11. AWWA - American Water Works Assoc.
12. AWS - American Welding Society
13. CGA - Compressed Gas Assoc.
14. CTI - Cooling Tower Institute
15. EPA - Environmental Protection Agency
16. GAMA - Gas Appliance Manufacturers Assoc.
17. IECC – International Energy Conservation Code
18. IEEE - Institute of Electrical & Electronics Engineers
19. IMC – International Mechanical Code
20. ISA - Instrument Society of America

21. MCA - Mechanical Contractors Assoc.
22. MICA - Midwest Insulation Contractors Assoc.
23. MSS - Manufacturer's Standardization Society of the Valve & Fitting Industry, Inc.
24. NBS - National Bureau of Standards
25. NEBB - National Environmental Balancing Bureau
26. NEC - National Electric Code
27. NEMA - National Electrical Manufacturers Assoc.
28. NFPA - National Fire Protection Assoc.
29. SMACNA - Sheet Metal & Air Conditioning Contractors National Association, Inc.
30. UL - Underwriters Laboratories, Inc.

1.04 QUALITY ASSURANCE

A. Substitution of Materials: Refer to Section GC - General Conditions of the Contract.

B. Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, electrical characteristics/capacities, or engineering parameters from those indicated on the contract documents, the contractor is responsible for all costs involved in integrating the equipment or accessories into the system and for obtaining the performance from the system into which these items are placed. This may include changes found necessary during the testing, adjusting, and balancing phase of the project.

1.05 CONTINUITY OF EXISTING SERVICES

A. Refer also to Section GR - General Requirements.

B. Do not interrupt or change existing services without prior written approval from the Owner. When interruption is required, coordinate the down-time with the Owner to minimize disruption to his activities. Unless specifically stated, all work involved in interrupting or changing existing services is to be done during normal working hours.

1.06 PROTECTION OF FINISHED SURFACES

A. Refer also to Section GR - General Requirements

B. Furnish one can of touch-up paint for each different color factory finish which is to be the final finished surface of the product. Deliver touch-up paint with other "loose and detachable parts" as covered in the General Requirements.

1.07 CODES, PERMITS, TAXES AND CERTIFICATES OF INSPECTION AND APPROVAL

A. This system shall be installed in accordance with all national, state and local codes and regulations.

B. Mechanical equipment shall comply with the requirements of ASHRAE 90-1.

C. The Mechanical Contractor shall secure and pay for all permits, licenses and certificates of inspection applicable to this work.

D. The Mechanical Contractor shall pay for all taxes applicable to this work.

E. Copies of the certificates shall be included in the Operating and Maintenance Instructions.

1.08 AIR PLENUMS

A. Portions of the project include return air plenums. All materials located within air plenums shall be suitable for such use and shall meet all applicable flame and smoke development requirements.

1.09 IDENTIFICATION

A. Equipment Labels
   1. Furnish three-layer plastic laminate equipment labels with engraved letters, 1/16 inch thickness, beveled edges and self-bonding adhesive backing.
      a. Letter Color: Black.
      b. Letter Height: 1/2 inch.
      c. Background Color: White.
   2. Label all major mechanical equipment, including:
      a. Starters.
      b. Furnaces.
      c. Air Cooled Compressor Condensing Units.
      d. Fans.

B. Piping and Ductwork Labeling
   1. Manufacturers: W.H. Brady Co., Marking Services Inc. or Perma-Code B-350.
   2. Furnish self-bonding pipe and duct markers of colors in accordance with ASME Standard A-13 with flow arrow tape indicating direction of flow for each system type.
   3. Furnish marking as follows:
      a. Gas piping.

C. Valve Identification
   1. Tag all valves in entire installation with brass tags stamped for clear identification. Provide an electronic copy in PDF format of valve schedule and necessary charts. Schedule to show:
      a. Valve number.
      b. Size.
      c. Manufacturer.
      d. Type of valve.
      e. Type of service.
      f. Location.

1.10 SHOP DRAWINGS

A. The Mechanical Contractor will be held responsible for correction of work deemed necessary by the Engineer due to proceeding with the work without certified drawings that have the Engineer's final review.

B. Submit to Engineer for review, an electronic copy of manufacturer's certified drawings in PDF format for all equipment. Drawings for the automatic controls shall include sequence description.

C. All major equipment shop drawings shall be of a single manufacturer. Submitting multiple manufacturers for a single product (i.e., VFDs, starters, AHUs, fan coil units, blower coil units, etc.) shall not be permitted. Only the BAS submittal may contain multiple manufacturers for the various products and components required for the complete system submittal.

D. Certified drawings shall include data on physical dimensions, gauges, materials of construction and capacities as follows:
   1. All HVAC equipment.
   2. Ductwork.
   3. Piping systems. Submittal shall include a schedule listing each system type, pipe material, pipe size range, and connection type.
   4. HVAC insulation. Submittal shall include a schedule listing each system served, insulation material/type, and insulation thicknesses.
   5. Temperature control system.
   6. Testing and balancing reports.

E. Incomplete certified drawings will be rejected.

F. Manufacturers shall check the plans and verify that their equipment can be installed in the space allotted and still have adequate room for servicing.

G. Review of certified drawings describing equipment that cannot fit in the space allotted does not relieve the Mechanical Contractor from furnishing and installing equipment that will meet the space requirements.

H. Review of certified drawings not fully describing or specifically stating all components of a major item or system shall not be construed to indicate that these items may be omitted or are not required. All components necessary to comply with the requirements of the system or the intent of the plans and specifications and all governing codes and regulations must be furnished and installed.

I. Review of certified drawings covering equipment that does not meet the requirements of the plans and/or specifications does not relieve the Mechanical Contractor from furnishing and installing the equipment required.

1.11 OPERATING AND MAINTENANCE INSTRUCTIONS

A. Refer also to Section GR - General Requirements.

B. Submit to Engineer for review, an electronic copy of the complete operating and maintenance manual in PDF format.

C. Assemble material in a single PDF file with a sidebar index with tabs for each type of equipment, certificates, warranties, as-builts, etc. In addition to the data indicated in the General Requirements, include the following information:
1. Copies of all approved shop drawings.
2. Manufacturer's wiring diagrams for electrically powered equipment.
3. Records of tests performed to certify compliance with system requirements.
4. Start-up reports for all major equipment.
5. Piping systems cleaning and flushing reports and verifications.
6. Certificates of inspection by regulatory agencies.
7. Temperature control record drawings and control sequences.
8. Parts lists for manufactured equipment with pricing.
9. Valve schedules.
10. Lubrication instructions, including list/frequency of lubrication done during construction.
11. Warranties.
12. As-built drawings.

D. Provide an electronic PDF file of the as-built drawings to the Engineer for record.

1.12 VISITING OF JOB SITE

A. The Mechanical Contractor is required to visit the premises and take note of all existing conditions which may affect his work; and he shall be responsible for knowledge of same in the preparation of his bid.

B. Lack of information on existing conditions shall not be allowed as a valid cause for additional compensation.

1.13 FILTERS

A. All equipment containing air filter media utilized for ventilation and/or heating purposes during construction shall have all filter media replaced regularly during construction with minimum MERV 8 filters to protect the internal components of the equipment. At the end of construction, all air filtered equipment shall be provided with new filter media with MERV ratings as scheduled, and all permanent filter media thoroughly cleaned prior to presenting the system to the Owner for acceptance.

B. At project closeout, provide the Owner with two (2) extra sets of filters for all new equipment utilizing air filter media installed as part of this project.

1.14 FINAL REQUIREMENTS

A. Materials, fittings, apparatus, fixtures, etc., not particularly specified or shown on plans but necessary to provide a first class mechanical system for the building, must be furnished notwithstanding such omission.

B. At the completion of the work, the entire plant must be delivered to the Owner in perfect working order with all joints tight, valves packed and adjusted.

C. Balance the entire air system to deliver and exhaust air quantities as designated, with allowable error of plus or minus 5%. Submit to the Engineer in triplicate, complete air and water balancing data sheets as hereinafter specified.

D. All tests and trials of the entire system requested or directed by the Engineer must be made by the Mechanical Contractor free of charge before acceptance of the work.

1.15 OWNER TRAINING

A. Upon completion of the installation, but before final acceptance of the system, the Mechanical Contractor shall be responsible for coordinating and scheduling training for the Owner on the care and operation of all parts of the system. Training may be conducted by the Mechanical Contractor only if he has certified training from the equipment manufacturers to do so. Otherwise, specific equipment training shall be conducted by the equipment manufacturers.

B. Training shall cover all major equipment and systems including, but not limited to, boilers, chillers, condensing units, pumps, air handling units, packaged rooftop units, dust collectors, heat pumps, energy recovery units, fans, valves, dampers, actuators, blower coil units, cabinet heaters, variable frequency drives, building automation system, etc.

1.16 GUARANTEE/WARRANTY

A. This Contractor guarantees all work, new material and apparatus to operate to the satisfaction of the Engineer for one (1) year from the final completion and acceptance of the system and must keep same in repair for said period, unless such defects are clearly the result of bad management after apparatus is out of his control.

B. The guarantee period shall start when the system has been accepted by the Engineer as being in working order.

C. All HVAC equipment shall be provided with a manufacturer’s warranty. Equipment warranties shall be effective from the date of substantial completion and acceptance and shall be a minimum of two (2) years unless otherwise indicated in the individual specification sections. This Contractor shall provide factory start-up services for all equipment when available from the equipment manufacturer.

D. Any exterior wall penetrations that leak within five (5) years after project substantial completion and acceptance shall be repaired and/or re-worked by the Mechanical Contractor at no additional cost to the Owner.

E. The ventilating system shall be guaranteed to supply and exhaust the amounts of air as noted on the plans to within plus or minus 5%.

F. The temperature control system shall be guaranteed to maintain the temperatures at the instruments to within plus or minus one degree of their setting.

1.17 ALLOWANCES

A. The Mechanical Contractor shall include a $5,000 allowance for the installation of the gas utility service. The allowance shall include all costs, overhead, and taxes and shall be the actual cost from the utility to the contractor. If the allowance amount is more than the actual cost, the balance shall be deducted from the contract by change order. Likewise, any costs above the allowance shall be added to the contract by change order.

PART 2 PRODUCTS NOT USED

PART 3 EXECUTION

3.01 EQUIPMENT SUPPORTS

A. General:
1. Furnish and install all equipment supports as indicated or required for the installation of all mechanical equipment, including miscellaneous upper steel as required to frame into overhead construction for distribution of weight.
2. All equipment supports shall incorporate anti-vibration isolation, hanger assemblies, concrete inserts, etc., as required.
3. Concrete anchors shall be installed in predrilled holes. “Shot-in” anchors will not be acceptable.
4. All concrete anchor inserts shall be metallic. Non-metallic inserts will not be acceptable.
5. Concrete inserts shall be furnished and located by the Mechanical Contractor and set by the Contractor responsible for pouring the concrete.
6. Wood screws or toggle bolts shall be used for mounting equipment in frame construction.
7. Mechanical equipment shall not support or be supported by any active piping or ductwork.

B. Steel Supports:
1. Steel supports in the form of pipe stands, rails, suspension frames, brackets, braces, etc., shall be furnished and installed for mechanical equipment indicated and/or required to have steel supports.
2. Shall be constructed to properly support and distribute the load.
3. Shall incorporate anti-vibration devices, anti-sway bracing, saddles and anchoring plates as required.
4. May be constructed of steel pipe, I-beams, channels, angle iron, or threaded steel rods.
5. All permanent supports shall be welded.
6. Support members which must be moved may be bolted or threaded pipe.
7. All threaded rods and bolts shall have nuts welded to rods, threads peened, or double nuts.

C. Finished Area Mechanical Equipment:
1. Wall and Floor Units:
   a. Shall be set plumb and true.
   b. Shall include all necessary flanges, trim strips, end closures, etc.
   c. Shall be securely anchored in place.
   d. Setting and anchoring shall be in accordance with manufacturers details and recommendations.
2. Finished Ceiling Mounted Units:
   a. Shall have concealed steel supports as hereinbefore specified.
   b. Flush and/or recessed equipment shall be supported from threaded hanger rods which can be drawn up to bring cabinet flush and/or tight to ceiling.
   c. Recessed units shall be installed with recessing flanges furnished with the unit.

3.02 EQUIPMENT LABELS

A. Secure equipment labels directly to equipment in a clearly visible location. For equipment in finished areas, label shall be on inside surface of access panel.

B. Label all new equipment with tag numbers as scheduled, existing equipment as called out on the plans, or per Owner's direction.

3.03 PIPING AND DUCTWORK LABELING

A. Install pipe and duct markers every 20 ft. or less with directional flow arrow and proper marking. Application procedure shall be in accordance with manufacturer's recommendations. Markings shall be securely adhered to pipe, duct, or outer insulation jacket. Incomplete or partially attached markers will not be accepted.

B. Flow arrow tape on piping systems shall wrap completely around the pipe and overlap each end of the piping system label to secure the label in place.

3.04 VALVE IDENTIFICATION

A. Secure valve tags to valves with heavy brass wire.

3.05 SLEEVES, OPENINGS, CUTTING AND PATCHING

A. Provisions for openings (except pipe sleeves) but including chases, holes and clearance through walls, floors, roof, ceilings and partitions shall be made in advance of construction of such parts of the building. These openings will be provided by Others during the construction of the building, but it shall be the responsibility of the Mechanical Contractor to furnish the applicable contractor with all opening dimensions where required for installing the mechanical work. These dimensions shall size and locate the openings.

B. If the Mechanical Contractor should neglect to inform the other Contractors of his opening requirements before that portion of the building construction has been completed, the Mechanical Contractor shall cut his own openings and provide framings and lintels as required. Before cutting or drilling, he must obtain permission from the Engineer and he shall repair any damage to his satisfaction. In event holes must be cut through reinforced concrete, drill carefully so as to avoid spalling and unnecessary damage or weakening of structural members. No chopping or breaking out permitted.

C. Precedence in installing equipment and piping in close quarters will be as determined by the Engineer but no contractor has exclusive right-of-way in installing his work.

D. Confer and cooperate with other Contractors and agree as to running of pipe lines and ducts subject to Engineer's approval.

E. The Mechanical Contractor shall be responsible for the water tightness of all openings through the roof, outside walls and equipment room floors required for the mechanical system. Wall openings in exterior walls for ductwork shall be completely and thoroughly packed, caulked, and flashed as required to ensure a watertight installation.

F. Pipe Sleeves:
1. The Mechanical Contractor shall furnish and install in place, pipe sleeves which shall be ½" larger in diameter than insulation on insulated pipe lines or ½" larger in diameter than the outside pipe diameter on uninsulated piping. The sleeves shall be of sufficient length to pass through the entire floor or wall construction. (In addition, where sleeves pass through equipment room floors, the top of the sleeves shall terminate at a minimum of 2" above the finished floor line.)
2. Where piping passes through floors, walls or decks of frame construction, sleeves shall be constructed of 22 gauge galvanized formed sheet steel. Piping passing through floors, walls or decks of masonry construction, shall have sleeves constructed of Schedule 40 wrought iron or steel pipe.
3. The Mechanical Contractor shall be responsible for the locating of all pipe sleeves.

4. Note:
   a. Sleeves are not required for holes drilled in masonry or concrete construction except in equipment room floors.

G. Duct Sleeves:
1. The Mechanical Contractor shall furnish and install in place in equipment room floors duct sleeves which shall be ½" larger in each dimension than insulation on insulated ducts or ½" larger in each dimension than the outside of the duct on uninsulated ducts. The sleeves shall be of sufficient length to pass through the entire floor construction. The top of the sleeves shall terminate at a minimum of 2" above the finished floor line. Sleeves shall be set in place before final floor topping is poured.
2. Sleeves shall be constructed of 16 gauge galvanized formed sheet steel.
3. The Mechanical Contractor shall be responsible for the locating of all duct sleeves.

3.06 GENERAL

A. Equipment Access:
1. Install all piping, conduit, ductwork, and accessories to permit access to equipment for maintenance. Coordinate the exact location of wall and ceiling access panels and doors with other trades, making sure that access is available for all equipment and specialties.

B. Coordination
1. Verify that all devices are compatible for the surfaces on which they will be used. This includes, but is not limited to, diffusers, register, grilles, and recessed or semi-recessed heating and/or cooling terminal units installed in/on architectural surfaces.
2. Coordinate all work with other contractors prior to installation. Any installed work that is not coordinated and that interferes with other contractor's work shall be removed or relocated at the installing contractor's expense.
3. The Mechanical Contractor shall coordinate the installation of the gas meter and confirm gas pressure with the utility responsible for gas service to the building.
4. Cooperate with the test and balance agency in ensuring Section 24 05 00 specification compliance. Verify system completion to the test and balance agency (flushing, pressure testing, chemical treatment, filling of liquid systems, proper pressurization and air venting of hydronic systems, clean filters, clean strainers, duct and pipe systems cleaned, controls adjusted and calibrated, controls cycled through their sequences, etc.) ready for testing, adjusting and balancing work. Demonstrate the starting, interlocking and control features of each system so the test and balance agency can perform its work.
5. Install dampers, shut off and balancing valves, flow measuring devices, gauges, temperature controls, etc., required for functional and balanced systems.

C. Lubrication
1. Lubricate all bearings with lubricant as recommended by the manufacturer before the equipment is operated for any reason. Once the equipment has been run, maintain lubrication in accordance with the manufacturer's instructions until the work is accepted by the Owner. Maintain a log of all lubricants used and frequency of lubrication; include this information in the Operating and Maintenance Manuals at the completion of the project.

END OF SECTION

SECTION 23 05 12
HANGERS, SUPPORTS AND ANCHORS

PART 1 GENERAL

1.01 Related Documents
- A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 RELATED WORK
- A. 23 07 00 HVAC Insulation

1.03 QUALITY ASSURANCE
- A. Substitution of Materials: Refer to General Conditions of the Contract.
- B. Inclusion of a manufacturer or product in the specifications does not constitute compliance with Buy America requirements.

1.04 SHOP DRAWINGS
- A. Include dimensions, capacities, materials of construction, weights, wiring diagrams and appropriate identification for all equipment in this Section.

1.05 DESIGN CRITERIA
- A. Constructed in accordance with ASME.

PART 2 PRODUCTS

2.01 GENERAL
- A. Mechanical Contractor shall furnish all concrete inserts, expansion shields, hanger rods, beam clamps, etc., as required for support of all piping installed by him.
- B. Beam clamps shall be forged steel concentric loaded type with tie rod to lock clamp in place for all piping 5” through 8”.
- C. C type clamps may be used for piping smaller than 5”.
- D. Pipe support brackets and trapeze type hangers for piping shall be fabricated by the Mechanical Contractor.
- E. All threaded support rod and bolts shall have either nuts welded to rods, threads peened or otherwise upset, or a double set of nuts to prevent unthreading of nuts.
- F. All hanging equipment shall be suitable for piping supported.

2.02 PIPE HANGERS
- A. Manufacturers: B-Line, Fee and Mason, Anvil International, FNW, Unistrut or approved equal. Grinnell figure numbers are listed below; equivalent material by other manufacturers is acceptable.
- B. Furnish Grinnell Fig. 260 clevis type pipe hangers for all piping unless otherwise indicated.
- C. Furnish Grinnell copper plated Fig CT-65 light duty adjustable wrought clevis copper tubing hangers for uninsulated copper tubing.
- D. Furnish Grinnell Fig. 261 riser clamps to support vertical piping where required.

PART 3 EXECUTION

3.01 INSTALLATION
- A. Support all piping neatly and in an approved manner to allow for expansion, contraction and vibration. Piping shall be supported not more than 10 ft. between hangers and closer where required to prevent sagging or where required by local code, ordinance or the International Fuel Gas Code.
- B. On hot piping, the hanger may be secured directly to the pipe and the pipe insulation surround the hanger. On all cold piping with vapor barrier insulation, the hanger shall surround the outside of the pipe insulation and sheet metal protection shields specified.
- C. Piping shall be anchored where indicated or required. Submit anchor drawings to the Engineer for approval when directed.

D. For piping routed through pool areas or pool equipment rooms or where a potentially caustic environment is involved, all hangers shall be 316L stainless steel.

END OF SECTION

SECTION 23 05 13
MOTORS AND STARTERS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 RELATED WORK

A. 26 00 00 Electrical for Power Wiring

1.03 QUALITY ASSURANCE

A. Substitution of Materials: Refer to General Conditions of the Contract.

1.04 SHOP DRAWINGS

A. Include dimensions, capacities, materials of construction, weights, wiring diagrams and appropriate identification for all equipment in this Section.

1.05 REFERENCE STANDARDS

A. ANSI/IEEE 112 - Test Procedure for Polyphase Induction Motors and Generators
B. Constructed in accordance with ASME
C. ANSI/ NEMA MG-1 - Motors and Generators
D. ANSI/NFPA 70 - National Electrical Code
E. IECC 2015 with Wisconsin amendments (SPS 363)

PART 2 PRODUCTS

2.01 MOTOR REQUIREMENTS

A. All electric motors shall be NEMA standard motor sizes rated as indicated on the motor starter schedule.
B. All electronically commutated (EC) motors shall be complete with integral potentiometer, motor power input wire whip, and motor control input wire whip for 0-10 VDC control signal.
C. All motors 1 HP and larger shall meet or exceed requirements of ASHRAE 90.1.
D. All motors 1-1/2 HP and larger shall meet or exceed local utility requirements for premium efficiency motors. Mechanical Contractor shall verify current requirements with utility.
E. All motors used on variable frequency drives shall be premium efficiency inverter-duty type and must be suitable for use with the drive, including but not limited to shaft grounding rings and motor cooling.

2.02 STARTING EQUIPMENT

A. Manufacturers: Allen-Bradley, Cutler Hammer, Eaton, Johnson Controls, Square D, General Electric, Franklin Control Systems, Taco, or ABB Control Inc.
B. All starters shall be NEMA standard sizes and all starting equipment shall be of the same manufacturer.
C. All starters, pushbuttons and selector switches shall have NEMA Type 1 enclosures.

2.03 STARTERS

A. All manual starters shall be two pole for single phase fractional horsepower service with lockable on-off switch, hand-off-auto, power-run-fault indication lights, electronic overload protection, control system contacts, auxiliary dry contacts, manual-auto reset selection, fault relay, status relay, and power failure return mode. Franklin BAS-1P, Johnson Controls BMMS-1P, Taco T1P, or approved equal.
B. Except where indicated otherwise, all magnetic starters shall be combination type with circuit breaker across the line for three phase service with reset button in cover, pilot light, overload protection for each phase, undervoltage protection, missing phase protection, phase reversal, built-in control circuit transformer with 120 volt operating coils and hand-off-auto selector switch factory mounted in starter flange.

C. All starters shall be equipped with auxiliary contacts or control relays for equipment control interlocking as required.

PART 3 EXECUTION

3.01 MECHANICAL CONTRACTOR

A. Shall furnish all starting equipment including selector switches, relays, etc. He shall turn all manual and magnetic starters over to the Electrical Contractor with complete instructions and wiring diagrams required for a complete installation. All other control equipment shall be turned over to the BAS Contractor for installation.
B. Verify final locations with the Owner and the Electrical Contractor.
C. Shall furnish all fused and/or circuit breaker disconnects as required if not furnished with the equipment and turn over to the Electrical Contractor for installation.
D. Shall furnish and install all control wiring.
E. Shall confirm voltage requirements with the Electrical Contractor prior to ordering equipment.

3.02 ELECTRICAL CONTRACTOR

A. Will install all fused and/or circuit breaker disconnect switches that are furnished with mechanical equipment or by the Mechanical Contractor. Electrical Contractor shall coordinate exact requirements with the Mechanical Contractor and the actual equipment furnished.
B. Will furnish and install all power wiring from panel board to motors and junction boxes in factory-assembled units.
C. Will install all starters in cooperation with and under the supervision of the Mechanical Contractor.

END OF SECTION

SECTION 23 07 00
HVAC INSULATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 RELATED WORK

A. 23 20 01 Pipe and Pipe Fittings
B. 23 31 00 Ductwork

1.03 QUALITY ASSURANCE

A. Substitution of Materials: Refer to General Conditions of the Contract.

1.04 SHOP DRAWINGS

A. Submit a schedule of all insulating materials to be used including adhesives, fastening methods, fitting material and intended use of each material. Include manufacturer’s data sheets indicating density, thermal characteristics, jacket type and manufacturer’s installation instructions.

1.05 DEFINITIONS

A. Concealed: shafts, furred spaces, space above finished ceilings, utility tunnels and crawl spaces. All other areas, including walk through tunnels shall be considered as exposed.

PART 2 PRODUCTS

2.01 GENERAL

A. All insulation, facings, mastics and tapes installed within the building shall have a composite flame and smoke hazard rating as tested by procedure ASTM E-84-80, NFPA-255 and UL-723, not exceeding 25 flame spread or 50 smoke developed.
B. All insulation, facings, mastics, sealants and tapes shall be free of asbestos.
C. Duct insulation to be applied after duct tape and adhesive and/or duct sealant is applied by sheet metal contractor. Allow sufficient time for tape and adhesive to dry and/or duct sealant to cure before insulating ducts.

2.02 DUCTWORK

A. Type of ductwork and type of insulation:
   1. All ductwork. **Rigid Board**
   2. Louver and damper frames. **Rigid Board**
B. Rigid Board insulation:
   1. Ductwork, louver, and damper frames: Minimum two-inch (2”) thick Owens-Corning, Manville, Certainteed or Knauf fiberglass duct insulation with factory applied aluminum foil reinforced kraft vaporproof facing. The entire assembly shall provide a minimum “installed R value” of 6 for all applied surfaces.
   2. Provide with aluminum jacket.

PART 3 EXECUTION

3.01 INSTALLATION

A. Systems and/or equipment which is specified to be pressure tested or inspected shall not be insulated until testing and inspection has been successfully completed.
B. Insulation jackets and accessories shall only be installed under ambient temperatures recommended by the manufacturer of the material.
C. Install insulation with smooth and even surfaces and on clean, dry surfaces. Poorly fitted joints or use of filler in voids will not be accepted. Use full length material wherever possible.

END OF SECTION

SECTION 23 20 01
PIPE AND PIPE FITTINGS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 REFERENCE STANDARDS

A. ANSI B16.5 - Pipe Flanges and Flanged Fittings
B. ASTM A53 - Pipe, Steel, Black & Hot Dipped, Zinc Coated Welded & Seamless
C. ASTM B75 - Seamless Copper Tube
D. ASTM B88 - Seamless Copper Water Tube
E. ASTM B280 - Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
F. ASTM D2513 - Thermoplastic Gas Pressure Pipe, Tubing & Fittings
G. NFPA 54 – National Fuel Gas Code

1.03 QUALITY ASSURANCE

A. Order all Type E and Type S steel pipe with heat numbers rolled, stamped, or stenciled to each length or each bundle, depending on the size of the pipe, and in accordance with the appropriate ASTM specification.
B. All grooved joint couplings, fittings, valves and specialties shall be the products of a single manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.
C. Order all copper water tube with each length marked with the name or trademark of the manufacturer and type of tube; with each shipping unit marked with the purchase order number, metal or alloy designation, temper, size, and name of supplier; all in accordance with ASTM B88.
D. Order all copper refrigeration tube with each shipping unit marked with the purchase order number, metal or alloy designation, temper, size, and name of supplier; with soft straight lengths or coils identified with a tag indicating that the product was manufactured in accordance with ASTM B280; and with each hard temper straight length identified throughout its length by a blue colored marking not less than 3/16 inch in height and a legend at intervals of not greater than three feet that includes the designation “ACR” and pipe outside diameter.
E. Any installed material not meeting the specification requirements must be replaced with material that meets these specifications without additional cost to the Owner.

1.04 DESIGN CRITERIA

A. Use only new material, free of defects, rust and scale, and meeting the latest revision of ASTM specifications as listed in this specification.
B. Construct all piping for the highest pressures and temperatures in the respective system in accordance with ANSI B31, but not less than 150 PSIG unless specifically indicated otherwise.
C. Non-metallic piping will be acceptable only for the services indicated. It will not be acceptable in occupied spaces and ventilation plenum spaces, including plenum ceilings.
D. For all pipe sizes and materials, welded, threaded or soldered, use only long radius elbows having a centerline radius of 1.5 pipe diameters. Short radius elbows will not be allowed.
E. Where ASTM A53 type F pipe is specified, ASTM A53 grade A type E or S, or ASTM A53 grade B type E or S may be substituted at Contractor’s option. Where ASTM A53 grade A pipe is specified, ASTM A53 grade B pipe may be substituted at Contractor’s option. Where the grade or type is not specified, Contractor may choose from those commercially available.

1.05 WELDER QUALIFICATIONS

F. Welding procedures, welders, and welding operators for all building service piping to be in accordance with certified welding procedures of the National Certified Pipe Welding Bureau.

G. The Engineer or Owner reserves the right to test the work of any welder employed on the project, at the Contractor's expense. If the work of the welder is found to be unsatisfactory, the welder shall be prevented from doing further welding on the project.

PART 2 PRODUCTS

2.01 NATURAL GAS

A. Two inch (2") and Smaller: ASTM A53, type F, standard weight (Schedule 40) black steel pipe with ASTM A197/ANSI B16.3, Class 150 black malleable iron threaded fittings or ASTM A234 grade WPB/ANSI B16.9 standard weight, ERW, carbon steel weld fittings.

B. The Contractor, at his option, may use a carbon steel, cold press system utilizing ASTM A53 Schedule 40 black steel piping rated for -40 degrees F to 180 degrees F at 125 psi. Viega MegaPress G or approved equal.

C. Gas piping systems that exceed 5 PSIG design pressure shall be fully welded construction on all pipe sizes.

2.02 UNIONS AND FLANGES

A. Two inch (2") and Smaller: ASTM A197/ANSI B16.3 malleable iron unions with brass seats. Use black malleable iron on black steel piping and galvanized malleable iron on galvanized steel piping. Use unions of a pressure class equal to or higher than that specified for the fittings of the respective piping service.

PART 3 EXECUTION

3.01 PREPARATION

A. Remove all foreign material from interior and exterior of pipe and fittings.

3.02 ERECTION

A. Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a window, doorway, stairway, or passageway. Where interferences develop in the field, offset or reroute piping as required to clear such interferences. In all cases, consult drawings for exact location of pipe spaces, ceiling heights, door and window openings or other details before installing piping.

B. Mitered elbows, notched tees, bull-head tees, and orange peel reducers are not acceptable. On threaded piping, bushings are not acceptable.

C. Use long-radius elbows on all piping with the exception of Victaulic grooved piping system standard elbows as noted within the specifications above. For all other piping types including welded, soldered, or threaded, short radius elbows are not acceptable.

D. Offsets shall be achieved using 45-degree elbows whenever possible.

E. The use of back-to-back 90-degree elbows is not acceptable. All 90-degree elbows shall be separated by a minimum of five (5) pipe diameters of straight pipe run to not be considered as back-to-back elbows.

F. "Weldolets" and "Threadolets" may be used for branch takeoffs up to one-half (1/2) the diameter of the main. The use of "saddle taps" or "pulled tees" is not acceptable.

G. Install isolation valves in branch piping for all hydronic equipment including factory pre-piped equipment.

H. Do not route piping through transformer vaults or above transformers, panelboards, or switchboards, including the required service space for this equipment, unless the piping is serving this equipment.

I. Install all valves, control valves, and piping specialties, including items furnished by others, as specified and/or detailed. Make connections to all equipment installed by others where that equipment requires the piping services indicated in this section.

J. Caulk around all piping passing through all walls, ceilings and floors.

3.03 WELDED PIPE JOINTS

A. Make all welded joints by fusion welding in accordance with ASME Codes, ANSI B31, and State Codes where applicable.

B. Electrodes shall be Lincoln, or approved equal, with coating and diameter as recommended by the manufacturer for the type and thickness of work being done.

3.04 THREADED PIPE JOINTS

A. Use a thread lubricant or Teflon tape when making joints; no hard setting pipe thread cement or caulking will be allowed.

3.05 NATURAL GAS

A. Pitch horizontal piping down 1" in 60 feet in the direction of flow. Install a 4" minimum depth dirt leg at the bottom of each vertical run and at each appliance. When installing mains and branches, cap gas tight each tee or pipe end which will not be immediately extended. All branch connections to the main shall be from the top or side of the main.

B. Do not install gas pipe below a building or its foundation.

C. Underground gas piping depth shall be per NFPA requirements and/or per local code requirements. At a minimum, underground gas piping shall be installed 18"-24" below grade level.

D. All joints in underground polyethylene gas pipe must be made by qualified personnel proficient in the joining methods of ASTM D2513 thermoplastic gas pressure pipe and polyethylene fittings. Do not install polyethylene gas pipe inside buildings.

E. Gas piping concealed within a wall or installed within a ventilation air plenum shall be seamless or welded construction only. Threaded or press-fit joints are not allowed.

F. If an above ground vent terminates in an area subject to snow accumulation, terminate the line at least five feet above grade.

G. Install a shut off valve at each appliance. Provide a valved connection at the main for equipment and appliances furnished by others.

H. Install two (2) vent lines from gas trains on each item of gas fired equipment to outdoor atmosphere. One valve sized vent line connected to the gas vent valve, the other vent line, ½" size, connected to the reference connections on each main and pilot gas pressure regulator and the high and low gas pressure switches and run to outdoor atmosphere. Each gas vent pipe shall be individually piped to outdoor atmosphere. Terminate gas vent piping at the building exterior with a screened vent cap.

I. Test gas piping and/or propane piping for leaks after fabrication as follows: Before appliances are connected, gas piping systems shall stand a pressure of at least 150% of the working pressure but not less than 100 pounds per square inch for a period of not less than 24 hours without a drop in pressure due to leakage. Equipment not rated to withstand the test pressure shall be isolated from the piping system under test. The piping shall be filled with air or inert gas. **Oxygen shall never be used.** The source of pressure shall be isolated before the pressure tests are made.

J. Paint all gas piping installed outdoors with rust resistive paint. Piping run on the building exterior walls shall match the color of the wall. Piping run on the roof shall be painted bright yellow.

3.06 UNIONS AND FLANGES

A. Install a union or flange as required, at each automatic control valve and at each piping specialty or piece of equipment which may require removal for maintenance, repair, or replacement. Where a valve is located at a piece of equipment, locate the flange or union connection on the equipment side of the valve. Concealed unions or flanges are not acceptable.

END OF SECTION

SECTION 23 20 02
HVAC VALVES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 QUALITY ASSURANCE

A. Substitution of Materials: Refer to General Conditions of the Contract.

1.03 SHOP DRAWINGS

A. Include dimensions, capacities, materials of construction, weights, wiring diagrams and appropriate identification for all equipment in this Section.

1.04 DESIGN CRITERIA

A. Where valves are specified for individual mechanical services (i.e., hot water heating, steam, etc.), all valves shall be of the same manufacturer.

B. Furnish valve handle extensions on all insulated piping.

PART 2 PRODUCTS

2.01 GAS VALVES

A. Manufacturers: Walworth, Homestead, Nordstrom or approved equal.

B. Two inch (2”) and smaller lubricated plug valves complete with cast iron body, wrench operated and screwed ends suitable for 125 PSI service.

C. Two and one-half inch (2½”) and larger lubricated plug valves with cast iron body, wrench operated and flanged ends suitable for 125 PSI service.

PART 3 EXECUTION

3.01 INSTALLATION

A. Properly align piping before installation of valves in an upright position; operators installed below the valves will not be accepted.

B. Install valves in strict accordance with valve manufacturer’s installation recommendations. Do not support weight of piping system on valve ends.

C. Prior to flushing of piping systems, place all valves in the full-open position.

END OF SECTION

SECTION 23 20 04
PIPING SPECIALTIES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 RELATED WORK

A. 23 20 01 Pipe and Pipe Fittings

1.03 QUALITY ASSURANCE

A. Substitution of Materials: Refer to General Conditions of the Contract.

1.04 SHOP DRAWINGS

A. Include dimensions, capacities, materials of construction, weights, and appropriate identification for all equipment in this Section.

1.05 DESIGN CRITERIA

A. Constructed in accordance with ASME.

PART 2 PRODUCTS

2.01 PIPE SEALS

A. Manufacturers: Thunderline Corp., Metraflex Metraseal, Proco, or approved equal.

B. Furnish modular wall and casing type seals. Furnish model LS-200C for 1” and smaller pipe, model LS-300C for 1-1/4” through 5” diameter pipe and model LS-400C for 6” and larger pipe.

C. Each seal shall consist of neoprene rubber sealing links, Cathodic type pressure plates constructed of aluminum and hard coated with bolts of cadmium plated steel. Seals shall be air and watertight.

2.02 GAS PRESSURE REGULATORS

A. Manufacturer: Fisher, Itron, Rockwell, Sensus, or approved equal.

B. Furnish regulator of size and capacity as indicated on drawings complete with die-cast aluminum body, screwed connections, Buna N diaphragm and internal relief. The regulator shall be constructed for 125 PSIG working pressure.

PART 3 EXECUTION

3.01 PIPE SEALS

A. Install where indicated on the drawings. Pipe sleeves shall be set in walls, floors and ceilings and cemented in place to receive pipe and the link pipe seal. Installation shall be made in accordance with manufacturer’s recommendations.

3.02 GAS PRESSURE REGULATORS

A. Install gas pressure regulators in accordance with manufacturer recommendations.

END OF SECTION

SECTION 23 31 00
DUCTWORK

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 RELATED WORK

A. Section 23 33 07 Ductwork Accessories

1.03 QUALITY ASSURANCE

A. Substitution of Materials: Refer to General Conditions of the Contract.

B. Inclusion of a manufacturer or product in the specifications does not constitute compliance with Buy America requirements.

1.04 SHOP DRAWINGS:

A. Include dimensions, capacities, materials of construction, weights, wiring diagrams and appropriate identification for all equipment in this Section.

1.05 REFERENCE STANDARDS

A. SMACNA

B. NFPA 90A Standards for the Installation of Air Conditioning and Ventilating Systems.

C. UL 181

1.06 DESIGN CRITERIA

A. Construct all ductwork to be free from vibration, chatter, objectionable pulsations and leakage under specified operating conditions.

B. Use material, weight, thickness, gauge, construction and installation methods as outlined in the following most current SMACNA publications:

1. HVAC Duct Construction Standards, Metal and Flexible.
2. HVAC Air Duct Leakage Test Manual.
3. HVAC Systems - Duct Design.
4. Rectangular Industrial Duct Construction Standard.
5. Round Industrial Duct Construction Standards.
6. Thermoplastic Duct (PVC) Construction Manual.

C. Use products which conform to NFPA 90A, possessing a flame spread rating of not over 25 and a smoke developed rating no higher than 50.

PART 2 PRODUCTS

2.01 GENERAL

A. Ductwork, except as hereinafter noted otherwise, shall be minimum G-90 galvanized steel of lock forming grade conforming to ASTM Standards A-525 and A-527. Duct wall thicknesses, reinforcements, seams, joints, sealing, cross bracing, beading, hangers, supports, etc., shall be in accordance with the latest manual of heating, ventilating and air conditioning duct construction standards as published by the Sheet Metal and Air Conditioning Contractors National Assoc., Inc. (SMACNA).

B. All exhaust air, return air, fresh air, transfer air and mixing plenum ductwork shall be 2” pressure class.

C. All supply air ductwork shall be 2” pressure class.

PART 3 EXECUTION

3.01 INSTALLATION

A. Verify dimensions at the site, making field measurements and drawings necessary for fabrication and erection. Check plans showing work of other trades and consult with Engineer in the event of any interference.

B. Make allowances for beams, pipes or other obstructions in building construction and for work of other contractors. Transform, divide or offset ducts as required, in accordance with SMACNA, except do not reduce duct to less than six inches in any dimension and do not exceed a 6:1 aspect ratio.

C. Cut or drill test holes in ducts where indicated or as required. Cap with neoprene plugs.

D. Provide frames constructed of angles or channels for coils, filters, dampers or other devices installed in duct systems, and make all connections to such equipment, including equipment furnished by others. Secure frames with gaskets and screws or nut, bolts and washers.

E. Seal all ductwork, all transverse joints, longitudinal seams, girth joints, branch intersections, fitting subsections, lower connections, grilles, registers and outlets connections, access door frame connections, etc., in accordance with SMACNA Seal Class A requirements and current IECC requirements utilizing Hardcast Inc. Sure-Grip 404 or Iron Grip 601, or equivalent, UL classified vinyl acrylic duct sealant. Clean all surfaces of dirt, oil and grease before application. Coverage to be approximately 125 square feet per gallon with 20 mil thick wet film. At Contractor's option, duct sealing may be performed utilizing Aeroseal duct sealing system in lieu of vinyl acrylic duct sealant. The use of duct sealing tape is not acceptable.

F. Seal water-tight with G.E. Silicone Construction Sealant all joints within 6" of bottom of all outside air intake ducts and pitch outside air intakes to outside of building.

G. Seal water-tight with G.E. Silicone Construction Sealant all joints within 6" of bottom of all exhaust ductwork from outside termination back to automatic exhaust dampers and/or backdraft dampers.

H. Caulk around all ductwork passing through all walls, ceilings, and floors. For fire rated walls use United States Gypsum Thermafiber 4" thick and G.E. Pensil silicone foam sealant per plan detail. For non-rated walls fiberglass insulation may be used in lieu of the Thermafiber. For plenum walls that separate plenums from non-plenum ceiling spaces, the penetration shall be treated as a one hour fire rated wall.

I. Transverse joints of all pressure classes of ductwork may be made with Ductmate Industries, Inc. or Nexus flanged type joints, or shop fabricated TDC/TDF joints. Joints to be complete with 20-gauge angles with integral mastic sealer, gasket tape, corner pieces, snap-on cleats, etc. Joint shall have zero percent leakage at all pressures up to 10" W.G.

J. Do not install ductwork through dedicated electrical rooms or spaces unless the ductwork is serving this room or space.

K. The installation of electrical conduit of any type, low or line voltage, or piping of any kind through ductwork of any type is strictly prohibited.

L. Do not hang or support any ductwork from other ductwork or piping runs. All ductwork systems shall be independently supported from the building structure. The work of other trades shall not be supported by the HVAC ductwork or piping support systems.

M. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

N. During construction provide temporary closures of taped polyethylene or ductcap covers on open ductwork to prevent construction dust from entering ductwork system.

O. Use double nuts and lock washers on threaded rod supports.

P. The use of wire cable as a duct support is prohibited on all exposed ductwork. Dual-cable supports with corner or side hanging brackets or trapeze hangers is allowed on concealed rectangular, oval, and round ductwork. The use of a single hanging cable will only be allowed on round ductwork.

Q. All open-end ductwork and ductwork exposed within a space shall have all sharp edges rolled or flanged to eliminate any dangerous or hazardous condition.

R. All vertical ductwork shall be rigidly supported from adjacent building structure or wall to eliminate swaying or other movement.

S. All exposed ductwork shall have excess sealers and adhesive at joints removed and thoroughly cleaned for a neat appearance.

3.02 DUCT TRIM STRIPS

A. The Mechanical Contractor shall furnish and install finish trim strips of 20 gauge galvanized formed sheet steel or angle iron for all exposed ductwork wall penetrations.

END OF SECTION

SECTION 23 33 07
DUCTWORK ACCESSORIES

PART 1 GENERAL

1.01 RELATED DOCUMENTS
A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 RELATED WORK
A. 23 31 00 Ductwork

1.03 QUALITY ASSURANCE
A. Substitution of Materials: Refer to General Conditions of the Contract.

1.04 SHOP DRAWINGS
A. Include dimensions, capacities, materials of construction, weights, wiring diagrams and appropriate identification for all equipment in this Section.

1.05 REFERENCE STANDARDS
A. NFPA 90A - Standard for Installation of Air Conditioning and Ventilating Systems.
B. SMACNA - HVAC Duct Construction Standards - Metal and Flexible.
C. UL 214
D. UL 555 - Standard for Fire Dampers and Ceiling Dampers.
E. UL 555S - Leakage Rated Dampers for Use in Smoke Control Systems.

PART 2 PRODUCTS

2.01 GENERAL
A. All ductwork accessories installed within ductwork serving pool areas or moisture-related areas shall be suitable for the environment served with a zinc chromate rust resistant finish or be constructed of anodized aluminum.

2.02 WIRE MESH SCREEN
A. Furnish wire mesh screen with aluminum .063” thick wires with ½ inch x ½ inch spacing.

2.03 WEATHERPROOF LOUVERS
A. American Warming, Air Balance Inc., Cesco, Dowco, Industrial Louvers, Inc., Louvers & Dampers, Inc., NCA Mfg., Pottorff, Reliable, Ruskin, Greenheck, Vent Products, or pre-approved equal.
B. Furnish louvers with .081” extruded aluminum alloy blades, frame and supports, horizontal “J” style drainable blades with maximum of 4’-0” unsupported length in a fixed 6” core, 6” minimum blade depth, 5-3/4” blade spacing and 37.5 deg. blade angle with hidden mullions.
C. Minimum 1,000 fpm beginning point of water penetration.
D. Furnish louvers with channel type frame for installation in new construction and flange type frame for installation in existing construction with 3/4” mesh .051” aluminum bird screen in extruded U frame mounted behind blades. All screws, bolts, hardware, etc., shall be stainless steel.
E. Units to have a baked enamel finish of custom color as selected by the Engineer.
F. See architectural drawings for color and/or finish schedules and information.

PART 3 EXECUTION

3.01 WEATHERPROOF LOUVERS
A. Connect outside air intake duct to the louver, sealing all connections air and water tight.
B. Install insulated metal panel on unused portion of louver. Panels must be sealed weathertight to louver assembly with flashing as required for proper drainage to outside of building.

END OF SECTION

SECTION 23 34 00
FANS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 RELATED WORK

A. 23 05 13 Motors and Starters

1.03 QUALITY ASSURANCE

A. Substitution of Materials: Refer to General Conditions of the Contract.

1.04 SHOP DRAWINGS

A. Include dimensions, capacities, materials of construction, weights, wiring diagrams and appropriate identification for all equipment in this Section.

1.05 DESIGN CRITERIA

A. Test and certify all fans in accordance with the applicable AMCA test code.
B. The motor furnished with the fan shall not operate into the motor service factor.
C. Where inlet and outlet ductwork or any fan is changed from that shown on the drawings, provide any motor, drive and/or wiring changes required due to increased static pressure or baffling necessary to prevent uneven air flow or improved mixing.

PART 2 PRODUCTS

2.01 GENERAL

A. Furnish fans of size, class, type, arrangement and capacity as scheduled on the drawings.
B. Furnish complete with motors, wheels, drive assemblies, bearings, vibration isolation devices and accessories required for specified performance.
C. Use OSHA approved belt guards that totally enclose the entire drive. Construct guards of expanded metal to allow for ventilation and provide tachometer openings at shaft locations.
D. Statically and dynamically balance all fans so they operate without objectionable noise or vibration.
E. All direct-drive fans with ECPM motors shall be selected to be capable of 125% of the scheduled design airflow and shall be capable of receiving a 0-10 vdc signal from an integral speed dial for fan speed modulation.

2.02 EXHAUST FANS

A. Furnish and install sidewall exhaust fans of size, type and capacity as shown and scheduled on the drawings. Acceptable manufacturers: Cook, Carnes, Penn, Greenheck.
B. All components shall be AMCA approved and capacities shall be AMCA rated and bear the AMCA seal.
C. Fan shall be a wall mounted, ECM driven, steel or aluminum propeller fan. Fan shall be listed by Underwriters Laboratories (UL 705) and UL listed for Canada (CSA Standard 113 - M1984). The fan shall be of bolted and welded construction utilizing corrosion resistant fasteners. The motor, bearings and drives shall be mounted on a minimum 14 gauge steel power assembly. The power assembly shall be bolted to a minimum 14 gauge wall panel with continuously welded corners and an integral Venturi. The unit shall bear an engraved aluminum nameplate.
D. All steel fan components shall be finished with an electrostatically applied, baked polyester powder coating, followed by a minimum 2 mil thick baked powder finish. Paint must exceed 1,000 hour salt spray under ASTM B117 test method.
E. Propeller shall be a high-efficiency fabricated steel design with blades securely riveted to hub. The hub shall be keyed and locked to the fan shaft utilizing two setscrews. Propeller shall be balanced in accordance with AMCA standard 204-96, balance quality and vibration levels for fans.

F. Motor shall be heavy duty type with permanently lubricated sealed ball bearings and furnished at the specified voltage, phase and enclosure. Bearings shall be designed and individually tested specifically for use in air handling applications. Construction shall be heavy duty regreasable ball type in a cast iron pillowblock housing selected for a minimum L50 life in excess of 200,000 hours at maximum cataloged operating speed. Belts shall be oil and heat resistant, non-static type. Drives shall be precision machined cast iron type, keyed and securely attached to the wheel and motor shafts. Drive shall be sized for 150% of the installed motor horsepower. The variable pitch motor drive must be factory set to the specified fan RPM.

G. Provide wall discharge assembly, as indicated on the drawings.

2.03 Controls

A. Propeller exhaust fan controls shall be accomplished by a reverse acting programmable thermostat.

B. Thermostat shall be 120V, snap style, dial type.

C. Thermostat shall have durable construction, with analog dial ranging from 30F-110F.

D. See Part 3 for Sequence of Operation.

2.04 destratification fans - HVLS

A. Manufacturers: Altra-Air Sailfin, Big Ass Fan, Entrematic, Greenheck, MacroAir, Refresh Fans, Rite-Hite, Rupp, Swifter Fans, or pre-approved equal.

B. Furnish minimum three-blade fan of diameter scheduled, dynamically balanced with an ECPM variable speed motor with integral VFD, U.L. listed, with all necessary hooks, safety cables and supports for a complete installation.

C. Remote control panel wall mounted with on/off control, fan speed control, LCD display and keypad.

D. Powder coated airfoil blades of custom colors as selected by the Engineer. See architectural drawings for color and/or finish schedules and information.

E. Custom hub cover to match blade color.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install all fans where indicated on the drawings and in accordance with manufacturers recommendations.

B. Field verify all existing dimensions prior to ordering any fan array system.

C. The Mechanical Contractor shall turn over all solid-state speed controllers serving direct-drive fans and destratification fans to the Electrical Contractor for installation and coordinate required locations.

D. All suspended fans shall be supported from steel supports with suspensions, frames, brackets, braces, etc. Supports shall be constructed to properly support and distribute the load and shall incorporate anti-vibration devices, anti-sway bracing, and anchoring plates as required. Supports may be constructed of I-beams, channels, angle iron or threaded steel rods. All permanent supports shall be welded. All threaded rods and bolts shall have nuts welded to rod, threads peened or double nuts.

E. Ceiling exhaust fans shall have concealed supports and shall be set with the fan housing flush with the finish ceiling and inlet grille furnished with the fan shall cover opening between fan housing and ceiling.

3.02 Sequence Of Operation

A. Exhaust fan shall be controlled from reverse acting thermostat.

B. Dampers shall be interlocked with exhaust fan operation.

C. When exhaust fan is called to run by the thermostat, the exhaust fan shall run until room temperature is maintained.

D. When exhaust fan is called to run, the associated motorized dampers shall open and remain open until the exhaust fan turns off.

E. When the exhaust fan is off, the associated motorized dampers shall be closed.

END OF SECTION

SECTION 23 82 05
ELECTRIC HEATING TERMINAL UNITS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work this Section.

1.02 RELATED WORK

A. 23 05 13 Motor and Starters.

1.03 QUALITY ASSURANCE

A. Substitution of Materials: Refer to General Conditions of the Contract.

1.04 SHOP DRAWINGS

A. Include dimensions, capacities, materials of construction, weights, wiring diagrams and appropriate identification for all equipment in this Section.

1.05 DESIGN CRITERIA

A. Electrical components and work must be in accordance with National Electrical Codes.
B. Electrical equipment and heaters shall be UL listed for service specified.

PART 2 PRODUCTS

2.01 GENERAL

A. Furnish types, arrangements and capacities as scheduled.

2.02 Electric Baseboard Radiation

A. Manufacturers: Berko, Brasch, Electromode, Markel, or Q-Mark.
B. Furnish factory assembled, wired and tested units of lengths as indicated on plans. Cabinets with steel front, back and top panel; bottom inlet opening, front discharge opening or grille, end caps electric resistance heating element with high temperature limit cutout and manual disconnect switch.
C. Cabinets to have baked enamel finish of manufacturers standard color as selected by Engineer.
D. Integral thermostat.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Install units in accordance with manufacturers installation instructions.
B. Install room thermostats and control wiring as required for units indicated.
C. Coordinate location of units with other trades to assure correct recess size for recessed units.
D. After installation, provide protective covers to prevent accumulation of dirt on unit during balance of construction.

3.02 ELECTRIC BASEBOARD RADIATION

A. Install units where indicated on drawings. Support units with wall support brackets and suspend heating element from the brackets.

END OF SECTION

SECTION 24 05 00
TESTING AND BALANCING OF HVAC SYSTEMS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections apply to work of this Section.

1.02 RELATED WORK

PART 2 PRODUCTS NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. The Mechanical Contractor shall obtain the services of an independent NEBB, TABB or AABC certified subcontractor who specializes in and whose business is limited to testing, adjusting and balancing of air and water distribution systems. All tests shall be performed with recently calibrated instruments suitable for the test being performed. This subcontractor shall be responsible for complete testing, adjusting and balancing of the hydronic systems and all new and remodeled air moving systems.

B. Inspecting, Checking and Testing System:
   1. Mechanical Contractor shall submit to the owner, in triplicate, at the completion of his work a certified statement signed by a principal of the firm stating that the system has been fully adjusted and balanced in accordance with requirements outlined and that all system components have been checked and tested, adjusted, and is operating properly as noted by plans and specifications. This statement shall be submitted before the system is presented to the Owner for final inspection.

C. Approved test and balance contractors:
   1. Balance Technologies
   2. Balco Balancing
   3. Badger Balancing
   4. ESA
   5. Midwest Fluid Balancing
   6. Precision Balancing Group
   7. Professional Systems Analysis

3.02 AIR BALANCE WORK

A. Air balance work shall pertain to all types of air handling equipment including but not limited to air handling units, rooftop units, makeup air units, energy recovery units, fan coil units, blower coil units, furnaces, dust collectors, exhaust fans, supply fans, relief fans, etc.

B. The setting and adjusting of all dampers, deflecting vanes, discharge vanes and accessories to achieve indicated air distribution patterns in all parts of the air systems. Air quantities shall be as designated, with allowable error of plus or minus 5%.

C. The setting and adjusting of all belted fan speeds as may be required to attain proper total CFM deliveries, including the furnishing and installation of additional belts and drives as dictated by field conditions. For belt-driven VAV units, the sheaves shall be adjusted or replaced as required to achieve full design airflow with the motor VFD at 60 Hz to optimize unit turndown capabilities. For direct-drive VAV units, the motor VFD shall be set as required to achieve the unit manufacturer’s design fan speed as indicated in the certified shop drawings performance data. This setting must be verified as in many cases it will be in excess of 60 Hz.

D. The inspection of the function and operation of all automatic controls to ensure proper operation and control cycles.

E. Submitting a report on each phase of the work.

F. Air balancing shall be accomplished with duct volume dampers and not dampers at the terminal outlets. Fine balancing will be permitted by means of terminal outlet dampers.

G. Record all test data in triplicate and submit to Engineer.

H. Air System Balance:

1. With the air handling systems set to operate at full scheduled supply fan speed, the Balancing Contractor shall perform the following tests and compile the following information:
    a. Air Handling Equipment
        1) Design Conditions:
            a) CFM supply air.
            b) Static pressure.
            c) Motor HP
            d) Outside air CFM (minimum).
            e) Outside air CFM (maximum).
            f) Fan RPM.
            g) Fan motor brake horsepower.
        2) Installed Equipment:
            a) Manufacturer.
            b) Size.
            c) Arrangement, discharge class.
            d) Motor HP, voltage, phase, cycles, full load amperes.
        3) Field Test:
            a) Fan speed.
            b) No load operating amperes.
            c) Fan motor operating amperes.
            d) Calculated BHP.
            e) Static pressure.
        4) Test for Total Air:
            a) Size of discharge and outside air ducts.
            b) Number of and location of velocity and pressure readings.
            c) Duct average velocity.
            d) Total CFM.
            e) Outside air CFM (minimum).
            f) Outside air CFM (maximum).
            g) Return air CFM (minimum).
            h) Return air CFM (maximum).
    b. Individual Terminal Outlets:
        1) Identify each supply outlet and exhaust as to location area and fan system.
        2) Manufacturer and type.
        3) Size.
        4) Free area, core area or neck area.
        5) Terminal factor.
        6) Required FPM and test velocity.
        7) Required CFM and test results.
2. In addition to the above work, check operation of all automatic temperature control equipment, verify all thermostat, aquastat, airstat, etc., setpoints and operations, and enlist the aid of the Mechanical Contractor to make necessary adjustments where required.

END OF SECTION

18. Ferry Operations Building Electrical, Item SPV.0060.03.

A Description

This item consists of wiring and electrical work for the Ferry Operations Building. The work shall be in accordance to the applicable plans, the special provision “General Requirements for Building Construction”, and the following specifications.

B Material

See specifications below.

C Construction

See specifications below.

D Measurement

The department will measure Ferry Operations Building Electrical 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.0060.03	Ferry Operations Building Electrical	EACH

Payment is full compensation for furnishing and installing all materials and equipment.

SECTION 26 05 00
ELECTRICAL CONTRACT REQUIREMENTS

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work under this Section.

1.02 APPLICABLE PUBLICATIONS

A. Publications, standards and listing requirements called out in the Sections of this Section of Labor shall form a part of these specifications as if contained herein.

B. The requirements of the Contract Documents, including the General Conditions, and Supplementary Conditions, and Special Provision “General Requirements for Building Construction – Section 01 - General Requirements, apply to this section except as modified herein.

1.03 DESCRIPTION OF WORK

A. Sections included:

1. Section 26 05 00 - ELECTRICAL CONTRACT REQUIREMENTS
2. Section 26 05 01 - PROJECT SPECIAL CONDITIONS
3. Section 26 05 04 - DOCUMENTATION
4. Section 26 05 05 - THROUGH PENETRATION FIRESTOPPING
5. Section 26 05 19 - WIRE AND CABLE
6. Section 26 05 26 - GROUNDING
7. Section 26 05 29 - SUPPORTING DEVICES
8. Section 26 05 34 - RACEWAYS
9. Section 26 05 35 - ELECTRICAL BOXES
10. Section 26 05 37 - LOCATION OF OUTLETS AND EQUIPMENT
11. Section 26 05 53 - ELECTRICAL IDENTIFICATION
12. Section 26 09 23 - LIGHTING CONTROLS
13. Section 26 24 16 - PANELBOARDS
14. Section 26 27 02 - MOTOR WIRING
15. Section 26 27 26 - WIRING DEVICES
16. Section 26 27 28 - CIRCUIT AND MOTOR DISCONNECTS
17. Section 26 43 13 - SURGE SUPPRESSION
18. Section 26 51 13 - INTERIOR LIGHTING FIXTURES
19. Section 27 10 00 - STRUCTURED CABLING SYSTEM
20. Section 28 23 00 - SECURITY CAMERA SYSTEM

B. Work Included:

1. The work covered by this Section of the specifications includes the furnishing of all labor, materials, tools, equipment, permits, certificates and temporary protection necessary for or incidental to executing and completing the electrical work, communications work, and work on related systems.
2. All work shall be as specified and indicated on the drawings unless specifically excepted on the drawings or herein.

3. Read all other Sections of the Specifications which are applicable to this work, including the General Conditions section applicable to all bidders.

4. The Electrical Contract Requirements section is a supplement to and not a replacement for the project General Conditions section.

5. In cases of conflict with information in the General Conditions, the more stringent of the contract requirements shall be considered applicable.

6. Prior to submitting bid, call to the attention of the Electrical Engineer any material or apparatus believed to be inadequate or any necessary items or work omitted.

7. Address any questions regarding the interpretation of the plans and/or specifications at least 12 days before the bid opening.

8. The Electrical Engineer reserves the right to interpret his own specifications and plans after bids are received, and to demand that the installation conform to his intent.

9. Failure to become acquainted with existing conditions at the site shall in no way relieve the responsibility for making installation in conformance with plans and specifications without additional cost to the owner.

C. Examination of Plans, Specifications and Site:

1. Before submitting a bid, the bidder shall familiarize himself with all features of the building and site which may affect the execution of his work.

2. No extra payment will be allowed for the failure to obtain this information.

3. If there are omissions or errors in the plans or specifications, they shall be clarified with the Engineer prior to submitting bid.

4. For all remodeling projects, a site visit to the premises, for the purpose of the noting of all existing conditions which may affect work is required.

5. Knowledge of all existing conditions, which may affect work in a renovation project, shall be included in the preparation of bid.

6. Lack of information on existing conditions shall not be allowed for a valid cause for additional compensation.

D. Codes, Permits, and Inspection Fees

1. All work and materials shall conform in every respect to the current rules and requirements of the National Fire Protection Association, National and State Electrical Codes, Local Codes and Ordinances, Local Utility Regulations and OSHA.

2. Give to the proper authorities all required notices relating to the project, obtain all official permits and licenses required, pay all fees incidental thereto, deliver upon completion of the work and without cost to the Owner all required certificates of inspection and approval.

1.04 RELATED WORK ELSEWHERE

A. Applicable provisions of Special Provision “General Requirements for Building Construction – Section 01: General Conditions shall govern work in this section.

B. All other Sections of the Specifications which are applicable to or interface with work in Section 26 05 00.

C. Section 26 contractor to furnish and install all boxes, conduit and 120 volt connections for Section 27 and 28 required systems.

D. Section 26 contractor to include all costs for Section 27 and 28 in their bid.

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

B. Submit shop drawings following Section specific Shop drawing submittal guidelines.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit operation and maintenance manuals in accordance with Section 26 05 04.

B. Submit operation and maintenance manuals following Section specific shop drawing submittal guidelines.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts are to be new, undamaged and unused of current manufacture.

C. Acknowledges acquaintance with the plans and specifications and their respective requirements.

D. Guarantee that the electrical system has been installed strictly in accordance with the electrical plans and specifications using only the best of materials available, installed in a substantial manner by experienced labor.

E. Various components of the electrical system shall be placed in service prior to completion date as instructed by Owner. This shall not change the guarantee period which shall be one year after acceptance by Owner.

F. Replace and/or repair any items failing from causes of faulty workmanship, materials or design without cost to Owner at any time within one year from date of final acceptance.

1.08 WARRANTY

A. Equipment shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

PART 2 PRODUCTS

2.01 GENERAL

A. It is the intent of these specifications that all the necessary material, apparatus, and devices to complete the installation as specified herein, except such parts as are specifically excepted, shall be provided.

B. If an item is either shown on the plan or called for in these specifications, it shall be considered sufficient of said item in this contract.

C. All sizes given are as minimum.

D. Material and labor shall be first class and workmanlike and to the satisfaction of the Electrical Engineer and shall be subject to inspection test and approval at all times from commencement until acceptance of completed work.

E. Manufacturers shall be responsible for providing material listed by U.L. or other approved agencies, and all governing codes and ordinances.

F. All material must bear U.L. and/or other approved labels where possible.

G. Items specified by catalog number or brand name and approval of shop drawings will not relieve the manufacturer of this responsibility.

2.02 MATERIALS: ALTERNATE MATERIALS

A. Where materials, equipment apparatus, or other products are specified by manufacturer, brand name, and type of catalog number such designation is to establish standards of desired quality and style and shall be the basis of the bid.

B. Substitutions shall not be made unless there are "equals" listed in the specifications or on the plan.

C. Substitutions may be bid as alternates.

D. Burden of proof that materials are equal shall be upon bidder requesting their use; therefore, bidder shall furnish, with their request for approval all supporting data.

E. Assume responsibility for substituted material and state name of manufacturer, type or brand or equipment and addition to or deduction from base bid.

F. Materials and equipment must meet all requirements as to type, quality, function, appearance and physical dimensions shown.

G. Assume responsibility for any costs to other Sections as a result of the use of alternate materials.

H. Submit supporting data to Engineer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Equipment Submittal Drawings

1. Within 45 days after a notice to proceed and prior to ordering equipment, furnish to the Electrical Engineer submittal drawings for review (see section 26 05 04).
2. Review of any submittal drawings does not waive any condition of the specifications unless specifically noted thereon.
3. No fabrication or ordering of equipment shall be started until reviewed drawings are returned.

3.02 FIELD MEASUREMENTS

A. Job Drawings

1. Maintain, at the job site, one (1) complete set of up-to-date plans and written specifications, complete with all addenda items.
2. This complete plan and specification set shall be reserved for all field markings to show minor revisions and detailed construction notes.
3. These marked plans shall be returned to the Electrical Engineer prior to contract completion and final payment.
4. Assist the Electrical Engineer in transferring applicable field notes to the project drawings for record purposes.

3.03 DELIVERY, STORAGE AND HANDLING

A. Material on Site and Storage

1. Maintain proper care and storage of material and equipment on site.

2. Any material damaged by rust corrosion, warping, breakage, finish damage, etc. shall be replaced by the Contractor to the satisfaction of the Engineer.

3.04 INSTALLATION

A. Field Change Orders

1. No revisions to the contract price shall be allowed unless such revisions have been authorized in writing by both Owner and the change order submitter.

2. All work completed prior to completion of a written contract change order will not be compensated for by the Owner.

3. Any work item that is proposed to perform, on the basis of a proposed contract adder, must be announced in advance such that time is available for the Engineer and Owner to determine if a change in contract price is allowable.

B. Change Orders

1. Change orders may be requested as a part of this project.
2. Assume the following in regards to change orders:

a. Work and equipment associated with change orders shall be installed per the specified equipment on this project.

b. All change orders shall be accounted for on as-built drawings.

c. Change order additions to special systems where riser diagrams have been furnished, shall be included as a part of the riser diagram.

d. A break down of all costs associated with the change order is required.

e. The cost breakdown shall be as follows:

1) Itemized list of all materials.

2) Materials shall be priced at Best Column in a national pricing service book.

3) Cost for subcontractor services.

4) Subcontractor services shall be shown as actual costs from subcontractor.
5) Material mark-up.

6) Maximum allowed is 8%.

7) Number of hours of labor at standard charge out rate.
8) Tax on material.

9) Total change order cost.

3. If equipment or materials are deducted as a part of this change order, credit shall also be shown on change order.

C. Installation: General

1. Use of Existing Electrical Services.

a. When available, existing electrical services shall be made available for temporary construction electrical power.

b. All connections to an existing service shall be completed in accordance with all code requirements, and such connections shall not limit or interfere with the operation of the existing plant facilities.

2. Connections to Equipment Furnished by Others.

a. Included in Section 26 are electrical connections to equipment provided by others.

b. Refer to final shop drawings for equipment provided by other Sections for exact location of electrical outlets and the connections required.

c. Provide energization to the equipment furnished by other Sections only at the request of the providing party.

d. Assume that once the equipment has been started up, that it shall be shut off unless it is requested that it be left on by the providing party.

e. Only start up and turn on equipment if requested so by the party providing said equipment.

f. If required, power shall not be activated to the equipment until qualified starting personnel are on site.

g. After making a permanent power connection, the breaker shall be left in an off position and a "hold" tag or some other device be utilized to keep the power turned off to the equipment.

3. Relocating of equipment.

a. Assume responsibility for relocating of all electrical equipment as shown on the drawings.

b. As a part of this relocation, be responsible to:

1) Determine the extent of the electrical work for the existing installation.

2) Disconnect existing electrical equipment and remove all unused equipment from

existing area.

3) Install new conduit from existing controls to new equipment.

c. Extend all wiring:

1) Assume responsibility for installing new wire from control panel point to

equipment.

2) Do not splice cables.

d. Visit the site prior to bid and bring any specific relocation of equipment questions to the attention of the Owner and Electrical Engineer prior to bidding.

4. Assume responsibility for all requirements pertaining to this relocation.

5. Equipment Access & Location.

a. All equipment, junction and pull boxes, and accessories shall be installed to permit access to equipment for maintenance.

b. Any relocation of conduits, equipment, or accessories required to provide maintenance access shall be accomplished at no additional cost.

c. Equipment shall be installed with ample space allowed for removal, repair or changes to the equipment.

d. Ready accessibility to equipment and wiring shall be provided without moving other equipment which is to be installed or which is already in place.

e. Locate electrical outlets and equipment to fit the details, panels, decorating or finish at the space.

f. The Engineer shall reserve the right to make minor position changes up to 10' of the outlets before the work has been installed.

g. Verify door swings before installing room lighting switch boxes and install boxes on the latch side of door unless noted otherwise.

h. Furnish information as to exact location and size of sleeves for openings for new construction.

i. Provide and set in place all required sleeves, inserts, forms, etc. and coordinate this work with all other Sections of work.

6. Cutting and patching.

a. Beams or columns shall not be pierced without permission of the Engineer and then only as directed.

b. If any openings are required through walls or floors where no sleeve has been provided, the hole for the sleeve shall be core drilled to avoid all unnecessary damage and structural weakening.

c. Provide all cutting and patching required for complete installation of systems unless specifically noted elsewhere.

d. All new or existing work cut or damaged shall be patched and restored to its original condition.

e. Coordinate the location of sleeves, openings, chases, furred spaces, etc.

f. Provide during the progress of construction all sleeves, hangers and inserts that are to be built into the structure.

g. Provide sleeves for cables passing through masonry, concrete or other similar construction.

h. Sleeves shall be of metal conduit and shall extend completely through the construction.

i. Conduits or cables penetrating smoke or fire barriers must not destroy the barrier's integrity.

j. Grout openings between sleeves and concrete or masonry walls and floors.

k. Pack annular space between sleeves and conduits with fiberglass.

l. Where penetrations occur through fire rated walls or floors, fill space with fire resistive caulk.

m. Wherever cables must pass through fire or smoke rated walls or floors, provide approved, sleeved, foam filled fire stops around cables as manufactured by O.Z., Dow, Square D, or equal.

n. Provide all materials required for patching unless otherwise noted.

o. Where alterations disturb lawns, paving, walks, etc., the surfaces shall be repaired, refinished and left in the condition existing prior to commencement of work.

7. Excavation and backfill.

a. Backfilling of all trenches beneath concrete floor and stair slabs within building shall be accomplished with gravel fill and shall be specially compacted to same density as surrounding area.

b. Lines passing under foundation walls shall have a minimum of 1 1/2 inch clearance.

c. Care shall be taken to insure no disturbance of bearing soil under foundations.

8. Floor mounted equipment.

a. Provide "housekeeping" pads for all floor mounted equipment to be installed, specifically switchboard, generator and transformers.

b. In general, a housekeeping pad shall consist of a concrete base 4" in height extending 3" beyond perimeter of equipment.

c Do not use the base dimensions shown on the drawings.

d. Base dimensions depend upon final approved equipment shop drawings.

9. Exterior base mounted equipment.

a. Provide concrete pads for all exterior base mounted equipment.

b. In general, this pad shall be an 8" concrete pad extending a minimum of 4" beyond the perimeter of the equipment mounted onto that base.

c. Provide #4 reinforcement rods 12" on center in each direction.

d. Concrete shall be finished smooth and shall be set at an elevation as determined by Engineer.

e. Provide minimum 12" engineered fill under base.

10. Attachments and supports.

a. Be responsible for proper fittings and support for each item of equipment and materials installed under Section 26.

b. Be responsible for the proper application, installation and location of all necessary and required inserts, supports and anchor bolts.

c. Where same are to be installed by other Sections of work, supply same to the contractor in whose work they occur with instructions for placement and proper installation.

d. Establish the method and nature and select accessories necessary for proper support appropriate to item and point of attachment with due consideration given to ambient/environmental conditions and service duty.

e. Attachments, supporting devices and accessories shall be specifically designed for the application, suitable for the duty imposed in service and acceptable to the Engineer.

f. Attachments shall be made to structural components of the structure in such manner not to jeopardize the integrity of the structure and otherwise consistent with trade practices.

g. Generally, anchors shall be concrete insert type in poured concrete and drilled expansion type in precast concrete.

h. Powder actuated anchors shall not be used in concrete work.

i. Provide all mounting backboards as required to mount electrical and electronic equipment.

j. That equipment which is normally assumed to be mounted on some type of a backboard shall be mounted on backboards provided by Section 26.

k. All mounting backboards used by the contractor shall be 3/4" AC grade marine duty plywood.

l. All plywood shall be painted on both sides and edges with two coats of fire resistant white enamel paint.

m. Provide back mounting panels to meet this specification.

n. Steel channel interior to be painted or galvanized.

o. Exterior conduit mounting channel shall be stainless steel.

p. All sleeves to be furnished and installed by Section 26.

D. Installation: Electrical Service

1. Provide a new single phase, three wire electric service as shown on the contract drawings. The ELECTRICAL CONTRACTOR shall consult with the utility and provide metering equipment, transformer pad and conduit rough-in as required by the utility.

E. Installation: Temporary Electric Distribution

1. Provide 2, 120/240, 200 amp, single phase temporary electric services. All power consumption costs will be paid for by: Owner.
2. Assume that the electrical services are to be distributed in locations throughout the building site.
3. Be responsible for all costs associated with installing electric service, removing the electric service and temporary power distribution. The electric service shall be taken out in the Section 26 contractors name.
4. Temporary power requirements other than those specified, shall be furnished by the Section of work requiring the same.
5. Temporary services shall be furnished as follows 1 for building, 1 for job trailers.
6. Be responsible for all costs associated with installing the electrical service and removing the electrical service and temporary power distribution after permanent power has been installed in the facility.
7. All power consumption costs for the temporary service will be paid by the Owner.
8. Temporary power requirements other than the specified, shall be furnished by the Section of work requiring the same.
9. Install temporary electric distribution per general requirements, section GR-1.
10. Installation of the temporary power and lighting system is to begin upon notification by the Engineer and shall be installed and routed in manner acceptable to the Engineer and the various trades so as not to interfere with construction of the project.
11. The temporary power and lighting system should be adequate for the construction of this project and in accord with OSHA Requirements for Construction Projects.
12. Provide a minimum of 20 foot candles of lighting in work areas for construction.
13. The temporary light and power system shall include fused main disconnect switch, panelboards, branch circuits, outlets, lamps and the maintenance thereof.
14. Temporary lights shall be equipped with heavy duty electric cords and guards.
15. Temporary lights must not be suspended by the power supply cord unless it is designed for this use.
16. Furnish 2 general purpose, 20 ampere, 120 volt, single phase, grounding type receptacle outlets for every 1000 square feet of floor space.
17. The maximum length of a 20 ampere, 120 volt lighting or power circuit shall not be greater than 200' from panelboard to farthest outlet.
18. All single phase receptacle outlet circuits shall have approved ground fault circuit interrupter

    protection or other OSHA approved protection systems.
19. Electric Utility Temporary Service fees shall be included in bid.
20. Temporary power requirements, other than the specified, shall be furnished by the Section of work requiring the same.

F. Installation: Trial Usage of Electrical Systems

1. The Electrical Engineer has the privilege of the trial usage of electrical systems or parts thereof for the purpose of testing under load the new

installation and learning the operational procedures. 2. The trial usage shall be continued for a length of time as deemed reasonable by the Electrical Engineer and all related costs shall be included in the bid, with the exception of the electrical power cost which will be paid by the Owner.

3. The operations shall be carried out only with the express knowledge and under supervision of the responsible sub-trade who shall not waive any responsibility because of trial usage.

4. While trial usage will be kept to a minimum, it shall not be construed as acceptance by the Electrical Engineer.

G. Installation: Cooperation/Coordination

1. Coordinate and cooperate with other Sections of work and Owner by scheduling and installing work to facilitate the construction progresses and the Owners use of the building.

2. Any deviation from contract plans shall be approved by the Electrical Engineer before proceeding.

3. Study the plans of other trade Sections of work and to fit work into the work of others in a coordinated manner.

4. Lay out work and be responsible for measurements.

5. Check facilities provided by others which require electrical connections and provide outlets suitably located for them.

6. Take such measurements as may be necessary to assure approved fitting and proper installation of his work and all other work depending thereon.

7. Cooperate with other contractors to avoid complications between the installation of electrical equipment and equipment installed by others.

H. Installation: Finish and Painting

1. Equipment and materials such as transformers, panels and switches, shall be furnished with the manufacturer's standard finishes, consisting of a prime coat and baked enamel finish coat, unless otherwise noted.

2. Roof mounted equipment and other exterior materials including support hardware shall have a factory or field applied prime coat and finish coat of color selected by the Owner's Representative.

3. In general painting will be done by other trades. Assume responsibility to coordinate work with the painters so that all equipment is installed prior to painting.

4. Assume responsibility for additional expense required to paint support channels, panel trims, flush junction box covers, fixture hangers and other electrical devices not in place prior to normal routine painting.

5. An undamaged finish is required on all equipment.

6. If finish becomes rusted, corroded, scratched, or flaked during storage or installation, be responsible for refinishing the equipment to the satisfaction of the Engineer.

7. Finish painting on the job site is not required by the electrical contractor, except where noted.

8. Refer to other areas of this Section 26 for painting of equipment furnished by the Section 26.

9. Where painting is required to be done by the electrical contractor, the painting shall be done in accordance with the painting portion of the general specification.

I. Installation: Damage to Other Work

1. Assume responsibility for all damages resulting from the execution of work under Section 26 05 00.

2. Assume responsibility to adequately protect Section 26 work at all times.

3. All damages resulting from their operations shall be repaired, or the damaged portions replaced by the party originally performing the work (to the entire satisfaction of the Engineer), and all cost thereof shall be borne by those responsible for the damage.

J. Installation: Clean-Up

1. At all times, keep the premises free from excessive accumulation of waste materials or rubbish resulting from work, including tools, scaffolding, and surplus materials and leave work room or it's equivalent, clean.

2. In case of dispute, the Engineer may order the removal of such rubbish and charge the cost to the responsible Section of work as determined by the Engineer.

3. At the time of final clean-up, all fixtures and equipment shall be thoroughly cleaned and left in proper conditions for their intended use.

K. Installation: Drawing Schedules and Details

1. The electrical drawings include a number of standard and job specific details.

2. These details may or may not be specifically referenced on the drawings and in the specification.

3. Assume that even if the detail is not specifically referenced, that it shall apply to this project. (As an example, if a detail is shown for the exterior mounted receptacles, but the detail is not referenced from the plan sheets, the contractor shall assume that all exterior mounted receptacles shall be installed per the detail.)

4. Details and schedules are shown as a means to aid the electrical contractor and are not meant to be all inclusive of all devices.

5. Assume responsibility for making takeoff of equipment required, (i.e., additional circuit breakers, motor connections, etc.) and ancillary equipment and appurtenances for a complete connection or circuit.

6. Verify all sizes of electrical equipment with shop drawings and nameplate rating of the equipment it serves.

L. Installation: Coordination Drawings

1. Prepare coordination drawings to a scale of ¼" = 1'0 or larger; detailing major elements, components, and systems of electrical equipment and materials in relationship with other systems, installations, and building components.

2. Indicate locations where space is limited for installation and access and where sequencing and coordination of installations are of importance to the efficient flow of the work, including, (but not limited to) the following:

3. Indicate the proposed locations of major raceway systems, equipment, and materials. Include the following:

   a. Clearances for servicing equipment, including space for equipment disassembly required for periodic maintenance.

   b. Exterior wall and foundation penetrations.

   c. Fire-rated wall and floor penetrations.
   d. Equipment connections and support details.
   e. Sizes and location of required concrete pads and bases.

4. Prepare floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.

5. Locations include, but are not limited to, electrical rooms and other specialty electrical and communication rooms where equipment is being provided.

M. Installation: Bid Drawings

1. It must be understood that electrical drawings and details bid drawings are diagrammatic.
2. Electrical drawings and details bid drawings are not intended to be shop drawings.
3. It is expected that it may be necessary to move conduit, outlets and/or equipment in some cases to get coordinated installation and such changes are considered a part of the Contract obligation without cost to the Owner.
4. No outlets or equipment shall be located where the usefulness and/or operation will be affected by the work of other trades, door swing, counter, equipment, etc.

N. Installation: Contract Termination Requirements

1. Furnish Owner with service manuals for all items furnished under this Contract.
2. Service manuals shall be complete with drawings, diagrams, operations and installation instructions and parts lists.

3.05 OWNER TRAINING

A. Provide as outlined in each specification section requiring owner training.

3.06 SPARE EQUIPMENT

A. Provide as outlined per section 26 05 04.

END OF SECTION

SECTION 26 05 01
PROJECT SPECIAL CONDITIONS

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. This specification covers those conditions that are particular to this project. This section further explains and outlines other portions of these specifications.

PART 2 PRODUCTS

2.01 UTILITIES

A. Electrical Utilities

1. Electrical Services Utility costs shall be included in Electrical Contractor bid.

2. Temporary Electric Service

a. Installed by Electrical Contractor

b. Temporary Electric Service Utility Fee – paid for by Electrical Contractor

2.02 EQUIPMENT FURNISHED BY OWNER FOR SECTION 26 INSTALLATION

A. Be responsible for installation of all equipment that is being furnished directly by the Owner.

Include costs in bid to move the equipment from the owner's storage to the project site, unpack the equipment, inspect the equipment for damage and call to the Owners attention any problems, dispose of packaging materials, and provide all connection and adjustment.

2.03 OVERHEAD DOOR OPERATORS

A. The overhead door operators are furnished by other contractors. Section 26 is to provide the wiring to

the door and the control. Work shall consist of the following:

1. Verify voltage and phase with door supplier prior to any rough-in.

2. Determine type of connection to overhead doors. Provide receptacle plug-in if applicable.

3 Provide disconnect at door operator.

4. Wire pushbutton operators. The electrical contractor shall assume that he is to provide conduit and wire from each of the pushbuttons to the door operator.

5. Wire door limit switches and pressure bar.

2.04 LOW VOLTAGE SYSTEM CABLE SLEEVES

A. Provide low voltage system cable sleeves throughout the building. Provide sleeves as follows:

1. All sleeves are to be steel and are to have insulated connectors on the end, or other type of cable protection.

2. Sleeves are to extend a minimum of 6" out from the wall.

3. A 1" sleeve shall be placed above the ceiling, through the wall, between all offices and corridors, and classrooms and corridors, or other areas where cables are to be routed. When there is more than one floor provide vertical (minimum 3-2") between floors.

4. In area where there is no finished ceiling, a conduit shall be extended from the communications outlet box, directly into an accessible ceiling area.

5. Cable shall be installed in conduit in all mechanical rooms, penthouses, gymnasiums, and any other open-structure rooms.

6. In addition to these sleeves, also provide the sleeves that are shown on the floor plans.

7. All low voltage devices in walls, including fire alarm devices, must have conduit stubbed from box in wall to above accessible ceiling.

2.05 UTILITIES COORDINATION

A. Be responsible for utility coordination (electrical) on behalf of the owner. Contact the Owner to determine requirements, and from that, organize a meeting with the various system serving utilities such that the raceway stub-outs and installation of service can be done to coordinate with building construction.

2.06 MULTI-POLE CIRCUITS

A. Multi-pole circuits are not allowed for single-phase line to neutral loads.

PART 3 EXECUTION

3.01 ALLOWANCES

A. For all equipment and labor allowances, assume the following:

1. All handling costs, profit margin, overhead, and taxes are assumed to be included in the contract, and thus the allowance cost is the actual contractor cost. If the allowance amount indicated is more than the actual cost, deduct this cost from the allowance amount, and the balance shall be deducted from the electrical contract by change order. In similar fashion, any costs above that shown on the allowance, shall be reimbursed to the contractor at his cost and will be added to the contract by change order.

2. For those items which require material and labor, the material and labor will be priced per the change order method listed in specification section 26 05 00.

3. The utility allowance is to cover cost assessed by the various utilities to provide permanent service to the facility. This service fee should cover the amount of the utility invoice only. It is not meant to cover:

   a. Temporary service fees (unless stated otherwise).

   b. Energy usage.

   c. Project electrical contractor materials or labor.

4. For those allowances for utility fees, the electrical contract will be adjusted up or down by change order by the amount listed for the change order, less the actual cost of the utility fee. No additional compensation for mark-ups or handling will be allowed by the contractor. Any such costs for this shall be included in the bid.

B. The following allowances shall be included in the contract:

1. Electric utility fee $5,000

C. For all allowances listed, assume that all handling costs, taxes and installation are in addition to the allowance shown. The allowance amount shown is the invoice amount from the equipment supplier or subcontractor.

END OF SECTION

SECTION 26 05 04
DOCUMENTATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplemental conditions and Section

01 specification sections, apply to work of this section.

1.02 SYSTEM PRE-INSTALLATION INFORMATION

A. Provide system pre-installation information for all equipment indicated on the Project Documentation Submittal List. Information shall include:
1. System wiring diagrams:

a. System wiring diagrams for the systems listed below shall be provided as a complete riser diagram. This riser diagram shall include all components of the system, as well as a designation adjacent to each component indicating the room or space in which it is located. Cable type used shall also be identified. This designation shall be by description of space or by room number.

1) Spec section 27 10 00 – structured cabling system.
2) Spec section 28 23 00 – security camera system.

2. Diagram format:

a. All riser diagrams shall be done in the following manner:

1) CAD drawings.

2) All symbols used shall be the same symbols that are used on the electrical contract documents.

b. Each component of the built-up system must have the following information provided:

1) Each component must be indicated on a riser diagram and shown how it interconnects to other parts of the system.

2) Provide front elevation of rack or enclosure for system.

3) Size of enclosure shall be indicated.

4) Spacing or special mounting requirements shall be indicated.

5) Signal candela level.

DATA CABLE LISTINGPROJECT_____

LISTED BY PATCH PANEL JACK

Rack Location	Rack Number	Patchpanel Number	Patchpanel Jack Number	Cable Number	Room Number	Room Jack Number

DATE MADE_____

PAGE _____ OF _____

B. System installation information shall be updated to reflect the installed system. This updated information shall be included as a part of the final O&M manual.

C. Drawings shall be supplied for each existing building system that is revised or added to. The drawings do not have to show all existing building equipment, only those items where the new system is extended from. A brief description should be given of the existing system and how it was extended.

D. Record drawings shall be reduced to 11" X 17" or 8 1/2" x 11" and included with the equipment drawings in the final O&M manual. See O&M MANUAL Description in this specification section.

1.03 FINAL TESTS AND DEMONSTRATIONS

A. Test all work and all equipment installed to ensure its proper and safe operation. Check all interlocking and automatic control sequences and test the operation of all safety and protective devices. Rectify all defects. Coordinate this work with the Power Company, supplier's representative and all other persons as directed by the OWNER or his representatives, in order to achieve the proper and intended operation of all equipment.

B. Test, adjust and record operating voltages at each system level before energizing branch circuits. Transformer taps must be adjusted to obtain as near as possible nominal system voltage. Where transformer is under Utility jurisdiction, obtain services of Utility to correct voltage.Be responsible for replacement of all devices and equipment damaged due to failure to comply with this requirement.

C. Balance load among feeder conductors at each panelboard and reconnect loads as may be necessary to obtain a reasonable balance of load on each phase. Electrical unbalance shall not exceed 10%.

D. Provide all instruments and equipment necessary to perform required tests.

E. All checks and tests shall be permanently recorded and made available to the OWNER or his representatives. The tests shall include:

1. System grounding
2. Fuses:
    a. Equipment nameplate requirement
    b. Actual fuse rating
3. Breakers:
    a. Nameplate
    b. Actual rating
4. Motors:
    a. Complete nameplate data
    b. Overload relay element
    c. Voltage and current phase readings
    d. Direction of rotation
5. Ampere readings on any cable operating in parallel to insure an even division of current.

F. The above reading shall be made for all fuses, breakers, motors and parallel cables installed as part of this contract and connected to by Section 26. This testing shall be for all new equipment, whether furnished by the electrical contractor or not.

G. Upon request, demonstrate proper operation of all electrical systems and equipment in the presence of the Engineer and/or other designated persons.

1.04 PROJECT CLOSEOUT CHECKLIST

A. Submit the following:

ITEM	SUPPLIED TO:	CHECK OFF
Spare Lamps (SPEC 26 51 13)	OWNER	_____
Spare Fixture Ballasts (SPEC 26 51 13)	OWNER	_____
Accounting of all cash allowances as detailed in spec section 26 05 01. Submit invoices from utilities.	ENGINEER	_____
Spare Fuses	OWNER	_____
Lighting Fixture Information Database (SPEC 26 51 13)	ENGINEER	_____
Structured Wiring Documentation (SPEC 27 10 00)	ENGINEER	_____
Structured Wiring Tabulations (SPEC 27 10 00)	ENGINEER	_____
Structured Wiring Reduced Floorplans (SPEC 27 10 00)	ENGINEER	_____
Data Cable Installation Warranty (SPEC 27 10 00)	ENGINEER	_____
Letter stating all specified spare equipment was delivered to owner. The letter should list the equipment supplied.	ENGINEER	_____
O&M Manual	ENGINEER	_____

Certificate from systems suppliers stating that the system was started up, tested and Owner's instructions were given. Certificate shall have date of instructions and test and shall have the owner's representative's signature.	ENGINEER	_____
Copy of marked up record drawing.	ENGINEER	_____
Provide warranty for all equipment	ENGINEER	_____

END OF SECTION

SECTION 26 05 05

THROUGH-PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Special Provision “General Requirements for Building Construction – Section 01 Specification Sections, apply to this Section.

1.02 APPLICABLE PUBLICATIONS

A. Fire Test Requirements

1. ASTM E-814, “Fire Tests of Through Penetration Fire Stops”.
2. ANSI/ UL1479, “Fire Tests of Through Penetration Fire Stops”
3. ASTM E-119, “Fire Tests of Building Construction and Materials”.
4. ANSI/ UL263, “Fire Tests of Building Construction and Materials”.
5. ASTM E-84, “Surface Burning Characteristics of Building Materials”.
6. ANSI/ UL723, “Surface Burning Characteristics of Building Materials”.

B. References

1. Underwriters Laboratories (UL) of Northbrook, IL “Fire Resistance Directory”.
   a. Through Penetration Firestop Systems (XHEZ)
   b. Fill, Void or Cavity Materials (XHHW)
   c. Firestop Devices (XHJI)
   d. Forming Materials (XHKU)
2. All major building codes:
   a. Uniform Building Code published by ICBO
   b. Standard Building Code published by SBCCI.
   c. National Building Code published by BOCA.
   d. International Building Code published by ICC.
3. National Fire Protection Association (NFPA) of Quincy, MA “NFPA 101: Life Safety Code”.
4. National Fire Protection Association (NFPA) of Quincy, MA “NFPA 70: National Electrical Code”.

1.03 DESCRIPTION OF WORK

A. Furnish and install a complete firestopping installation as specified herein.

B. This section includes through-penetration firestop systems for electrical equipment and penetrations through the following fire-resistance rated assemblies, including both blank openings and openings containing penetrating items such as conduits, cabling, cable trays and bus duct:

1. Floor-ceiling assemblies.
2. Roof-ceiling assemblies.
3. Walls and partitions.
4. Smoke barriers.
5. Construction enclosing compartmentalized areas.

1.04 RELATED WORK ELSEWHERE

A. Section 03 – Concrete

B. Section 04 – Masonry Work

C. Section 09 – Finishes

D. Section 13 – Special construction

E. Section 23 – Heating, Ventilation and Air Conditioning

F. Section 26, 27, and 28 – Electrical

1.05 SHOP DRAWINGS

A. Product Data: For each type of through-penetration firestop system product indicated.

B. System Drawings: Submit documentation from a qualified third-party testing agency that is applicable to each through-penetration firestop system configuration for construction and penetrating items.

C. Product Certificates: Certificate of conformance signed by manufacturers of through-penetration firestop system products certifying that products comply with requirements.

1.06 OPERATION & MAINTENANCE MANUALS (NONE)

1.07 QUALITY ASSURANCE

A. Provide through-penetration firestop systems that comply with the following requirements :

1. Firestopping tests are performed by a qualified, testing and inspection agency. A qualified testing and inspection agency is UL, or another agency performing testing and follow-up inspection services for firestop systems acceptable to authorities having jurisdiction.

2. Through-penetration firestop system products bear classification marking of qualified testing and inspection agency.

3. Engage an experienced installer who is certified, licensed or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install firestop products per specified requirements. A manufacturer's willingness to sell its through-penetration firestop system products to Contractor or to an installer engaged by Contractor does not in itself confer qualifications on buyer.

B. Obtain through-penetration firestop systems for each type of penetration and construction condition indicated from a single manufacturer.

C. Through-penetration firestop systems shall be subjected to necessary inspections and tests.

D. Keep areas of work accessible until inspection by authorities having jurisdiction.

E. Where deficiencies are found, repair or replace through-penetration firestop systems so they comply with requirements.

1.08 WARRANTY

A. Equipment shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 FIRESTOPPING, GENERAL

A. Provide through-penetration firestop systems that are compatible with one another, with the substrates forming openings, and with the items, if any, penetrating through-penetration firestop systems, under conditions of service and application, as demonstrated by through-penetration firestop system manufacturer based on testing and field experience.

B. Provide components for each through-penetration firestop system that are needed to install fill materials. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire-resistance-rated systems.

C. Performance Requirements

1. Provide products that upon curing do not re-emulsify, dissolve, leach, breakdown or otherwise deteriorate over time from exposure to atmospheric moisture, sweating pipes, ponding water or other forms of moisture characteristic during and after construction.

2. Openings within walls and floors designed to accommodate cabling systems subjected to frequent cable changes shall be provided with re-enterable products specifically designed for retrofit.

2.02 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with through-penetration firestop systems (XHEZ) listed in Volume 2 of the UL Fire Resistance Directory, provide products of the following manufacturers as identified below:

1. Manufacturers listed in the UL Fire Resistance Directory – Volume 2.

2.03 MATERIALS

A. General: Use only through-penetration firestop system products that have been tested for specific fire- resistance-rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.

B. Latex Sealants: Single component latex formulations that upon cure do not re-emulsify during exposure to moisture.

C. Firestop Devices: Factory-assembled steel collars lined with intumescent material sized to fit specific outside diameter of penetrating item.

D. Firestop Putty: Intumescent, non-hardening, water resistant putties containing no solvents, inorganic fibers or silicone compounds.

E. Firestop Putty Pads: Intumescent, non-hardening putty pads to be installed on metallic and nonmetallic electrical switch and receptacle boxes to reduce horizontal separation between boxes to less than 24”.

F. Wrap Strips: Single component intumescent elastomeric strips faced on both sides with a plastic film.

G. Firestop Pillows: Re-enterable, non-curing, mineral fiber core encapsulated with an intumescent coating contained in a flame retardant poly bag.

H. Mortar: Portland cement based dry-mix product formulated for mixing with water at Project site to form a non-shrinking, water-resistant, homogenous mortar.

I. Silicone Sealants: Moisture curing, single component, silicone elastomeric sealant for horizontal surfaces (pourable or nonsag) or vertical surface (nonsag).

J. Silicone Foam: Multicomponent, silicone-based liquid elastomers, that when mixed, expand and cure in place to produce a flexible, non-shrinking foam.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

B. Do not proceed until unsatisfactory conditions have been corrected.

3.02 FIELD MEASUREMENTS

A. Verify that field measurements are as shown on Drawings.

3.03 DELIVERY STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

B. Accept equipment on site. Inspect for damage.

C. Protect equipment from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

D. Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturer's labels identifying product and manufacturer, date of manufacture; lot number; shelf life, if applicable; qualified testing and inspection agency's classification marking; and mixing instructions for multicomponent materials.

E. Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants or other causes.

3.04 INSTALLATION

A. General Requirements: Install through-penetration firestop systems in accordance with "Performance Criteria" Article and in accordance with the conditions of testing and classification as specified in the published design.

B. Manufacturer's Instructions: Comply with manufacturer's instructions for installation of through-penetration firestop systems products.

1. Seal all openings or voids made by penetrations to ensure an air and water resistant seal.

2. Protect materials from damage on surfaces subjected to traffic.

C. Remove equipment, materials and debris, leaving area in undamaged, clean condition.

D. Clean all surfaces adjacent to sealed openings to be free of excess through-penetration firestop system materials and soiling as work progresses.

E. Project conditions

1. Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limitations recommended by manufacturer.

2. Do not install through-penetration firestop systems when substrates are wet due to rain, frost, condensation, or other causes.

3. Do not use materials that contain flammable solvents.

4. Do not install water-based or products that are conductive when wet in contact with energized electrical conductors. Exercise care when energizing penetrants.

F. Coordination

1. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.

2. Coordinate sizing of sleeves, openings, core-drilled holes or cut openings to accommodate through-penetration firestop systems.

3. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

G. Preparation

1. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, scale, laitance, rust, release agents, water repellents, and any other substances that may inhibit optimum adhesion.

2. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.

3. Do not proceed until unsatisfactory conditions have been corrected.

END OF SECTION

SECTION 26 05 19
WIRE AND CABLE

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. American National Standards Institute/National Fire Protection Agency (ANSI/NFPA), Specifications and Standards, current edition:

1. NFPA 70 – National Electrical Code.

2. ANSI/TIA/EIA-568-B.2.

B. National Electrical Contractors Association (NECA), Standard of Installation, current edition.

C. National Electrical Manufacturers Association (NEMA), Specifications and Standards, current edition.

D. Underwriters Laboratories, Inc. (UL).

1.03 DESCRIPTION OF WORK

A. Furnish and install a complete and operable wire and cable system as indicated on the drawings and as specified herein.

1.04 RELATED WORK ELSEWHERE

A. Section 11: Equipment

B. Section 23: Heating, Ventilation and Air Conditioning

C. Section 26, 27, and 28: Electrical

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04.

B. The following information shall be submitted in addition to the items listed above:

1. Manufacturer literature in scope to demonstrate compliance with the requirements of this specification.

2. Clearly identify the types of wire and cable proposed.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. Wire and cable manufacturers shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development and production in accordance with ISO 9001.

C. All materials, equipment, and parts shall be new and unused of current manufacture.

D. Provide all necessary accessories required for a complete and operable system.

1.08 WARRANTY

A. Wire and cable shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 GENERAL

A. Approved manufacturer:

1. Contractor's option.

B. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available. All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

2.02 WIRE AND CABLE – GENERAL PURPOSE (600V)

A. General:

1. All conductors shall be copper.

2. THWN or THHN general purpose building wire insulated with polyvinyl chloride (PVC) and covered with protective sheath of nylon intended for lighting and power circuits at 600 volts or less, in residential, commercial, and industrial buildings.

3. The wire shall be suitable for 90ºC maximum continuous conductor temperature in dry locations and 75ºC in wet locations and listed by Underwriters Laboratories for use in accordance with Article 310 of the National Electrical Code.

B. Conductors:

1. Class B or Class C stranded, annealed uncoated copper per UL Standard 83 or 1063.

C. Insulation:

1. Each conductor shall be insulated with PVC and sheathed with nylon complying with the requirements of UL Standard 83 for Types THHN or THWN and UL Standard 1063 for Type MTW and CSA C22.2 No. 75 for T90 Nylon.

2. Types THWN or THHN shall comply with the optional Gasoline and Oil Resistance rating of UL Standard 83. The insulation shall also comply with UL requirements for 105ºC Appliance Wiring Material.

3. The average thickness of PVC insulation, for a given conductor size, shall be as specified in UL Standard 83 for TWHN or THHN. The minimum thickness at any point, of the PVC insulation, shall be not less than 90 percent of the specified average thickness.

4. The minimum thickness at any point of the nylon sheath shall be as specified in UL Standard 83 for Types THWN or THHN.

5. The PVC insulation shall be applied tightly to the conductor and shall be free-stripping.

D. Identification:

1. The wire shall be identified by surface marking indicating manufacturer's identification, conductor size and metal, voltage rating, UL Symbol, type designations, and optional ratings. The wire shall also be identified as C (UL) Type T90 Nylon or TWN 75, FT1.

E. Tests:

1. Wire shall be tested in accordance with the requirements of UL Standard 83 for Types THWN or THHN wire and for the optional Gasoline and Oil Resistance listing; as Type MTW to UL Standard 1063 (stranded items): as AWM to UL Standard 758 (stranded items); and as C(UL) Type T90 Nylon or TWN75.

F. Usage:

1. General use power wiring, minimum size No. 12 AWG.

2. General use control wiring, minimum size No. 14 AWG.

2.03 WIRE AND CABLE – UNDERGROUND (600V)

A. General:

1. USE-2. XHHW-2, or RHH, cross linked polyethylene insulated cables for use in circuits not exceeding 600 volts. Cables listed by UL as Type USE-2 and recognized for underground use in wet locations at a maximum continuous conductor temperature of 90ºC in accordance with Article 338 of the National Electric Code.

2. UL listed as Type RHH or RHW-2 for general purpose wiring applications at maximum continuous conductor temperature of 90ºC in dry locations (RHH) or 90ºC in wet or dry locations (RHW-2).

3. Installed in air, conduit, or other recognized raceways in accordance with Article 310 of the National Electric Code.

B. Conductors:

1. Conductors shall be Class B stranded annealed uncoated copper per UL Standard 854 and 44.

2. A suitable separator over the conductor may be used at the option of the manufacturer.

C. Insulation:

1. Each conductor shall be insulated by surface marking indicating manufacturer's identification, conductor size and metal, voltage rating, UL Symbol, and type designations.

D. Tests:

1. Wire shall be tested in accordance with the requirements of UL Standard 8654 for Type USE-2, UL Standard 44 for Types RHW-2 or RHH.

E. Usage:

1. Underground power wiring, minimum size No. 12 AWG.

2.04 PORTABLE CORD GENERAL USE

A. All portable general use cords shall be SO type.

2.05 WIRING CONNECTORS

A. Polaris Type Mechanical Connectors:

1. 8 AWG and larger wire for all motor connections.

B. Spring Wire Connectors:
1. 10 AWG and smaller wire.

C. Compression Connectors (T&B Sta-Kon or equal):

1. Fire alarm wiring.
2. Control wiring.
3. For those devices that are not rated to accept stranded wire.

D. Cord Connectors. All cord connectors should be Kellums type using wire mesh cord restraint.

E. Provide watertight Crouse-Hinds or equal cord grips in appropriate areas.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that wire is in compliance with specifications.

B. Verify that interior of building has been protected from weather.

C. Verify that mechanical work likely to damage wire and cable has been completed.

D. Inspect wire for physical damage and proper connection.

E. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.

F. Verify continuity of each conductor.

G. Feeder or branch circuits with ampacity greater than 100 amperes shall be tested after installation to measure insulation resistance of each conductor.

1. All equipment shall be disconnected and the wire ends shall be cleaned and dried.
2. Connect Megohmeter between conductor and a grounded point in the enclosure and energize until the reading stabilizes.
3. The Megohmeter reading for each conductor shall not be less than 10,000 Megohoms.

3.02 FIELD MEASUREMENTS

A. Field verify all measurements. Do not base on contract drawings.

B. Identify conflicts with the work of other trades prior to installation of work.

C. Adjust system to satisfy field requirements.

3.03 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

B. Maintain original quality and condition of wire while it is in storage.

3.04 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.

2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.

B. Pre-Installation:

1. Verify that interior of building has been protected from weather.

2. Verify that mechanical work likely to damage wire has been completed.

3. Completely and thoroughly swab raceway prior to installation.

4. Verify that field measurements are as shown on drawings.

5. Wire and cable routing shown on drawings is approximate unless dimensioned. Route wire and cable to satisfy project conditions.

6. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

7. Determine required separation between cable and other work.

8. Determine cable routing to avoid interference with other work.

C. Conductor Sizing:

1. Conductor sizes are based on copper.

2. Use conductor not smaller than No.12 AWG for power and lighting circuits.

3. Use No.10 AWG conductors for 20 ampere, 120-volt branch circuits longer than 75 feet.

4. Use No. 10 AWG conductors for 20 ampere, 277-volt branch circuits longer than 200 feet.

5. Where circuit wiring length exceeds 100 feet, increase wire size as needed to maintain a maximum voltage drop of three percent.

6. Use conductor not smaller than No.14 AWG for control circuits.

7. Wire and cable size shall be increased from size indicated or required by code to meet the following voltage drop requirements:
   a. 3% drop for branch circuits.
   b. 5% drop for motor circuits.

D. Wire Pulling:

1. Pull all conductors into raceway at same time.

2. No.4 AWG and larger wire and power cables shall be lubricated with pulling lubricant to reduce

   pulling tension and abrasion damage. The lubricant shall be water or wax based containing no oils or greases that may adversely affect cable jackets. Follow cable manufacturer's specifications regarding use of lubricant.

3. The minimum bend radius and maximum pulling tension ratings of the wire and cable shall not be exceeded.

E. Splices and Terminations:

1. Splices and terminations shall not be made within raceways.
2. Clean conductor surfaces before splicing or terminating.
3. Make splices, taps, and terminations to carry full amp capacity of conductors with no perceptible temperature rise.
4. Wire nuts, “ScotchLocks”, and similar devices may be used to splice 120V power circuits.
5. Control, communication, and data transmission wire and cable shall not be spliced.
6. Support cables above accessible ceiling, using spring metal clips or plastic cable ties to support cables from structure. Do not rest cable on ceiling panels or support for the ceiling suspension system per NEC.
7. Neatly train and lace wiring inside boxes, equipment, and panelboards.
8. Clean conductor surfaces before installing lugs and connectors.
9. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
10. Use polaris type mechanical connectors for copper conductor splices and taps, 8 AWG and larger. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.
11. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.

F. Motors:

1. Motor wiring to motors less than 10 horsepower shall be spliced and terminated with fully insulated crimp-on end cap with a layer of self-vulcanizing rubber tape, followed by five layers of vinyl electrical tape. “SkotchLocks” and similar devices shall not be used.
2. Motor wiring to motors 10 horsepower or larger shall be spliced and terminated with crimp-on ring terminal lugs, brass nuts, bolts and washers with a layer of self-vulcanizing rubber tape, followed by five layers of vinyl electrical tape. “SkotchLocks” and similar devices shall not be used.

G. Wire Marking:

1. The ends of each conductor shall be marked with circuit number, motor number, wire or terminal number.
2. Labels shall be typed in black lettering with indelible ribbons on a white, heat shrink sleeve. Markers shall be shrunk around the wire to provide a tight, non-slip bond with a compatible heat gun.
3. Heat shrink wire markers shall be Brady Bradysleeve Type B-321 or B-322

H. Color Coding:

1. Color coding shall be as follows: 120/240 System

Phase A	Black
Phase B	Red
Neutral	White
Ground	Green

I. Ground Wire Color Coding

1. Provide green insulated ground wire for #8 and smaller. #6 wire shall have green band per code.

J. Control Panels:

1. Control panel wiring. Wiring within control cabinets shall be stranded type MTW.

END OF SECTION

SECTION 26 05 26
GROUNDING

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 - National Electric Code.

B. Conform to current Underwriters Laboratories (UL) Specifications and Standards.

C. Conform to current Telecommunication Industry Association (TIA/EIA).

D. Conform to National Electrical Contractors Association (NECA) “Standards of Installation”.

E. Product specific standards and requirements are included in product specifications.

F. EIA/TIA-607.

1.03 DESCRIPTION OF WORK

A. Furnish and install a complete and operable grounding and bonding system as indicated on drawings and specified herein.

B. Ground and bond all equipment required per all applicable codes whether or not specifically shown on drawings.

C. Bond together system neutrals, service equipment enclosures, exposed non current carrying metal parts of electrical equipment, metal raceway systems, grounding conductor in raceways and cables, receptacle ground connectors, and plumbing systems.

D. Provide grounding from main electric service to telecommunications ground bus per drawing details. Bond to all metal enclosures and racks.

1.04 RELATED WORK ELSEWHERE

A. Section 26, 27, and 28: Electrical

B. Section 17: Low Voltage System.

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

B. The following information shall be submitted in addition to items listed above:

1. Complete riser diagram indicating copper backbone from main service ground to telecommunications ground bus.

1.06 OPERATION & MAINTENANCE MANUALS (NONE)

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04 [Section 26 05 00].

B. The following shall be submitted in addition to those items listed above:

1. Measure ground resistance from system neutral connection at service entrance to convenient ground reference point using suitable ground testing equipment. Resistance shall not exceed 2 ohms. Additional grounding electrodes shall be used to satisfy ground resistance requirements where required by earth conditions.

2. Measure ground resistance from each telecommunications bus bar to convenient ground reference point using suitable ground test equipment. Resistance shall not exceed 1 ohm. Ground must be installed per drawing details.

1.08 WARRANTY

A. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. Submit a written warranty executed by the installer indicating ground test was completed.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available. All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

B. Provide a complete and fully functional grounding system using materials and equipment of types, sizes, and rating as required to meet performance requirements. Use materials and equipment that comply with referenced standards and manufacturer's standard design and construction, in accordance with published product information. Coordinate the features of all materials and equipment so they form an integrated system, with components and interconnections matched for optimum performance of specified functions. Provide all accessories necessary for a fully functioning system.

2.02 GROUND RODS

A. Material: Copper-clad steel.

B. Diameter: 3/4" minimum.

C. Length: 10' minimum. Rod shall be driven at least 9'5"deep.

D. Use one or more ground rods to obtain the minimum specified ground resistance. This applies to manholes, padmount switches, transformers, service entrances, and all other equipment requiring a supplemental grounding electrode. Minimum of three ground rods shall be used to ground the service entrance as indicated on plans.

2.03 MECHANICAL CONNECTORS

A. The mechanical connector bodies shall be manufactured from high strength, high conductivity cast copper alloy material. Bolts, nuts, washers, and lockwashers shall be made of silicon bronze and supplied as a part of the connector body and shall be of the two bolt type.

B. Split bolt connector types are not allowed.

C. The connectors shall meet or exceed UL 467 and be clearly marked with the catalog number, conductor size and manufacturer.

2.04 COMPRESSION CONNECTORS

A. The compression connectors shall be manufactured from pure wrought copper. The conductivity of this material shall be no less than 99 percent.

B. The connectors shall meet or exceed the performance requirements of IEEE 837, latest revision.

C. The installation of the connectors shall be made with a compression, tool and die system, as recommended by the manufacturer of the connectors.

D. The connectors shall be clearly marked with the manufacturer, catalog number, conductor size, and the required compression tool settings.

E. Each connector shall be factory filled with an oxide-inhibiting compound.

2.05 EXOTHERMIC CONNECTIONS

A. Select the appropriate kit for specific types, sizes, and combinations of conductors and other items to be connected. Field personnel shall be trained in execution of welds.

2.06 WIRE

A. Material: Stranded copper (aluminum permitted only with aluminum conductors).

B. Grounding Electrode Conductor: Size as shown on drawings, specifications, or required by NFPA 70, whichever is larger.

C. Manhole and Vault Bonding: No. 4/0 minimum.

D. Feeder and Branch Circuit Equipment Ground: Size as shown on drawings, in specifications, or as required by NFPA 70, whichever is larger. Differentiate between the normal ground and the isolated ground when both are used on the same facility.

E. 3/0 stranded bare.

2.07 TELECOMMUNICATIONS GROUND BUS BAR

A. Telecommunication Grounding Busbar (TGB)

1. Provide a pre-manufactured ground bus attached to the wall or rack enclosure per drawings.

2. Bus shall be equipped with six connection points for #10 or smaller wire, using set screws to capture the wire. This is in addition to the termination points for the grounding backbone and the jumpers to the telecommunications system.

3. See details for equipment.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

B. Verify proper labeling is provided on all telecommunications bus bars.

3.02 FIELD MEASUREMENTS

A. Field verify exact routing of all backbone cable.

B. Adjust grounding system installation to satisfy field requirements.

3.03 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

3.04 INSTALLATION

A. General:

1. Provide a separate, insulated equipment grounding conductor in all raceways.

2. Connect grounding electrode conductors to metal water pipe:

a. Use a suitable ground clamp.

b. Make connections to flanged piping at street side of flange.

c. Provide bonding jumper around water meter.

3. Supplementary Grounding Electrode:

a. Use driven ground rod on exterior of building.

b. Install ground rod in suitable recessed well; fill with gravel after connection is made.

c. Effectively ground metal frame of the building.

d. Install grounding conductor to footing rebar per NEC.

4. Receptacle grounding:

a. For all receptacle circuits, provide separate green ground wire in raceway system.

b. Receptacles shall be isolated ground type where called for specifically on the drawing in other areas.

c. Standard receptacles may be used and green wire shall be directly connected to receptacle or to pigtail.

d. Provide #12 pigtail to ground all metal boxes.

e. Stranded wire twisted on ground terminal on device is not allowed.

5. Telecommunications grounding bus bar (TGB)

a. Install per riser diagram detail.

b. Provide a pre-manufactured ground bus attached to the enclosure wall.

c. Terminate ground wire on bus.

d. Bond bus to enclosures and cable tray.

B. Ground Rod Installation

1. Install ground rods to be 10’6” deep.

END OF SECTION

SECTION 26 05 29
SUPPORTING DEVICES

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 - National Electric Code.

B. Conform to current American National Standards Institute (ANSI) standards.

C. Conform to current American National Standards Institute ANSI B31.1 standards.

D. Conform to National Electrical Contractors Association (NECA) “Standards of Installation”

1.03 DESCRIPTION OF WORK

A. Furnish and install complete and operable support devices as required.

B. Metal supporting devices shall be zinc galvanized or cadmium plated steel or malleable iron.

C. Equipment and materials shall be supported with devices designed for such purpose. Wire or plastic ty- raps not acceptable.

D. Where so specified on the drawings, provide stainless steel, PVC covered, or hot dipped galvanized.

E. Refer to drawings or other portions of the specifications for particular pieces of equipment which may require more stringent equipment specifications than listed in this specification.

1.04 RELATED WORK ELSEWHERE

A. Section 03: Concrete

B. Section 04: Masonry

C. Section 07: Thermal and Moisture Protection

D. Section 15: Heating, Ventilation and Air Conditioning

E. Section 26, 27, and 28: Electrical

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

1.06 OPERATION & MAINTENANCE MANUALS (NONE)

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts are to be new, undamaged and unused of current Manufacture.

1.08 WARRANTY

A. Equipment shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available.

All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

2.02 LIGHTING FIXTURE SUPPORT

A. Provide items such as stems, hickeys, bar hangers, and clips required to securely attach fixtures to ceilings or walls.

B. Provide troffer arms for supports, lay-in troffers for exposed grid ceiling and grid troffer support clips in accordance with NEC and manufacturer's recommendations.

C. Provide and install channel supports across main grid runners or grid supports, securely tied down or anchored for fixtures and devices mounted in suspended ceiling systems not causing tile to sag and so fixture or device cannot be lifted, rotated or displaced.

D. Provide spacers or stabilizers to eliminate fixture instability.

E. Drilled expansion insert type anchors suitable for load and application requirements such as sleeve anchors, lag shields, and plastic anchors.

F. Provide auxiliary supports so fixtures can be drawn up tightly, tilted or rotated, and not affected by vibrations.

2.03 SUPPORTING STRUCTURES

A. Rack supports of galvanized steel channel sections with adequate feet to allow secure mounting. Weld sections, do not use bolts.

2.04 MOUNTING EQUIPMENT

A. For all panelboard, starters, disconnects, VFDs, control panel, etc. provide mounting panels of not less than 1/4 in. steel plate or 3/4 in. exterior grade plywood. Provide uniform mounting panels as far as practical. Paint plywood panels with 2 coats of fire rated gray enamel paint on all sides and ends.

2.05 CONDUIT SUPPORTS

A. 1- hole galvanized steel straps for EMT, 2-hole galvanized steel straps for all other conduits. Do not use perforated hanger iron.

2.06 VERTICAL CABLE SUPPORT

A. Support conductors in vertical raceways using suitable cable supports. Locate supports so each 25 ft-0 in. length of conductor in vertical raceway will be complete with support.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify locations prior to rough in.

B. Verify mounting details

3.02 FIELD MEASUREMENTS

A. Verify that field measurements are as shown on Drawings.

3.03 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

B. Accept equipment on site. Inspect for damage.

C. Protect equipment from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

3.04 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.

2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.

B. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".

C. Do not fasten supports to pipes, ducts, mechanical equipment, or other conduit.

D. Do not use spring steel clips on ceiling support wires.

E. Do not use powder actuated anchors.

F. Obtain permission from Engineer before drilling or cutting structural members.

G. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present a neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.

H. Install surface mounted cabinets and panelboards with minimum of four anchors.

I. In wet and damp locations use steel channel supports to stand cabinets and panelboards one inch off wall.

J. Use steel metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

K. Degrease and clean surfaces to receive nameplates and labels.

L. Install nameplate and label parallel to equipment lines.

M. Secure nameplates to equipment fronts using screws if so specified on drawings.

N. Anchors:

1. Install anchors at proper locations to prevent stresses from exceeding those permitted by ANSI B31 and transfer of loading and stresses to connected equipment.

2. Installation methods shall be in conformity with manufacturer's recommendations for maximum holding power.

O. Conduit Supports

1. Support conduit as follows:

a. Vertical Surfaces: Galvanized, heavy-duty, sheet steel straps; back straps provided for exposed conduit and conduit on exterior walls.

b. Horizontal Surfaces: Single or double rack channel trapeze, complete with conduit straps as required; supported with threaded hanger rods.

2. Support 1 3/4 in. and larger conduit runs passing through floors at each floor with riser pipe clamps.

P. Conduit Extending Through Roof:

1. Conduit extending through roof shall pass through ceiling box at roof line.

2. Provide 14 ga minimum galvanized 12 gauge box complete with watertight soldered seams and flanged to serve as pitch pocket for each conduit or provide a neoprene boot as compatible with roof.

3. Install conduit and pitch pocket in advance of roofing work.

4. Coordinate with roofer for providing all appurtenances required so that the installed system complies with roofing installation.

END OF SECTION

SECTION 26 05 34
RACEWAYS

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 - National Electric Code.

B. Conform to current National Electrical Manufactures Association (NEMA) Standards.

C. Conform to current Underwriters Laboratories (UL) Specifications and Standards.

D. Conform to current Telecommunication Industry Association (TIA/EIA).

E. Conform to current American National Standards Institute (ANSI) standards.

F. Conform to National Electrical Contractors Association (NECA) “Standards of Installation”.

G. Product specific standards and requirements are included in Product Specifications.

1.03 DESCRIPTION OF WORK

A. Furnish and install a complete and operable conduit/raceway system as indicated on the drawings and as specified herein.

B. All wire shall be in conduit or surface raceway. All conduits in finished areas shall be concealed. In unfinished areas, such as utility and mechanical rooms, the contractor shall conceal the branch wiring such as receptacles and light switches.

C. Where conduit passes through areas of differing temperatures, such as into or out of cool-rooms, freezers, unheated and heated spaces, buildings, provide listed conduit seals to prevent the passage of moisture and water vapor through the conduit.

D. Materials Included:
1. Metal conduit.
2. Flexible metal conduit.
3. Liquidtight flexible metal conduit.
4. Electrical metallic tubing.
5. Nonmetallic conduit.
6. Wireways.
7. MC cable.

1.04 RELATED WORK ELSEWHERE

A. Section 03: Concrete

B. Section 04: Masonry

C. Section 09: Finishes

D. Section 12: Furnishing

E. Section 15: Heating, Ventilation and Air Conditioning

F. Section 26, 27, and 28: Electrical

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts are to be new, undamaged and unused of current manufacture.

1.08 WARRANTY

A. Equipment shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available.

All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

2.02 CONDUIT GENERAL REQUIREMENTS

A. Minimum Size: 1/2 inch.

B. Conduit types not listed below are prohibited.

C. Rigid heavy wall galvanized steel conduits:
1. Are to be used in the following locations:
   a. Outdoors.
   b. Underground, unless PVC is shown on drawings or called out in other portions of this specification.
   c. In and under ALL concrete slabs, except for where PVC is allowed as stated in nonmetallic conduit portion of this specification.
   d. In sizes 2-1/2" and larger, where the conduit is exposed and where it is installed between the floor and 8' AFF. Above this height EMT conduit may be used.
   e. In areas having moisture, dust or gases.
   f. Exposed conditions where such mechanical protection is required.
2. Manufacturer: CONTRACTOR option.
3. Conduit:
   a. Impact and crush resistant mild steel tube with an accurate circular cross section, a uniform wall thickness, a defect free interior surface, and a continuous welded seam.
   b. Interior and exterior surfaces thoroughly and evenly coated with zinc using the hot-dip galvanizing process.
   c. Top-coated with a compatible organic layer to inhibit white rust and increase corrosion resistance.
   d. Factory cut threads, 0.75-inch taper per foot, protected after cutting with an application of molten zinc.
4. Conduit Bodies:

a. Ferrous metal construction electro-galvanized inside and out and coated with aluminum acrylic paint.

b. Tapered, threaded hubs with integral bushing.

c. Stainless steel hardware.

d. Cover constructed of same material with solid gasket.

5. Fittings:

a. Ferrous metal construction electro-galvanized inside and out.

b. Components critical to performance such as set screws, split rings, and locknuts constructed of hardened steel or adequately designed to insure positive bonds.

D. IMC (Intermediate Metal Conduit) is applicable in place of rigid heavy wall galvanized steel conduit in the following locations:

1. All areas except primary raceways.

E. EMT (Electrical Metallic Tubing) conduit:

1. May be used in the following locations:

a. Indoors in dry locations (walls, ceilings, exposed).

b. In sizes 2 1/2" and larger, where installed above ceilings or installed more than 8' above the floor. See paragraph B - Rigid heavy wall conduit.

2. Manufacturer: CONTRACTOR option.

3. Conduit:

a. Mild steel tube with an accurate circular cross section, a uniform wall thickness, a defect free interior surface, and a continuous welded seam.

b. Interior and exterior surfaces thoroughly and evenly coated with zinc using the hot-dip galvanizing process.

4. Fittings:

a. Setscrew, steel construction electro-galvanized inside and out.

b. Insulated throat connectors.

c. Components critical to performance such as set screws, split rings, and locknuts constructed of hardened steel or adequately designed to insure positive bonds.

F. Flexible Metal Conduit:

1. Lengths limited to minimum necessary, 6' maximum.

2. Limit use to dry areas.

3. For connection of lighting fixtures, motors and similar equipment.

4. To contain an equipment grounding conductor with phase conductors.

5. Bond grounding conductor to equipment served and nearest conduit system junction box.

6. Manufacturer: CONTRACTOR option.

7. Usage:

a. Use only in conjunction with electrical metallic tubing

8. Conduit:

a. Single strip, helically wound, galvanized steel with smooth interior surface conforming to applicable UL Standards.

b. Minimum size 1/2-inch may be used in lengths not to exceed 3-feet. All runs of flexible conduit shall be as short as practicable, of the same size as the conduit it extends and with enough slack to reduce the effects of expansion and vibration.

9. Fittings:

a. Connectors shall be malleable iron or steel with insulated throat, squeeze-type, with annular gripping rib. Particular attention shall be given to maintaining ground bond and firm support through flexible connections. Connections shall have insulated throats.

G. Liquid Tight Flexible Metal Conduit:

1. Requirements same as for flexible conduit.

2. Use in areas where environment is damp or could become damp or wet.

3. To contain an equipment grounding conductor with phase conductors. Bond grounding conductor to equipment served and nearest conduit system junction box.

4. Manufacturer: CONTRACTOR option.

5. Usage:

a. Use in conjunction with galvanized rigid metal conduit.

b. Use in conjunction with PVC coated galvanized rigid metal conduit.

6. Conduit:

a. Single strip, helically wound, galvanized steel core inside and outside with smooth interior surface with sunlight resistant thermoplastic jacket suitable for ambient environmental conditions conforming to applicable UL Standards.

b. Jacket shall be positively locked to core to prevent sleeving.

c. All runs of flexible conduit shall be as short as practicable, of the same size as the conduit it extends and with enough slack to reduce the effects of expansion and vibration.

7. Fittings:

a. Where used in conjunction with galvanized rigid metal conduit, connectors shall be malleable iron or steel, electro zinc plated, with insulated throat and taper threaded hub.

b. Where used in conjunction with PVC coated galvanized rigid metal or rigid aluminum conduit connectors shall be malleable iron or steel, electro zinc plated and PVC coated, with insulated throat and taper threaded hub.

c. Particular attention shall be given to maintaining ground bond and firm support through flexible connections.

d. All fittings shall be liquid tight.

H. Nonmetallic Conduit (PVC):

1. Where indicated on drawings.

2. In or under concrete slabs for 3 phase panelboards and 3 phase motor feeders only, NO single phase circuits or networks feeding single phase loads allowed.

3. PVC conduit may be used for low voltage wiring (24 volts or less), where allowed by code. PVC may not be used in plenum rated ceilings or if another type has been called out on the drawings.

4. Where PVC conduit penetrates floor, it must be installed per conduit installation detail.

5. PVC not allowed indoors above slab, except for single ground conductors in non-plenum areas.

6. Manufacturer:

   a. Carlon.

   b. Or equal.

7. Conduit:

   a. Made from polyvinyl chloride compound (recognized by UL), which includes inert modifiers to improve weatherability and heat distortion.

   b. Rated for use with 90 degree C conductors. Material shall comply with NEMA Specification TC-2.

   c. The conduit and fittings shall be homogeneous plastic material free from visible cracks, holes or foreign inclusions. The conduit bore shall be smooth and free of blisters, nicks or other imperfections, which could mar conductors or cables. d. Conduit, fittings and cement shall be produced by the same manufacturer to assure system integrity.

8. Conduit Bodies:

   a. Made from polyvinyl chloride compound (recognized by UL), which includes inert modifiers to improve weatherability and heat distortion.

   b. Rated for use with 90 degree C conductors. Material shall comply with NEMA Specification TC-3.

   c. Stainless steel hardware.

   d. Cover constructed of same material with solid gasket.

9. Fittings:

   a. Made from polyvinyl chloride compound (recognized by UL), which includes inert modifiers to improve weatherability and heat distortion.

   b. Rated for use with 90 degree C conductors. Material shall comply with NEMA Specification TC-3.

I. MC Cable

1. Manufacturer: Contractor's Option.

2. MC Cable: Interlocked steel sheath with grounding conductor. All conductors to be stranded

   copper, including the ground.

3. Flexible metallic covered cable may be used in the following locations:

   a. Building interior walls where interior walls are constructed of drywall over wood or metal studs. Flexible cable may be run from outlet to outlet horizontally in the walls. Where conduit exits top of wall, this shall be connected to a junction box within 24", and from that point, conduit shall be used.

   b. MC cable may only be used in those walls that reach to the ceiling. It may not be used in partial height walls. It may not be used in any exposed ceiling areas.

   c. MC cable shall be supported with steel straps that are designed for the cable diameter being installed.

2.03 METAL CONDUIT

A. Rigid Steel Conduit: ANSI C80.1.

B. Intermediate Metal Conduit (IMC): Rigid steel.

C. Fittings and Conduit Bodies: ANSI/NEMA FB 1; material to match conduit all steel fittings.

2.04 FLEXIBLE METAL CONDUIT

A. Description: Interlocked steel construction.

B. Fittings: ANSI/NEMA FB 1.

2.05 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

A. Description: Interlocked steel construction with PVC jacket.

B. Fittings: ANSI/NEMA FB 1 with insulated throats.

2.06 ELECTRICAL METALLIC TUBING (EMT)

A. Description: ANSI C80.3; galvanized tubing.

B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; steel or malleable iron, insulated throat connectors.

2.07 NONMETALLIC CONDUIT

A. Description: NEMA TC 2; Schedule 40 PVC.

B. Fittings and Conduit Bodies: NEMA TC 3.

2.08 WIREWAYS

A. Description: General purpose type wireway.

B. Knockouts: Bottom only.

C. Size: As required.

D. Cover: Hinged.

E. Connector: Slip-in.

F. Fittings: Lay-in type with removable top, bottom and sides with captive screws.

G. Finish: Rust inhibiting primer coat with gray enamel finish.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify routing and termination locations of conduit prior to rough in.

B. Verify conduit routing. Routing as shown on Drawings is in approximate locations unless dimensioned. Route as required to complete wiring system.

3.02 FIELD MEASUREMENTS

A. Field verify all measurements. Do not base conduit rough-in or equipment locations on dimensions obtained from the contract drawings.

B. Identify conflicts with the work of other trades prior to installation of electrical equipment and conduit work.

C. Adjust conduit system installation to satisfy field requirements.

3.03 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

B. Accept conduit on site. Inspect for damage.

C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

D. Protect PVC conduit from sunlight.

3.04 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.
2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.
3. All conduit shall be installed in building unless indicated otherwise.
4. All conduits stubbed into ceiling shall have end bushings.
5. Install conduit in accordance with NECA "Standard of Installation."
6. Install nonmetallic conduit in accordance with manufacturer's instructions.
7. Arrange supports to prevent misalignment during wiring installation.
8. Support conduit using coated steel or malleable iron straps, lay in adjustable hangers, clevis hangers, and split hangers.
9. Group related conduits: support using conduit rack. Construct rack using steel channel; provide space on each for 25 percent additional conduits.
10. Fasten conduit supports to building structure and surface under provisions of Section 26 05 29.
11. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
12. Do not attach conduit to ceiling support wires.
13. Arrange conduit to maintain headroom and present neat appearance.
14. Route exposed conduit parallel and perpendicular to walls.
15. Route conduit in and under slab from point to point.
16. Do not cross conduits in slab.
17. Maintain adequate clearance between conduit and piping.
18. Maintain 12 inch clearance between conduit and surfaces with temperatures exceeding 104 degrees F.
19. Cut conduit square using saw or pipecutter; de burr cut ends.
20. Bring conduit to shoulder of fittings; fasten securely.

21. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cleaner and cement to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum.

22. Use conduit hubs to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.

23. Install no more than equivalent of three 90 degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Hydraulic one-shot bender may be used to fabricate factory elbows.

24. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.

25. Provide suitable fittings to accommodate expansion and deflection where conduit crosses control and expansion joints.

26. Provide suitable pull string in each empty conduit, except sleeves and nipples.

27. Use suitable caps to protect installed conduit against entrance of dirt and moisture.

28. Ground and bond conduit under provisions of Section 26 05 26.

29. Identify conduit under provisions of Section 26 05 53.

30. Flexible metal conduit shall be used for connection to equipment subject to vibration and light fixture drops in all removable tile ceilings. Length shall not exceed 36" for equipment connections and 72" for light fixture connections.Minimum size 1/2", except 3/8" may be used for fixture drops. Install flexible conduit drops from independent junction box mounted above ceiling and accessible from below ceiling to recess ceiling mounted equipment. Allow for positioning of equipment to next tile increment.

31. Seal conduit with oakem or duct seal where they leave heated areas and enter unheated areas.

32. Surface raceway shall be installed to run parallel of all existing surfaces. Where raceway is used on ceiling, raceway shall be mounted at ceiling wall junction and extended from the junction box out to ceiling mounted device. Raceway shall be routed in corners and along mouldings to be as least obtrusive as possible.

33. Exterior cable and conduit installation.

    a. Layout in trench may be started at either end unless the drawings indicate that it is to pitch for drainage. In which case the layout should be started at the lowest end. The cable and conduit shall be pitched 1" per 100 feet.

    b. Include all excavation and backfill.

    c. Cable and conduit shall be a minimum of 30" deep.

    d. Cable and conduit shall be laid in a 6" sand bed and covered with another 6" of sand before backfilling with earth.

    e. Provide Brady identotape 12" above all buried conduits and cables.

    f. Provide #12 pull wire in all empty or spare conduits.

    g. Restore existing surface back to its original condition.

    h. For all excavation, maintain erosion protection per Federal, State, and municipal requirements. All work associated with erosion control for excavation shall be done as per Federal, State and municipal requirements, as well as any plans, meetings, and other special conditions.

    i. For all trenching that is under paved surfaces, backfill with structural material. Material shall be tapped in layers up to the point of the surface paving material.

34. For intermediate floor structural slabs, assume that conduit cannot be installed within the slab. If installing conduit within the slab, coordinate this with the Construction Manager and verify with the Engineer prior to installation.

35. For on-grade slabs, the conduit may be run in or under the slab. Verify with concrete installation prior to running conduits in slab to determine if that conduit coordinates with the slab reinforcing.

B. Conduits Stubbed into Ceiling Space

1. All conduits stubbed into ceiling shall have end bushings or insulated connectors.

C. Service Entrance Conduit

1. All joints and couplings of buried service entrance conduits shall be taped and coated with an electrical insulating and sealing compound to make them watertight.

D. Exterior Wall Penetrations

1. For all exterior wall penetrations, patch the wall with material to match the existing wall finish. The openings shall be as small as possible to minimize the impact on the existing wall finish. Install duct seal within the conduit to prevent air flow.

2. When conduits are rising from the ground to penetrate the walls, furnish rigid steel conduit where conduit is exposed, and deep-back LB's condulettes or NEMA 4X stainless steel junction box.

E. Hollow Core Precast Concrete

1. Where outlet boxes are shown on precast concrete, provide an opening in the precast to flush mount the outlet box and fish flexible conduit through the hollow core, down to the box from a point above the grid ceiling or at the ceiling joist. Provide appropriate mortar materials to attach the box in place.

F. Conduit Work in Tunnels

1. Assume that when conduit work is installed in the existing building tunnels, the conduit is to be installed in such a manner as to maintain headroom and walking space.

2. Conduit shall be supported along walls near ceiling, or existing hangers may be used.

G. Interface with Other Products

1. Install conduit to preserve fire resistance rating of partitions and other elements.

2. Route conduit through roof openings for piping and ductwork or through suitable roof jack. Coordinate location with roofing installation.

END OF SECTION

SECTION 26 05 35

ELECTRICAL BOXES

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 - National Electric Code.

B. Conform to current National Electrical Manufactures Association (NEMA) Standards.

C. Conform to current Underwriters Laboratories (UL) Specifications and Standards.

D. Conform to National Electrical Contractors Association (NECA) “Standards of Installation”.

1.03 DESCRIPTION OF WORK

A. Furnish and install boxes as indicated on drawings and specified herein.

B. The intent of this section is to limit the use of sheet steel boxes to small circuit wiring in dry locations for installations of outlets, switches, exhaust fans, lights, unit heaters, small overhead door units, small power outlets, and limiting the general circuit capacity of 50 amps or less.

C. Outlets, switches, controls and etc., installed on machinery or processes shall be served with FS and NEMA 12 type boxes.

1.04 RELATED WORK ELSEWHERE

A. Section 03: Concrete

B. Section 04: Masonry

C. Section 09: Finishes

D. Section 12: Furnishing

E. Section 23: Heating, Ventilation and Air Conditioning

F. Section 26, 27, and 28: Electrical

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts are to be new, undamaged and unused of current Manufacture.

1.08 WARRANTY

A. Equipment shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available.

All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

2.02 BOXES

A. Pull boxes and junction boxes: Metal construction, conforming to National Electrical Code, with screw on or hinged cover.

B. Flush mounted pull boxes: Provide overlapping covers with flush head cover retaining screws, prime coated.

C. Small surface type junction boxes to be used in dry locations only for general purpose lighting and outlets shall conform to the following standard sizes and spec's:

1. All boxes and covers shall be made of stamped steel. (No sectional boxes allowed).

2. Minimum sizes:

a.	Handy boxes	4 x 2 1/8 x 2 1/8
b.	Octagon boxes	4 x 1 1/2
c.	4" sq. boxes	4 x 1 1/2 or 4 x 2 1/8
d.	4 11/16" sq. boxes	4 11/16 x 2 1/8

D. Flush mounted outlet boxes used in dry locations shall conform to the following standards:

1. All boxes and covers shall be made of stamped steel. No sectional boxes allowed.

2. All boxes for communications outlets and blank outlets shall be of the "deep" variety.

3. Minimum sizes:

a. Masonry boxes: minimum 3 1/2" deep, gang as required. These can be used for outlets or blank outlets.

b. 4" square wiring device boxes: 2 1/8" deep when used for communication or blank outlets. 1 1/2" or 1 1/8" deep when used for

wiring devices. All 4" square boxes shall be equipped with square cut 1" raised covers of appropriate depth.

c. Note special requirements for boxes that will be used in corrosive atmospheres, such as pools. In these atmospheres use corrosion resistant (PVC) outlet boxes.

d. Note special requirements for flush boxes for outside receptacles. These boxes shall be 4-hole type or other type to properly patch the surface weather tight covers.

E. Junction and Splice Boxes:

1. Screw covers, galvanized after fabrication and not less than code dimensions.

2. Entry openings in boxes shall be made with knock-out punch tool or hole saws.

3. Burning of entry openings with a torch will not be acceptable.

4. Paint exposed ferrous surfaces, 2 coats rust resisting paint.

F. Provide outlet box divider barriers between 277/480 and 120/208 devices per N.E.C. and between switches for emergency and non-emergency circuits.

G. Flush interior devices shall utilize 4" square box with raised covers or deep masonry boxes as appropriate.

H. Raised covers to have square cut corners.

I. Where existing boxes are reused, provide add-a-depth device rings to devices installed without proper box depth to finish surface.

J. Box extensions will not be allowed.

K. Through the wall type outlet boxes not allowed.

L. Junction boxes and pull boxes shall not have knockouts. Enclosure type, material, and dimensions shall be as indicated on the drawings and as stated in these specifications. Where no type or size is indicated for junction boxes and pull boxes, they shall be one size larger than required by NEC.

M. For exterior outlets, such as receptacles, use FS type outlet box flush mounted.

N. Large junction boxes shall be constructed from steel in the following gauges:

Box Size	Minimum Steel Gauge
Up to 24" x 30" x 12"	14
24" x 36" x 8" to 36" x 36" x 16"	12
36" x 42" x 8" and larger	11

O. Boxes that are shown on hollow-core, precast concrete shall be flush mounted into the spancrete unless shown otherwise on drawings. Coordinate opening to be in hollow core. Provide opening.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify routing and termination locations of conduit prior to rough in.

3.02 FIELD MEASUREMENTS

A. Verify that field measurements are as shown on Drawings.

B. Mounting heights:

1. As shown on drawings and details.

2. Coordinate exact heights with specific manufacturer's recommendations.
3. All mounting heights of keypads and pushbuttons to be ADA compliant.

3.03 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

B. Maintain original quality and condition of equipment while it is in storage.

3.04 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.

2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.

B. All fire alarm pull and junction boxes and their covers shall be painted red and have "fire alarm" written on the cover in large black non-washable ink. The lettering shall be such that it can be read from 10' away. Note that this requirement is in addition to the NEC requirements which requires that the box itself be marked in red.

C. Boxes that are being installed in rough masonry surfaces (such as split face block) shall be installed in such a manner to allow the wiring device or light fixture and the associated device plate to be seated squarely. Have the masonry opening cut to the size of the plate and then box grouted in, or the rough masonry around the box shall be chiseled away and mortar installed around the box to provide a flat finish.

D. Coordinate with the masonry installation all details of installation on rough masonry surfaces. Without coordination assume responsibility for all costs to provide the flat surface, which will require chiseling the surface of the rough masonry away and providing mortar to obtain this smooth finish.

E. Install electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.

F. Install electrical boxes to maintain headroom and to present neat mechanical appearance.

G. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

H. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.

I. Install boxes to preserve fire resistance rating of partitions and other elements, using materials and methods compatible with NFPA.

J. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices with each other.

K. Use flush mounting outlet boxes in finished areas.

L. Do not install flush mounting boxes back to back in walls; provide minimum 6 inch separation. Provide minimum 24 inches separation in acoustic rated walls.

M. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.

N. Use stamped steel bridges to fasten flush mounting outlet box between studs.

O. Install flush mounting box without damaging wall insulation or reducing its effectiveness.

P. Use adjustable steel channel fasteners for hung ceiling outlet box.

Q. Do not fasten boxes to ceiling support wires.

R. Support boxes independently of conduit.

S. Use gang box where more than one device is mounted together. Do not use sectional box.

T. Use 2 gang box with plaster ring for single telecommunication outlets.

U. Use cast outlet box in exterior locations exposed to the weather and wet locations.

V. Use cast floor boxes for installations in slab on grade; formed steel boxes are acceptable for other installations.

W. Large Pull Boxes: Boxes larger than 100 cubic inches in volume or 12 inches in any dimension.

1. Interior Dry Locations: Use hinged enclosure.
2. Other Locations: Use surface mounted cast metal box.

X. Grounding

1. All equipment shall be grounded in accordance with NEC, these specifications and drawings, and the equipment supplier's recommendations.

Y. Interface with Other Products

1. Coordinate masonry cutting to achieve neat opening.
2. Coordinate mounting heights and locations of outlets mounted above counters, benches and backsplashes.
3. Position outlet boxes to locate luminaires as shown on reflected ceiling plan.

END OF SECTION

SECTION 26 05 37
LOCATION OF OUTLETS AND EQUIPMENT

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 - National Electric Code.

B. Conform to National Electrical Contractors Association (NECA) “Standards of Installation”.

1.03 DESCRIPTION OF WORK

A. Furnish and install a complete installation as indicated on the drawings and as specified herein.

B. This specification lays out the general requirements for heights of devices. Heights of devices may be required to be changed depending on interferences in the walls or interferences with mechanical or other architectural equipment. Assume responsibility for verifying the existing conditions in the room by reviewing mechanical and architectural drawings so as not to interfere with that equipment.

C. Verification of door swings. Assume responsibility to verify door swings with the architectural plans prior to outlet box installation. Review if the switch location is such that it can be easily accessed upon opening the door.

1.04 RELATED WORK ELSEWHERE

A. Section 03: Concrete

B. Section 04: Masonry

C. Section 09: Finishes

D. Section 12: Furnishing

E. Section 23: Heating, Ventilation and Air Conditioning

F. Section 26, 27, and 28: Electrical

G. Section 17: Low Voltage

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

1.06 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts are to be new, undamaged and unused of current manufacture.

C. All boxes to be plumb and level.

1.07 WARRANTY

A. Equipment shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available.

All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

2.02 EQUIPMENT

A. Specifications for equipment being installed under conditions set forth in this section shall be found in related work elsewhere.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify installation locations suitability and adjust as directed.

3.02 FIELD MEASUREMENTS

A. Verify that field measurements are as shown on Drawings.

B. Mounting heights:

1. As shown on drawings and details.
2. Coordinate exact heights with specific manufacturer's recommendations.
3. All mounting heights of keypads and pushbuttons to be ADA compliant.

3.03 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section prior to installation.

3.04 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.
2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.

B. Grounding

1. All equipment shall be grounded in accordance with NEC, these specifications and drawings, and the equipment supplier's recommendations.

C. Location:

1. Location of outlets and equipment as shown on plans is approximate. Verify exact location determined by:

   a. Construction or code requirements.

   b. Conflict with equipment of other trades.

   c. Equipment manufacturer's drawings.

2. Minor modification to the location of outlets and equipment is considered a part of this

   specification and shall be made with no additional compensation.

3. Mounting heights for all devices and equipment to be measured from finished floor to center of device and unless otherwise noted on plans shall be as follows:

Switches	46"	
Receptacles	18"	
Above Counter receptacles	-	mount just above backsplash for above counter outlets. See floor plan general notes.
Communication outlets	-	to match adjacent receptacle outlet. If receptacle outlet is not shown, provide 18" above floor to center of device or 8" above counter.
Wall Telephone	46"	
Blank Outlets		to match receptacle height located adjacent to it unless stated otherwise on plans

D. Check Heating and Ventilating Plans for location of baseboard heating elements or wall radiators and mount equipment accordingly.

E. Receptacles below counter: Verify the actual mounting height with Engineer. Determine if device is to fit into knee space and rough-in accordingly.

END OF SECTION

SECTION 26 05 53

ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 - National Electric Code.

B. Conform to National Electrical Contractors Association (NECA) “Standards of Installation”.

1.03 DESCRIPTION OF WORK

A. Furnish and install complete labeling as specified herein.

B. All major pieces of electrical equipment shall have engraved labels indicating their functions. This shall include the following:

1. All pushbuttons shall have labels that are engraved as to its function.

2. All panelboards, starters, disconnects, transfer switches, switchboards, motor control centers and transformers shall have engraved labels indicating their functions.

C. Low Voltage Systems

1. Provide labeling for all low voltage cabling, both ends within 3” of termination point and low voltage device plates. Color coding to be maintained for each system independently.

2. Each component of the system to be clearly marked as to manufacturer, part number, and any special designation on drawing.

3. All patchpanels, racks, and modular plates in patchpanels to be labeled.

1.04 RELATED WORK ELSEWHERE

A. Section 23: Heating, Ventilation and Air Conditioning

B. Section 26, 27, and 28: Electrical.

C. Section 27: Low Voltage System.

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

1.06 OPERATIONS & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04 .

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts are to be new, undamaged and unused of current Manufacture.

1.08 WARRANTY

A. Equipment shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available.

All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

2.02 ENGRAVED LABELS

A. Where the words "provide engraved label" appears on the drawings or in the specifications, it shall mean that the label shall be an engraved 3-layer phenolic label with black letters on white material, unless other colors are called out on the drawings or details.

B. The label size shall be a minimum of 3/4" high and be 3" long. Labels may be attached with double backed adhesive tape unless indicated otherwise.

C. Where references are made on the drawings to provide engraved labels, engraved nameplate or engraved plates, these should be engraved phenolic labels.

2.03 ENGRAVED PLATES

A. Where references are made to engraved plates, this shall mean that the normal device plate shall have an engraving on it with black letters so as to indicate what this switch or device is used for.

2.04 BRANCH CIRCUIT OUTLETS: LABELING

A. Each branch circuit outlet, receptacles, lighting, and any other device requiring 120/208/277 or 480 volt power, the contractor shall:

1. Provide circuit, written in pencil or non-washable ink, inside of outlet box in an area that can be easily viewed when removing outlet faceplate.

2. Write circuit number in ink on device between receptacles under plate.

3. Optional: Provide typed label (not dyno label) for each circuit attached to device plate.

4. Label each junction box outlet cover in non-washable marker as to circuit number routed through junction box.

2.05 PANELBOARDS: LABELING

A. Panelboard Directory:

1. Prepare and affix a typewritten directory to the inside cover of each panelboard indicating loads controlled by each circuit.

2. Each distribution and lighting panelboard shall be equipped with a typewritten directory accurately indicating rooms and/or equipment being served.

3. Assume that originally directories will have to be developed based on the room numbers on the project drawings.

4. Near project completion, all directories will have to be changed to reflect actual room numbers as designated by the building occupant.

5. Include the cost of doing the original handwritten directory and revisions to the directory based on occupant room numbers.

6. Each existing panelboard that is revised, modified or has had circuits deleted or added to, shall have its directories retyped to reflect existing circuits and all modified circuits.

7. Each changed circuit on existing panelboards shall have an asterisk next to the revised or modified circuits.

B. Panelboard Identification:

1. Label per NEC 210.5.

2. Identify each panel with a suitably engraved nameplate mounted at the top of the front cover.

3. The nameplates shall be made of laminated black and white plastic with white on the outside.
4. The lettering shall be 1/4 inch high (minimum), engraved by cutting through the white outside layer so that the letters appear black.

5. Fasten nameplates with brass or stainless steel panhead screws.

6. Nameplate engraving shall match the numbers or letters shown on the drawings or assigned by the Owner's Representative.

7. Labels shall be engraved as to the function of the circuit breaker.

8. Labels shall also be engraved to indicate the load served by the circuit breaker.

C. Identify the source of the feeder circuit serving the panelboard.

2.06 STARTERS AND DISCONNECTS

A. Each starter and disconnect furnished by this section or furnished by other sections but installed by this section shall have an engraved laminated label indicating which piece of equipment it controls.

B. This requirement is waived if the disconnect or starter is attached directly to the piece of equipment that it is controlling or operating.

2.07 COMMUNICATIONS SYSTEM CABLES IDENTIFICATION

A. Communication system cables are defined as:

1. All low voltage cabling, not 120 volt.

B. Each wire or cable that is furnished and installed for the above systems shall be identified at each end of the cable using the same identification marker at both ends, within 3” of termination point.

C. The identification shall be the same that is furnished by the contractor in his submittal documents.

D. Labels shall be overwrap type “Panduit PLL or PDL type” or equal labels by Brady.

2.08 COMMUNICATIONS SYSTEM DEVICES

A. Communication system devices are designated as:

1. Data outlets in rooms.
2. Data outlets at patchpanel.

B. Each label shall be a computer generated, laser printed, adhesive type label; either clear or white.

C. The labels shall be attached to each of the plates so that the device on the plate can be easily identified.

D. Provide Panduit PLL series type label, or equal by Brady.

2.09 MISCELLANEOUS

A. Branch circuits

1. On branch circuits, use shall be made of all standard wire insulation colors available.
2. Where wires of different systems junction in a common box, each cable shall be grouped with its own system and identified using tags or identification strips.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify surfaces are cleaned and ready to receive labels.

B. Verify labels are correct.

C. Verify that labels are installed as specified, level and plumb.

3.02 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

3.03 INSTALLATION

A. General:

1. Degrease and clean surface prior to installing labels.
2. Install nameplate and label parallel to equipment lines.
3. Secure nameplates to equipment fronts using screws if so specified on drawings.

END OF SECTION

SECTION 26 09 23

LIGHTING CONTROLS

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 National Electrical Code.

B. Conform to current National Electrical Manufactures Association (NEMA) Standards.

C. Conform to current Underwriters Laboratories (UL) Specifications and Standards.

D. Conform to current NEMA Enclosure Standards.

E. Conform to NEMA Standard WD-7-2000.

1.03 DESCRIPTION OF WORK

A. Furnish and install a complete lighting control system as shown on the drawings and as specified herein.

This equipment shall provide the following functions:

1. Dual technology, PIR and ultrasonic motion sensor lighting controls.
2. Exterior photocell lighting controls.

1.04 RELATED WORK ELSEWHERE

A. Section 09: Finishes.

B. Section 11: Equipment

C. Section 26, 27, and 28: Electrical

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

B. The following information shall be submitted in addition to items listed above:

1. Wiring diagram indicating wire size and type for each individual piece of equipment.
2. Complete riser diagram indicating all equipment and interconnecting components with indication of location of each device.
3. Submittal drawings are required for the following systems. They shall include the following:

a. Dual technology, and Passive infrared lighting controls.

1) Drawing showing all switches, and sensors and connections between all devices and lighting circuits.

2) Cut sheets on components.

3) Proper circuit numbers shall be shown on drawings.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts shall be new and unused of current manufacture.

C. Provide all necessary accessories required for a complete and operable system.

1.08 WARRANTY

A. Equipment shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available. All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

B. Furnish and install complete lighting control system as specified in these specifications and on the drawings. Exact quantities and equipment configurations to be determined by plans, specifications, control schedules, and as required by manufacturer to make a complete and operating system.

2.02 DUAL TECHNOLOGY CEILING MOUNTED LIGHTING CONTROL

A. Provide dual technology type lighting controls in all areas unless directed to use single technology ultrasonic or passive infrared technology.

B. Determine proper sensor type and relay for direct connection requirements. Provide appropriate units.

C. Employ the services of a manufacturer’s appointed representative to assist in making the proper adjustments on the motion detector installation. Meet with this person prior to making installation to determine if the locations shown are appropriate for the type of device being furnished. Make modifications in the locations for the devices, if required, to provide a more adequate installation.

D. Modify time settings, sensitivity settings, and "initial on" and "keep on" controls as necessary, and as required for the space. Default time of 15 minutes “keep on” time will be used at initial activation.

E. Installation assistance:

1. Include time in bid to work with the Owner and manufacturer to determine the proper time setting and sensor setting for each of the motion switches.

2. Each of the switches shall be set for the type of space in which they operate.

3. Include time in bid to have the manufacturer's representative come on site and review the job to determine what the expected settings are for the equipment.

F. Zero crossing relay controls shall be supplied.

G. Dual technology occupancy sensors shall be capable of detecting presence in the floor area by detecting doppler shifts in transmitted ultrasound and passive infrared heat changes.

H. Ultrasonic sensing shall be volumetric in coverage.

I. Passive infrared sensing shall utilize a multi-element fresnel lens to ensure that the sensor is insensitive to short-wavelength infrared waves such as those emitted by the sun. Lens shall have grooves facing in to avoid dust and residue build up which affect ir reception.

J. Both technologies shall sense presence in floor area before lighting will turn on. Detection by either technology shall hold lighting on for set period of time.

K. Sensors shall have time-out adjustment from 15 seconds to 35 minutes. Sensor shall not have settings exceeding 35minutes.

L. Sensors shall cover 2000 square feet with standard lens and 90 linear feet with long-range lens for walking motion. Coverage meeting NEMA Standard WD 7-2000 will be required.

M. Sensors shall be capable of being networked to achieve adequate coverage.

N. Sensors shall have adjustable light level sensor to prevent lighting from

O. Sensors shall have an isolated relay rated at 24VDC that can be used to interface with HVAC, EMS, and other monitoring systems.

P. Each sensing technology shall have independent sensitivity adjustments, time adjustments and led display.

Q. Sensitivity and timer control shall be accessible on the front of the sensor. Sensor shall incorporate an accessible but recessed on/override device.

R. Sensors shall operate on 24VDC.

S. Power supply shall be provided by a power pack that consists of a transformer and contact relay in one unit.

T. Provide 18 gauge plenum rated cable for interconnection of centers to relays.

U. Sensor shall have standard 5 year warranty and shall be UL listed.

V. Approved venders are Watt Stopper, Hubbell, Novitas, Leviton, or Sensor Switch.

2.03 PASSIVE INFRARED HIGH BAY LIGHTING CONTROL

A. The passive infrared sensor shall be capable of detecting presence in the control area by detecting changes in infrared energy.

B. Sensor shall be sealed and gasketed and shall be moisture and dust proof.

C. Sensor shall function in a temperature range of 14°F (-10°C) to +1315°F (+55°C).

D. Sensor shall utilize a temperature compensated, dual element sensor and a multi-element Fresnel lens.

E. Determine proper sensor coverage pattern and relay for direct connection requirements. Provide appropriate units.

F. Employ the services of a manufacturer's appointed representative to assist in making the proper adjustments on the motion detector installation. Meet with this person prior to making installation to determine if the locations shown are appropriate for the type of device being furnished. Make modifications in the locations for the devices, if required, to provide a more adequate installation.

G. Modify time settings, sensitivity settings, and "initial on" and "keep on" controls as necessary, and as required for the space. Default time of 10 minutes "keep on" time will be used at initial activation.

H. Installation Assistance:

1. Include time in bid to work with the Owner and manufacturer to determine the proper time setting and sensor setting for each of the motion switches.
2. Each of the switches shall be set for the type of space in which they operate.
3. Include time in bid to have the manufacturer's representative come on site and review the job to determine what the expected settings are for the equipment.

I. Fresnel lens shall be a Poly IR 4 based material (for standard and Long Range lens) to offer superior performance in the infrared wavelengths and filter short wavelength infrared, such as those emitted by the sun and other visible light sources. The lens shall have grooves facing in to avoid dust and residue build up which affects IR reception. Aisle way lenses shall be a poly IR 2 based material.

J. To ensure sensitivity to small motion at the desk top, the sensor shall have a standard 30 element lens with 15 layers horizontally and 4 layers vertically; a 14 element Long Range lens with 9 layers horizontally and 4 layers vertically; or an 18 element 2-sided Aisle Way lens with 9 layers vertically.

K. Sensor shall cover up to 2000 square feet with the Standard Lens, up to 90 linear feet with the Long Range Lens, and up to 120 linear feet with the 2-Sided Aisle Way Lens for walking motion when mounted at a ceiling height of 10 feet.

L. Sensor shall have an additional single pole, double throw isolated relay with normally open, normally closed, and common outputs rated for 1 Amp at 24 VDC. The isolated relay is for use with HVAC control, data logging, and other control options.

M. Sensor shall have a DIP switch controlled digital time delay setting, adjustable from 15 seconds to 10 minutes.

N. Sensor shall have DIP switch sensitivity setting adjustable from minimum to maximum.

O. Adjustments and mounting hardware shall be concealed under a removable cover to prevent tampering of adjustments and hardware.

P. Sensors shall be capable of being wired in parallel to allow coverage of large areas.

Q. To ensure quality and reliability, sensor shall be manufactured by and ISO9002 certified manufacturing facility and shall have a defect rate of less than 1/3 of 1%.

R. Sensors shall operate on 24VDC.

S. Power supply shall be provided by a power pack that consists of a transformer and contact relay in one unit.

T. Provide 18 gauge plenum rated cable for interconnection of centers to relays.

U. Sensor shall have standard 5 year warranty and shall be UL listed.

V. Approved venders are Watt Stopper or equal.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify equipment is in compliance with approved submittal drawings.

3.02 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

B. Maintain original quality and condition of equipment while it is in storage.

3.03 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.

2. Install all fixtures, materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.

3. Start of installation shall not begin until areas are broom clean, properly lighted, exterior enclosing walls in place, exterior windows glazed, roof completely installed to prevent weather damage to equipment.

B. Cleaning:

1. Prior to turning the system over to the Owner, the system shall be physically cleaned.

2. All appearance defects shall be carefully and professionally touched up so that the equipment is in "factory new" condition.

3. At the completion of the work, remove from the building and the premises all rubbish and debris resulting from the work.

C. Install products in accordance with manufacturer's instructions.

D. Install devices plumb and level.

E. Install switches with off position down.

F. Labeling:

1. Each panel enclosure shall be labeled as to its function.

G. Final Testing

1. The completed lighting controls system shall be fully tested in accordance with NFPA by the Contractor in the presence of the Owner's representative and the Engineer. Upon completion of
a successful test, the Contractor shall so certify in writing to the Owner.

3.04 OWNER TRAINING

A. Provide complete operator training for the Owner's personnel.

B. Provide minimum one hour training on the operation of each system in this section.

END OF SECTION

SECTION 26 24 16

PANELBOARDS

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. American National Standards Institute/National Fire Protection Agency (ANSI/NFPA), Specifications and Standards, current edition:

1. NFPA70 – National Electrical Code.

B. National Electrical Contractors Association (NECA), Standard of Installation, current edition.

National Electrical Manufacturers Association (NEMA), Specifications and Standards, current edition.

1. NEMA PB 1 - Panelboards
2. NEMA PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards
Rated 600 Volts or Less.
3. NEMA AB 1 - Molded Case Circuit Breakers.
4. NEMA KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum)

C. Underwriters Laboratories, Inc. (UL), Specifications and Standards, current edition:
1. UL 50 - Enclosures for Electrical Equipment
2. UL 67 - Panelboards.
3. UL 98 - Enclosed and Dead-front Switches
4. UL 489 - Molded-Case Circuit Breakers and Circuit Breaker Enclosures

D. Canadian Standards Association (CSA), Specifications and Standards, current edition: 1. CSA Standard C22.2 No. 29-M1989 - Panelboards and Enclosed Panelboards 2. CSA Standard C22.2 No. 5-M91 - Molded Case Circuit Breakers

E. Federal Specifications and standards, current edition:
1. W-P-115C - Type I Class 1
2. W-C-375B - Molded Case Circuit Breakers
3. W-C-375B/Gen - Circuit Breakers, Molded Case, Branch Circuit and Service.
4. W-P115C - Type 1 Class 2 Load Center

F. American Society of Testing Materials (ASTM), Specifications and Standards, current edition.

1.03 DESCRIPTION OF WORK

A. Furnish and install complete and operable Distribution and Branch Circuit Panelboards system as indicated on the drawings and as specified herein.

1.04 RELATED WORK ELSEWHERE

A. Section 26, 27, and 28: Electrical

1.05 SHOP DRAWINGS

B. Submit shop drawings in accordance with Section 26 05 04.

C. The following information shall be submitted in addition to the above:
   1. Manufacturer literature sufficient in scope to demonstrate compliance with the requirements of this specification.
   2. Overall panelboard dimensions, interior mounting dimensions, and wiring gutter dimensions. The location of the main, branches, and solid neutral shall be clearly shown. Illustrate one line diagrams with applicable voltage systems.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04 .

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. The panelboard manufacturer shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development, production, installation, and service, in accordance with ISO 9001.

C. All panelboards provided under this section shall be the products of a single manufacturer specializing in manufacture of panelboard products with a minimum of fifty years documented experience.

D. Provide all necessary accessories required for a complete and operable system.

1.08 WARRANTY

A. Panelboards shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available.

   All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

B. Provide a complete and fully functional distribution system using materials and equipment of types, sizes, and rating as required to meet performance requirements. Use materials and equipment that comply with referenced standards and manufacturer's standard design and construction, in accordance with published product information. Coordinate the features of all materials and equipment so they form an integrated system, with components and interconnections matched for optimum performance of specified functions.

2.02 240VAC BRANCH CIRCUIT PANELBOARDS

A. Manufacturers

1. Schneider Square D NQOD
2. Eaton Pow-R-Line 1a

B. Interior:

1. Rated for 240 VAC/48 VDC maximum. Continuous main current ratings, as indicated on the drawings, not to exceed 600 amperes maximum.
2. UL Listed short circuit current ratings as indicated on the drawings with a maximum of 200,000 RMS symmetrical amperes.
3. Provide one continuous bus bar per phase. Each bus bar shall have sequentially phased branch circuit connectors suitable for plug-on or bolt-on branch circuit breakers. The bussing shall be fully rated. Panelboard bus current ratings shall be determined by heat-rise tests conducted in accordance with UL 67. Bussing shall be plated copper. Bus bar plating shall run the entire length of the bus bar. Main lug and main breaker panelboards shall be suitable for use as Service Equipment.
4. All current-carrying parts shall be insulated from ground and phase-to-phase by high dielectric strength thermoplastic.
5. A solidly bonded copper equipment ground bar shall be provided. An additional copper isolated/insulated ground bar shall also be provided where indicated on the drawings.
6. Split solid neutral shall be plated and located in the mains compartment up to 225 amperes so all incoming neutral cable may be of the same length. UL Listed panelboards with 200 percent rated solid neutrals shall have plated copper neutral bus for non-linear load applications where indicated on the drawings.
7. Interior trim shall be of dead-front construction to shield user from energized parts. Dead-front trim shall have pre-formed twist-outs covering unused mounting space.
8. Nameplates shall contain system information and catalog number or factory order number. Interior wiring diagram, neutral wiring diagram, UL Listed label and short circuit current rating shall be displayed on the interior or in a booklet format.
9. Interiors shall be field convertible for top or bottom incoming feed. Main circuit breakers shall be vertically mounted. Sub-feed circuit breakers shall be vertically mounted. Interior leveling provisions shall be provided for flush mounted applications.

C. Main Circuit Breaker:

1. Main circuit breakers shall have an overcenter, trip-free, toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have a permanent trip unit with thermal and magnetic trip elements in each pole. Each thermal element shall be true rms sensing and be factory calibrated to operate in a 40 degrees C ambient environment. Thermal elements shall be ambient compensating above 40 degrees C.
2. Two- and three-pole circuit breakers shall have common tripping of all poles. Circuit breakers frame sizes above 100 amperes shall have a single magnetic trip adjustment located on the front of the circuit breaker that allows the user to simultaneously select the desired trip level of all poles. Circuit breakers shall have a push-to-trip button for maintenance and testing purposes.
3. Circuit breaker handle and faceplate shall indicate rated ampacity. Circuit breakers shall be UL Listed for reverse connection without restrictive line or load markings.
4. Circuit breaker escutcheon shall have international I/O markings, in addition to standard ON/OFF

markings. Circuit breaker handle accessories shall provide provisions for locking handle in the ON or OFF position where indicated on the drawings.

5. Lugs shall be UL Listed to accept solid or stranded copper and aluminum conductors. Lugs shall be suitable for 75 degree C rated wire or 90 degree C rated wire as required by the application. Lug body shall be bolted in place; snap-in designs are not acceptable.
6. The circuit breakers shall be UL Listed for use with and provided with the following accessories where indicated on the drawings: Shunt Trip, Under Voltage Trip, Ground Fault Shunt Trip, Auxiliary Switch, Alarm Switch, Mechanical Lug Kits, and Compression Lug Kits.

D. Branch Circuit Breakers:

1. Circuit breakers shall be UL Listed with amperage ratings, interrupting ratings, and number of poles as indicated on the drawings.
2. Molded case branch circuit breakers shall have bolt-on type bus connectors.
3. Circuit breakers shall have an overcenter toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have thermal and magnetic trip elements in each pole. Two- and three-pole circuit breakers shall have common tripping of all poles.
4. There shall be two forms of visible trip indication. The breaker handle shall reside in a position between ON and OFF. In addition, there shall be a red indicator appearing in the clear window of the circuit breaker housing.
5. The exposed faceplates of all branch circuit breakers shall be flush with one another.
6. Lugs shall be UL Listed to accept solid or stranded copper and aluminum conductors. Lugs shall be suitable for 75 degree C rated wire or 90 degree C rated wire as required by the application.
7. Breakers shall be UL Listed for use with the following accessories where indicated on the drawings: Shunt Trip, Auxiliary Switch, and Alarm Switch.

E. Enclosures:

1. Type 1:
   a. Boxes shall be galvanized steel constructed in accordance with UL 50 requirements.

      Galvannealed steel will not be acceptable.

   b. Boxes shall have removable endwalls with knockouts located on one end. Boxes shall have welded interior mounting studs. Interior mounting brackets are not required.
   c. Box width shall be 26-inch wide maximum.
   d. Type 1 Fronts:
      1) Front shall meet strength and rigidity requirements per UL 50 standards. Front shall have ANSI 49 gray enamel electrodeposited over cleaned phosphatized steel.
      2) Fronts shall be hinged 1-piece with door. Mounting shall be flush or surface as indicated on the drawings.
      3) Panelboards shall have fronts with concealed door hinges and mounted with trim screws. Front shall not be removable with the door locked. Doors on front shall have rounded corners and edges shall be free of burrs.
      4) Front shall have cylindrical tumbler type lock with catch and spring-loaded stainless steel door pull. All lock assemblies shall be keyed alike. One (1) key shall be provided with each lock. A clear plastic directory cardholder shall be mounted on the inside of door.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify equipment is in compliance with approved submittal drawings.

B. Examine area to receive panelboard to assure adequate clearance for panelboard installation.

C. Start work only after unsatisfactory conditions are corrected.

D. Inspect completed installation for physical damage, anchorage, and grounding.

E. Perform tests according to panelboard manufacturer's instructions.

F. Tighten bus connections and mechanical fasteners.

G. Touch-up scratched or marred surfaces to match original finish.

3.02 FIELD MEASUREMENTS

A. Field verify locations of panelboards with other trades. Adjust as required to meet field conditions and code requirements. Do not base exact panelboard locations on the contract drawings.

B. Identify conflicts with the work of other trades prior to installation of electrical equipment.

C. Adjust panelboard installation to satisfy field requirements.

3.03 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

B. Do not store exposed to weather.

C. Physically protect against damage from work of other trades.

3.04 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.
2. Start of installation shall not begin until areas are broom clean, properly lighted, exterior enclosing walls in place, exterior windows glazed, roof completely installed to prevent weather damage to equipment.

B. Cleaning:

1. Prior to turning the system over to the Owner, the system shall be physically cleaned.
2. All appearance defects shall be carefully and professionally touched up so that the equipment is in "factory new" condition.
3. At the completion of the work, remove from the building and the premises all rubbish and debris resulting from the work.

C. Grounding

1. All equipment shall be grounded in accordance with NEC, these specifications and drawings, and the equipment supplier's recommendations.

D. Install panelboards so that circuit breakers are not more than 6 feet above the finished floor or grade.

E. Where panelboards or auxiliary cabinets are flush mounted in an outside wall, insulate the enclosure back and sides with 1/2 inch rigid fiberglass insulation and vapor barrier.

F. Selectively connect branch circuits to equally balance currents in the panelboard busses.

G. For each emergency panelboard, provide an engraved red nameplate with white lettering that indicates the following:

1. "This electrical device is being fed from more than one location. Prior to servicing, all sources of power to this panel shall be disconnected."
2. This label shall comply with the requirements stated in specification section 26 05 53.

H. See Section 26 05 29 for equipment mounting.

I. Install panelboards plumb and flush with wall finishes.

J. Install panelboards such that top of panel is located at an elevation of 6-feet above finished floor elevation.

K. Provide filler plates for unused spaces in panelboards.

L. Provide typed circuit directory for each branch circuit panelboard.Revise directory to reflect circuiting changes required to balance phase loads. See Section 26 05 53.

M. Stub five empty 1-inch conduits to accessible location above ceiling and additional five empty 1-inch conduits below floor (if space exists) of each flush-mounted panelboard to allow for future expansion.

N. Measure steady state load currents at each panelboard feeder. Should the difference at any panelboard between phases exceed 10 percent, rearrange circuits in the panelboard to balance the phase loads within 10 percent. Take care to maintain proper phasing for multi wire branch circuits.

O. Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers, fusible switches, and fuses.

P. Verify that bonding jumper is properly installed in service entrance rated panels.

Q. Thoroughly clean and remove construction debris from panelboard interior and exterior.

3.05 OWNER TRAINING

A. Provide complete operator training for the Owner’s personnel.

B. Use submitted Operations & Maintenance manuals as reference during this demonstration and tour.

3.06 SPARE EQUIPMENT

A. As shown on panel schedules.

B. All spare breakers listed on panel schedules to be mounted in panelboards.

END OF SECTION

SECTION 26 27 02

MOTOR WIRING

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 - National Electric Code.

B. Conform to current National Electrical Manufactures Association (NEMA) Standards.

C. Conform to current Underwriters Laboratories (UL) Specifications and Standards.

D. Conform to National Electrical Contractors Association (NECA) “Standards of installation”.

1.03 DESCRIPTION OF WORK

A. Furnish and install complete connections and wiring to motors as indicated on the drawings and as specified herein.

B. Check the drawings and specifications of all other Sections of work for equipment and work which must be included whether or not shown on the electrical drawings, in order to provide a complete electrical installation.

C. Install all motor starters and variable frequency drives.

D. Coordinate motor installation with other Sections of work.

E. Furnish overload devices for motor starters.

1.04 RELATED WORK ELSEWHERE

A. Section 23 – Heating, Ventilation and Air Conditioning

B. Section 26, 27, and 28 – Electrical.

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts are to be new, undamaged and unused of current Manufacture.

1.08 WARRANTY

A. Installation shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - EXECUTION

2.01 EXAMINATION

A. Verify that equipment is in compliance with approved submittal drawings.

2.02 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

B. Maintain original quality and condition of equipment while it is in storage.

2.03 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.

2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.

B. Motor starters shall be furnished by the Section of work supplying the motor requiring a starter except where specifically stated otherwise on the electrical drawings.

C. Check the drawings and specifications of the other Sections to determine the requirements for motor disconnect switches and disconnects furnished by other Sections.

1. Install all required disconnect switches.

2. Provide all code required disconnect switches not specifically supplied by others.

D. Unless otherwise indicated on the drawings or elsewhere in these specifications, all motors shall be furnished by others.

E. Motors shall be set in place by others and the associated motor starters, controllers, and disconnects shall be turned over for installation.

F. Control wiring, regardless of voltage, shall be the responsibility of the Section providing the motor unless specifically indicated otherwise on the electrical drawings.

G. Furnish and size the overload protection as required for the motor load.

1. Thoroughly investigate the equipment connection schedules and other portions of the contract drawings to determine the extent of work required for connections to equipment furnished by others.

H. The National Electric code requires that a duplex receptacle be installed on the roof anytime there is roof mounted equipment installed:

1. Provide a heavy-duty weatherproof ground fault receptacle on the roof near the roof mounted air conditioning, refrigeration, and heating equipment.

2. The outlet box shall be an FS cast iron type.

3. This receptacle may be attached to an equipment supporting leg or other similar apparatus on the roof, or if none is available, shall be supported using a supporting framework.

4. The receptacle feed conduits shall be stubbed through the roof using a weatherproof boot.

5. This receptacle shall be connected to the nearest available panel and connected to a 20 amp circuit breaker unless shown otherwise on plans.

6. This receptacle shall be furnished whether or not it is explicitly shown on the drawings.

I. Final Testing:

1. Prior to energizing any equipment whether installed by this section or not:

2. First make a thorough inspection of it to make sure it has been unpacked correctly and all packing materials and supports have been removed.

3. Be responsible for assisting the equipment start up personnel to assure correct equipment connections and rotation.

END OF SECTION

SECTION 26 27 26

WIRING DEVICES

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of ANSI/NFPA 70 - National Electric Code.

B. Conform to current Underwriters Laboratories (UL) Specifications and Standards.

C. Device specific standards and requirements are included in device specifications.

1.03 DESCRIPTION OF WORK

A. Provide and install wiring devices as required on the drawings and as specified herein.

1.04 RELATED WORK ELSEWHERE

A. Section 09: Finishes.

B. Section 11: Equipment

C. Section 26, 27, and 28: Electrical

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

B. The following information shall be submitted in addition to items listed above:

1. One sample of each switch will be supplied to Electrical Engineer, for review prior to installation.
2. One sample of each receptacle will be supplied to Electrical Engineer for review prior to installation

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04 .

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts shall be new and unused of current manufacture.

C. Provide all necessary accessories required for a complete and operable system.

D. Store wiring devices and accessories in original cartons and in clean dry space; protect from weather and construction traffic.

1.08 WARRANTY

A. Equipment shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available.

All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

2.02 WALL SWITCHES

A. Switches shall be:

1. UL listed for current and voltages indicated.
2. Shall comply with NEMA standard publication WD-1, “Heavy Duty Wiring Devices”.
3. Federal Specifications Test WS-896 E.
4. UL standard 20, 943 class A (GFCI) and 498.

B. Switches shall be 20 ampere heavy duty specification grade unless noted.

C. Switches shall have provisions for back and side wiring, screw clamp type suitable for solid or stranded wire with separate green ground screw.

D. Switches shall be ivory unless noted.

E. Switches shall be made of nylon or high impact resistant material.

F. Modular switches with pigtailed terminals are allowed.

G. Supply the following:

1. Wall switch with:
   a. 20 ampere, 120/277 volt rating.
   b. Toggle handle.
   c. Single-pole, double-pole, 3-way and 4-way switches shall be available.
   d. Approved vendors are: Cooper, Hubbell Wiring, Leviton, and Pass & Seymour.

2.03 RECEPTACLES

A. Receptacles shall be:

1. UL listed for current, uses and voltages indicated.
2. Tamper resistant.
3. Shall comply with NEMA standard publication WD-1 and WD-6 standards.

B. Receptacles shall be specification grade unless noted.

C. Receptacles (with the exception of GFCI) shall have one piece brass strap.

D. Receptacles shall have provisions for back and side wiring, screw clamp type suitable for solid or stranded wire with separate green ground screw.

E. Receptacles shall be ivory unless noted.

F. Modular receptacles with pigtailed terminals are allowed.

G. Receptacles shall be made of nylon or high impact resistant material.

H. Receptacles installed in wet or damp locations shall be weather resistant.

I. Receptacles shall be supplied with face plate.

J. Supply the following:

1. Duplex Tamper Resistant NEMA 5-20R heavy duty straight blade receptacles with:
    a. 20 ampere, 120 volt rating.
    b. Standard face shape.
    c. 2-pole, 3-wire grounding
    d. Approved vendors are: Cooper, Hubbell Wiring, Leviton, and Pass & Seymour.
2. GFCI Duplex Tamper Resistant NEMA 5-20R receptacles with:
    a. 20 ampere, 125 volt rating.
    b. Standard GFCI face.
    c. Tamper resistant shutter.
    d. GFCI compatible face plate.
    e. 2-pole, 3-wire grounding.
    f. Approved vendors are: Cooper, Hubbell Wiring, Leviton, Pass & Seymour.
3. Weather Resistant GFCI Tamper Resistant Duplex NEMA 5-20R receptacles with:
    a. 20 ampere, 125 volt rating.
    b. Standard GFCI face with “WR” label.
    c. Tamper resistant shutter.
    d. GFCI compatible face plate.
    e. 2-pole, 3-wire grounding.
    f. Approved vendors are: Cooper, Hubbell Wiring, Leviton, Pass & Seymour.

2.04 PLATE COVERS

A. All plate covers shall be ivory (unless noted) smooth lexan or nylon.

B. Cast metal plates: Die cast profile, ribbed for strength, flash removed, primed with gray enamel, furnished complete with four mounting screws.

C. Steel plates: Hot dip galvanized, 1.25 oz/sq. ft. minimum.

D. Weatherproof receptacle plate shall be heavy duty type, cast aluminum with a deep cover hood to provide weatherproof protection while an attachment plug cap is inserted. Plate shall be code approved as “suitable for wet locations while in use”. Weatherproof cover

shall be provided with ¼"padlock hole. Plate must meet OSHA lockout/tagout requirements. Provide a padlock for each weatherproof receptacle cover installed on the project. All padlocks shall be keyed alike. Provide twenty spare keys for Owner's use.

E. Surface box plates: Beveled, steel, pressure formed for smooth edge to fit box.

F. Where two-gang boxes are required for single gang devices, provide special plates with device opening in one gang and second gang blank.

G. Approved vendors are: Cooper, Hubbell Wiring, Leviton, and Pass & Seymour.

PART 3 - EXECUTION

3.01 EXAMINATION:

A. Verify outlet boxes are installed at proper height.

B. Verify wall openings are neatly cut and will be completely covered by wall plates.

C. Verify floor boxes are adjusted properly, plumb and level.

D. Verify branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

E. Inspect each wiring device for defects.

F. Operate each wall switch with circuit energized and verify proper operation.

G. Verify that each receptacle device is energized.

H. Test each receptacle device for proper polarity.

I. Test each GFCI receptacle device for proper operation.

J. Test that each receptacle is properly grounded.

K. Adjust devices and wall plates to be flush and level.

3.02 FIELD MEASUREMENTS

A. Field verify proper location of all wiring devices with field conditions and adjust accordingly.

3.03 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

B. Maintain original quality and condition of equipment while it is in storage.

3.04 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.

2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.

3. Start of installation shall not begin until areas are broom clean, properly lighted, exterior enclosing walls in place, exterior windows glazed, roof completely installed to prevent weather damage to equipment.

B. Install products in accordance with manufacturer's instructions.

C. Install devices plumb and level.

D. Install switches with OFF position down.

E. Install vertical receptacles with grounding pole on top and horizontal receptacles with grounding pole to left.

F. Connect wiring device grounding terminal to outlet box with bonding jumper.

G. Install decorative plates on switch, receptacle, and blank outlets in finished areas.

H. Connect wiring devices by wrapping solid conductor around screw terminal or inserting into wire clamp.Wrapping conductor not allowed for stranded wire.

I. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.

J. Mount switches at heights shown in specification 26 05 37 unless otherwise noted. Coordinate location with architectural detail.

K. In areas where ceiling mounted receptacles and outlets are shown, the face of the receptacle or outlet is to be flush with the ceiling finish. For grid ceilings, provide proper support framing such that receptacles and outlets can be used from the ceiling below without damaging the ceiling tile.

L. Preparation:

1. Provide extension rings to bring outlet boxes flush with finished surface.

2. Clean debris from outlet boxes.

END OF SECTION

SECTION 26 27 28
CIRCUIT & MOTOR DISCONNECTS

PART 1 - GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 - National Electric Code.

B. Conform to current National Electrical Manufactures Association (NEMA) Standards.

C. Conform to current Underwriters Laboratories (UL) Specifications and Standards.

1.03 DESCRIPTION OF WORK

A. Furnish and install heavy-duty fusible type disconnect switches of types scheduled at locations shown on the drawings and as specified herein.

B. Furnish and install other disconnect switches as necessary and required with proper number of poles, voltage and enclosure type ratings as required for the application and as required by the National Electrical Code.

C. The drawings may or may not indicate disconnects. Disconnects shown on drawings shall be installed for that piece of equipment, even if the disconnect is not required by code.

D. Provide proper environmental enclosure for disconnect depending on the mounting location.

E. Provide fused or non-fused disconnect as required for proper protection of the equipment.

F. Provide all code required disconnects. Assume responsibility for reviewing equipment connections and

starting equipment provided with the equipment and determining if disconnects are required.

G. For fused disconnects, provide appropriately sized fuses for the equipment.

H. Install and wire mechanical system starters. See other portions of specifications indicating requirements for work.

1.04 RELATED WORK ELSEWHERE

A. Section 23: Heating, Ventilation and Air Conditioning

B. Section 26, 27, and 28: Electrical

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts are to be new, undamaged and unused of current Manufacture.

1.08 WARRANTY

A. Equipment shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available. All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

2.02 DISCONNECTS

A. Disconnect switches shall be heavy duty switch operated type with cover interlock and enclosed arc chamber, quick make and quick break and provision for padlocking in either the open or closed position. All heavy duty, safety switches 30 to 600A, shall be provided with Class R rejection style fuse clips. The combination rating of the heavy-duty switch and R fuse shall be 200,000 symmetrical amps and labeled as such.

B. Approved manufacturers: Square D or Eaton.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify equipment is in compliance with approved submittal drawings.

3.02 FIELD MEASUREMENTS

A. Field verify locations of disconnects with other trades. Adjust as required to meet field conditions and code requirements.

3.03 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for and store all equipment in this section.

B. Maintain original quality and condition of equipment while it is in storage.

3.04 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer’s recommendations.

2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.

3. Mount per Section 26 05 29.

B. Cleaning:

1. Prior to turning the system over to the Owner, the system shall be physically cleaned.

2. All appearance defects shall be carefully and professionally touched up so that the equipment is in "factory new" condition.

3. At the completion of the work, remove from the building and the premises all rubbish and debris resulting from the work.

C. Motor and Equipment Connections

1. Check HVAC motor schedule to ascertain if disconnect is required at motor. If disconnect is not shown on drawing and the NEC requires a disconnect, it shall be furnished and installed by this Section 26.

2. The location of motors and motor equipment shown on plans including disconnect switches and starters are approximate unless otherwise specified. Obtain the exact locations from the Engineer or from Section furnishing the equipment.

3. Other contractors will furnish combination starters for installation. Refer to the HVAC drawings to determine starter locations. If starter locations are not indicated, determine best starter location on site.

4. Where a VFD or combination starter is indicated on the HVAC motor starter schedule and has a disconnect as part of it, a separate disconnect shall not be required.

5. HVAC temperature control connections will be done by the HVAC temperature control contractor.

3.05 OWNER TRAINING

A. Provide one half hour minimum training on operation and trouble shooting each system in this section.

3.06 SPARE EQUIPMENT

A. Provide one set of spare fuses for each fusible disconnect provided.

END OF SECTION

SECTION 26 43 13
SURGE SUPPRESSION

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. American National Standards Institute.

B. Institute of Electrical and Electronic Engineers (ANSI/IEEE C62.41.1-2002, C62.41.2-2002, and C62.45- 2002).

C. IEEE Std. 1100 “The Emerald Book” Section 8.4.2.5.

D. Canadian Standards Association (CSA).

E. Federal Information Processing Standards Publication 94 (FIPS PUB 94).

F. National Fire Protection Association (NFPA 20, 70, 75, and 78).

G. Underwriters Laboratories UL 1449 most recent edition.

H. The system shall be UL listed as a complete system under UL 1449 Standard for Surge Protection Devices.

I. Underwriters Laboratories UL 96A Lightning Protection Master Label and NFPA 780 – 20kA (In)nominal discharge rating.

J. 2017 NEC 285 – 2020 NEC Article 242

1.03 DESCRIPTION OF WORK

A. Furnish and install a complete and operable surge suppression device as indicated on the drawings and as specified herein.

1.04 RELATED WORK ELSEWHERE

A. Section 26 – Electrical.

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

B. Manufacturer will provide the following type test documentation for approval:

1. Provide UL-1449, Third Edition documentation showing the unit Voltage Protection Rating (VPR) and all “Engineering Considerations”.

2. Provide third part test documentation showing nominal discharge current of 20kA. Reports will clearly show that tests were performed on a complete device including all necessary fusing, disconnects, and monitoring systems.

3. Provide third part test documentation showing that the unit will survive the specified Short Circuit Current Rating without the need for additional or external fusing.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. The following shall be provided in addition to items listed above.

1. Factory Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

2. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

3. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

4. Manufacturer must carry replacement parts.

5. Manufacturer shall have a minimum of five years experience in applying TVSS products in the application specified for this project.

1.08 WARRANTY

A. The manufacturer shall provide a full ten-year parts and five-year labor warranty for service entrance units and a five year parts warranty for branch circuit units. This warranty shall be from date of shipment against any part failure when installed in compliance with manufacturer's written instructions, UL listing requirements, and any applicable national or local electrical codes.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, and repair parts cost.

C. Due to the sensitive nature of this type of equipment, the Contractor agrees that warranty service shall be completed promptly, and that where necessary, premium freight (i.e. Fed-Ex or equal) will be used to obtain replacement parts. Service response requirements shall include the following:

1. Twenty-four (24) hour phone number.

2. Ability to restore functionality within eight (8) hours after notification on a twenty-four (24) hour basis.

D. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 PRODUCTS

2.01 DISTRIBUTION/BRANCH PANEL EQUIPMENT

A. Approved Manufacturers: Subject to compliance with requirements of the Contract Documents, acceptable manufacturers are as follows, no substitutions

1. Current Technology – TG Series

2. Raycap – RSE Series

3. Mersen – STZ Series

B. The equipment's minimum surge current capacity shall be 100kA per phase (L-N plus L-G) and 50 kA per mode (L-N, L-G, L-L and N-G).

C. The system protection shall contain a technology that utilizes a symmetrical array of metal oxide varistors (MOV) in a stacked formation.

D. Protection modes: The TVSS shall provide Line to Neutral (L□N)(Wye), Line to Ground (L□G)(Wye or Delta), Line to Line (L□L)(Delta) and Neutral to Ground (N□G)(Wye) protection.

E. UL 1449 Listed Voltage Protection Ratings (VPRs) shall not exceed the following:

VOLTAGE	L-N	L-G	N-G	MCOV
208Y/120	600V	600V	600V	150V
480Y/277	1200V	1200V	1200V	320V

F. The SPD shall be a UL Type 2 device with a 20kA I-nominal rating.

G. Service Conditions: Rate surge protective device for continuous operation under the following conditions, unless otherwise indicated:

1. MCOV: Maximum Continuous Operating Voltage of 115% or greater.
2. Operating Temperature: 30 to 120 degrees F.
3. Humidity: 0 to 85 percent, non-condensing.
4. Altitude: Less than 20,000 feet above sea level.

H. Equipment shall provide the following monitoring features: dry contacts, audible alarm with disable switch and surge counter.

2.02 CONNECTIONS

A. All parallel connections to the TVSS shall be installed per the manufacturers recommendations and shall be kept as short as possible.

2.03 ENCLOSURE

A. The enclosure shall be NEMA 12 UL94-5V rated or metal at the branch panel. All panels shall be NEMA rated for the location.

2.04 UNIT STATUS INDICATORS

A. The unit shall have an integral status circuit that monitors the operational status of all modes of protection, including Line to Neutral, Line to Ground and Neutral to Ground. No manual testing is required to confirm the integrity of the suppression and filter systems. If the unit does fail, the LED will go out.

2.05 ETHERNET SURGE PROTECTOR

A. Approved Manufacturers

1. Indoor location near PoE switch
   a. Ditek DTK-MRJPOES
   b. Axis TU8001

B. Provide power over ethernet surge protector for all exterior CAT6 data cables entering the building.

C. The unit shall have a surge rating of 20kV per pair.

D. Connection to be shielded RJ45 female in/out.

E. Data rate 10GB for PoE applications.

F. Power handling up to 144 watts.

G. UL 497B

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify surfaces and areas are ready to receive work.

B. Verify field measurements are accurate and shown on drawings.

C. Verify proper power connections are installed.

D. Proceed with installation only after unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENTS

A. Verify feeder is less than 5 feet from main bus bar for remote mounted units.

3.03 DELIVERY, STORAGE & HANDLING

A. Receive, sign for, and store all equipment in this section.

B. Maintain original quality and condition of equipment while it is in storage.

3.04 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.

2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.

3. Start of installation shall not begin until areas are broom clean, properly lighted, exterior enclosing walls in place, exterior windows glazed, roof completely installed to prevent weather damage to equipment.

B. Distribution/Branch Panel:

1. The branch panel entrance SPD will be mounted externally to the panelboard as close as possible to the panelboard neutral lug. A 30A, 3-pole breaker will be located as close as possible to the SPD location and will serve as the maintenance disconnect for the SPD. The specified branch panelboard system shall be installed with the shortest lead length possible not to exceed a foot and half (1.5') electrical feet from the power conductor(s) it is protecting, must have a grounding of 25 Ohms (NEC Article 250.56) or less and shall avoid any unnecessary or sharp bends.

C. Cleaning:

1. Prior to turning the system over to the Owner, the system shall be physically cleaned.

2. All appearance defects shall be carefully and professionally touched up so that the equipment is in “factory new” condition.

3. At the completion of the work, remove from the building and the premises all rubbish and debris resulting from the work.

3.05 OWNER TRAINING

A. Provide complete operator training for the Owner’s personnel.

END OF SECTION

SECTION 26 51 13

INTERIOR LIGHTING FIXTURES

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 - National Electric Code.

B. Conform to current Underwriters Laboratories (UL) Specifications and Standards.

C. Conform to National Fire Protection Association NFPA 101.

D. Conform to American National Standards Institute ANSI C 82.11-1993

E. Conform to current National Electrical Manufactures Association Standards.

F. Conform to current Consortium for Energy Efficiency (CEE) Standards.

1.03 DESCRIPTION OF WORK

A. Furnish and install a complete interior lighting system as required on the drawings and as specified herein.

1.04 RELATED WORK ELSEWHERE

A. Section 26, 27, and 28: Electrical

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. All materials, equipment and parts shall be new and unused of current manufacture.

C. Provide all necessary accessories required for a complete and operable system.

D. Install lamps and test fixtures for proper operation, and make all ready for use by Owner.

1.08 WARRANTY

A. Lighting fixtures shall be warranted for a period of not less than 1 year from the date of commissioning against defects in material and workmanship.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, and repair parts cost.

C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 PRODUCTS

2.01 GENERAL

A. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available.

B. All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

2.02 FIXTURES AND COMPONENTS

A. Each bidder shall make his own count of all fixtures of the types indicated on the fixture schedule and they shall be furnished as outlined hereunder.

B. Basic catalog number only is given herein for fixtures; plaster rings, fixture ends or caps, suspension units, furnish mounting brackets and/or all other auxiliary parts necessary for a complete installation. Fixture shall be furnished as required, for a full and complete installation, even though not specifically called out on plans.

C. Should any parts of the fixtures be found to be bent or not in accord with their designed position, adjust, repair or replace at once the affected items required.

2.03 LED FIXTURES

A. LED Luminaires shall meet all DesignLights Consortium® (DesignLights.org) Product Qualification Criteria. This does not require that the luminaire be listed on the DesignLights Consortium's® Qualified Products List, but they must meet the Product Qualification Criteria. The technical requirements that the luminaire shall meet for each Application Category are:

1. Minimum Light Output.
2. Zonal Lumen Requirements.
3. Minimum Luminaire Efficacy.
4. Minimum CRI.
5. L70 Lumen Maintenance.
6. Minimum Luminaire Warranty of 5 years (not pro-rated) to include LED driver and all LED components.

B. Color Consistency: LED manufacturer shall use a maximum 3-step MacAdam Ellipse binning process to achieve consistent fixture-to-fixture color for interior fixtures. Exterior fixtures shall use a maximum 5-step MacAdam Ellipse binning process.

C. Luminaire shall be mercury-free, lead-free, and RoHS compliant.

D. Luminaire shall comply with FCC 47 CFR part 15 non-consumer RFI/EMI standards.

E. Light output of the LED system shall be measured using the absolute photometry method following IES LM-79 and IES LM-80 requirements and guidelines.

F. Luminaire shall maintain 70% lumen output (L70) for a minimum of 50,000 hours.

G. Driver shall have a rated life of 50,000 hours, minimum.

H. Lumen output shall not depreciate more than 20% after 10,000 hours of use.

I. Driver and LEDs shall be furnished from a single manufacturer to ensure compatibility.

J. Luminaire Color Rendering Index (CRI) shall be a minimum of 80 for interior fixtures.

K. LED fixture shall be thermally designed as to not exceed the maximum junction temperature of the LED for the ambient temperature of the location the fixture is to be installed. Rated case temperature shall be suitable for operation in the ambient temperatures typically found for the intended installation. Exterior luminaires to operate in ambient temperatures of -20°F to 122°F (-29°C to 50°C).

L. LED driver shall have a minimum power factor (pf) of 0.9 and a maximum crest factor (cf) of 1.5 at full input power and across specified voltage range.

M. Luminaire shall operate normally for input voltage fluctuations of plus or minus 10 percent.

N. Luminaire shall have a maximum Total Harmonic Distortion (THD) of 20% at full input power and across specified voltage range.

O. Wiring connections to LED drivers shall utilize polarized quick-disconnects for field maintenance.

P. All connections to luminaires shall be reverse polarity protected and provide high voltage protection in the event connections are reversed or shorted during the installation process.

Q. All luminaires shall be provided with knockouts for conduit connections.

R. The LED lighting fixture shall carry a limited 5-year warranty minimum for LED light engine(s)/board array, and driver(s).

S. Provide all of the following data on submittals:
1. Delivered lumens
2. Input watts
3. Efficacy
4. Color rendering index.

2.04 EMERGENCY LED BATTERY PACK

A. Provide emergency LED battery pack where called out on the plans or where required by code.

B. Emergency lighting shall be provided by using a standard LED fixture equipped with an emergency LED battery pack.

C. Emergency battery shall consist of high temperature, maintenance-free, lithium iron-phosphate battery and charger and electronic circuitry contained in one metal case.

D. The system shall comply with NFPA 101 and UL 924 to provide 90 minutes of emergency operation with automatic periodic testing of the emergency lighting equipment.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine each luminaire to determine suitability for lamps specified.

B. Examine each luminaire and replace noisy ballasts.

3.02 FIELD MEASUREMENTS

A. Verify that field measurements are as shown on drawings.

3.03 DELIVERY, STORAGE AND HANDLING

A. Receive, sign for, and store all equipment in this section.

B. Maintain original quality and condition of equipment while it is in storage.

3.04 INSTALLATION

A. General:

1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.
2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.
3. Start of installation shall not begin until areas are broom clean, properly lighted, exterior enclosing walls in place, exterior windows glazed, roof completely installed to prevent weather damage to equipment.
4. Check and confirm ceiling material, recessing space and suspension system with General contractor before releasing the order for any recessed fixtures.
5. Type of ceiling material and suspension system must be submitted with fixture order to ensure delivery of proper fixtures.
6. Approval of fixture drawings by the Electrical Engineer shall not relieve this section from responsibility of ceiling confirmation.
7. Clean electrical parts to remove conductive and deleterious materials.
8. Remove dirt and debris from enclosure.
9. Clean photometric control surfaces as recommended by manufacturer.
10. Clean finishes and replace damaged equipment.
11. All fixtures to be supported from structural system, not from ceiling material.
    a. All fixtures to be supported at minimum of 4 feet-0 inches on center.
    b. All tees supporting fixtures to be secured directly to the structural system.
    c. Intermediate tees shall not be used for mounting fixtures.
    d. If fixtures occur between structural tees, fixture supports shall be installed by spanning structural tees from above, or by suspending a channel support above ceiling from building structure.
12. Recessed lay-in and non-recessed grid mounted lighting fixtures:
    a. Where lay-in light fixtures are provided, the fixture shall be securely fastened to the ceiling framing members by mechanical means; such as bolts, screws, or rivet clips identified for use with the type of ceiling framing members and fixtures being used.
    b. Grid mounted fixtures shall be mounted in the grid and attached to the grid system per NEC.
    c. Separate mounting shall be provided to the ceiling structure above.
    d. Provide a minimum of two supports per fixture per NEC.
13. Pendant suspended luminaires:
    a. All stem mounted luminaires shall be suspended with swivel hangers.
    b. Install suspended luminaires using pendants/stems supported from swivel hangers. Provide pendant/stem length required to suspend luminaire at indicated height.
14. Aircraft cable suspended luminaires:
    a. All aircraft cable luminaires to be suspended with swivel hangers.
    b. Install aircraft cable suspended luminaires using aircraft cable supported from swivel hangers.
    c. Provide aircraft cable length required to suspend luminaire at indicated height.
15. Recessed luminaries:
    a. Locate recessed ceiling luminaires as indicated on ceiling plan.
    b. Relocate light fixtures as necessary and coordinate with other mechanical trades. Coordinate installation in the field, where necessary.
    c. Install recessed luminaires using accessories and firestopping materials to meet regulatory requirements for fire rating.

d. Install clips to secure recessed grid-supported luminaires in place and separate support wires for each fixture.
e. Where recessed fixtures occur in tile ceiling, notify the ceiling contractor so fixture and tile arrangements can be coordinated.
f. Install recessed luminaires to permit removal from below.

16. Surface mounted luminaries:
    a. Install surface mounted luminaires plumb and adjust to align with building lines and with each other. Secure to prohibit movement.
17. Lighting fixtures installed in areas where there are not suspended ceilings:
    a. In areas where lighting fixtures are installed where there are not suspended ceilings furnish all mounting hardware.
    b. Continuous fixtures:
        1) In areas where lighting fixtures are mounted end-to-end in ceiling joist area, furnish support strut to solidly support the fixtures.
        2) Support strut may be B-line, Kindorf or equal.
        3) Strut shall be supported 8' on center using pendant hangers with swivels mounted on 4" square boxes.
18. Mounting hardware painting:
    a. Mounting hardware to be installed prior to the ceiling being painted.
    b. If it is not installed prior to that time, paint the support hardware. Special color requirements:
    c. Refer to fixture schedule to determine if there are special color requirements for the mounting hardware and lighting fixtures other than the ceiling finish.
19. Clearance heights:
    a. Lighting fixtures shall be mounted to maintain maximum head clearance height and that the bottom of the fixtures shall be even with the bottom of the ceiling joists.
20. Mounting locations:
    a. The fixtures shall be mounted between the joists unless otherwise shown on the floor plans.
    b. If fixtures are mounted perpendicular to joist, attach fixtures to the bottom of the joist and furnish steel support struts to the bottom of the joists for fixture support.
21. Individual fixtures:
    a. In the ceiling joist area, individual fixtures shall be supported using pendant hangers with
    b. swivels mounted on 4" square boxes.
    c. Fixtures shall be fed through one pendant end.
22. Flat ceiling spaces:
    a. The fixtures shall be mounted tight to the ceiling unless it is required to adjust the fixture
    b. height because of mechanical equipment interference.
    c. If required to adjust the fixture height because of mechanical equipment interference, support the fixtures using pendant hangers.
23. Mechanical rooms:
    a. The light fixtures in the mechanical rooms are shown to indicate number of fixtures only.
    b. Locate the lighting fixtures to coordinate with the mechanical equipment installation.
    c. If required, these fixtures may be supported using chain with a cord connection.
    d. If fixture cannot be mounted on the ceiling, lighting fixture shall be mounted on the wall using an adjustable wall bracket.

B. Install specified lamps in each luminaire.

C. Lamps shall not be factory installed.

D. Install accessories furnished with each luminaire.

E. Connect luminaires using flexible conduit.

F. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within luminaire.

G. Bond products and metal accessories to branch circuit equipment grounding conductor

H. Fixtures not to be used as a raceway.

I. Cleaning:
   1. Prior to turning the system over to the Owner, the system shall be physically cleaned.
   2. All appearance defects shall be carefully and professionally touched up so that the equipment is in “factory new” condition.
   3. At the completion of the work, remove from the building and the premises all rubbish and debris resulting from the work.

J. Final Testing:
   1. Operate each luminaire after installation.
   2. Confirm codes are met regarding daylighting and dual level controls.
   3. Confirm light controls properly operate intended fixtures.

3.05 OWNER TRAINING

A. Provide minimum of one hour training on luminaire operation and LED replacement.

3.06 SPARE EQUIPMENT

A. Provide the following spare equipment:
   1. LED Drivers:
      a. 10 of the most common type LED driver.

END OF SECTION

SECTION 27 10 00

STRUCTURED CABLING SYSTEM

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. TIA/EIA 568-B.1 – Commercial Building Telecommunications Cabling Standard, Part 1: General requirements.

B. TIA/EIA 568-B.2. Commercial Building Telecommunications Cabling Standard, Part 2: Balanced Twisted Pair Cabling Components.

C. TIA/EIA 568-B.3 Optical Fiber Cabling Components Standard.

D. TIA/EIA-569-A - Commercial Building Standards for Telecommunications Pathways and Spaces.

E. TIA/EIA-606 - Documentation.

F. TIA/EIA-607 - Commercial Building Bonding and Grounding Requirements.

G. Definitions:

1. MC: Main Communications Closet.
2. TC: Telecommunications Communications Closet.
3. MDF: Main Distribution Frame - this term is used interchangeably with MC.
4. IDF: Intermediate Distribution Frame - this term is used interchangeably with TC.
5. Access point: The outlet point for wireless LAN connection
6. Backboard (normally called a backplane): A panel, wood or metal, used to mount termination hardware, on the wall that is adjacent to the relay rack. The plywood used for the backboard shall be fire rated ¾” plywood, painted off white.
7. Backbone Cable: A facility installed between different distribution points for the purpose of connecting system distribution points.
8. Back/Outlet Box: This box is used for terminating outlets.
9. Cable Labeling System: The printed labeling system that allows labeling of each telecommunications room (TR), all relay racks, patch panels, backbone and horizontal cables (this includes the grounding bus throughout the facility) and conduit runs.
10. Cable Tray: A mechanism that allows cable to be managed.
11. Communications Pole (also called Power Pole): A raceway that provides a patch from the ceiling to the furniture or floor. This pole might be dedicated or shared between the low voltage and the electrical services.
12. Conduit Run: Multiple sections of conduit placed to run cables inside. Typically a conduit run is when you cannot see the other end from the beginning.
13. Conduit Stub: A section of conduit place to run cables up (vertically) to an exposed cable route in the ceiling area. The conduit stubs sometimes run down through the floor to the ceiling area below or to a floor jack.
14. Contractor, Electrical (EC): The contractor that is awarded the bid or contract for described work in Section 26.
15. Cross-Connect: A facility enabling termination of cables and their inter-connection.
16. Cut-In: Creating a pathway, using the wall cavity as the pathway. Used when there is no conduit in place and raceway is not required vertically up the wall.
17. Exposed: This is any location that can be seen from an occupied space when the project is complete. The exceptions will be noted in this specification.

18. Entrance Facility: This area provides the entrance point for the communication services that enter the facility from the AP or the cable service provider. Lightning protection shall be installed,
19. unless otherwise noted. This is where the outside cable type shall convert to inside cabling, unless otherwise noted. The outside cabling can be extended to the equipment room in metal conduit. It is recommended, however not required, that the lightning protection be installed as soon as the cable enters the building. The entrance facility may be shared with other services. The lightning protection shall be grounded to the building main ground (this can be done by attaching to the TMGB).
20. Firestop: Specialty material to re-establish a fire rated barrier. The material used is either cementitious or elastomeric.
21. Ground Busbar: The bar that is installed to attach the grounding conductors to. The one that is attached to the grounding electrode via a bonding conductor, typically located in the electrical switch room. Then a TBB is attached to the TMGB and allows all of the TGB's to be grounded. The one that is installed in all of the TR's is a telecommunications busbar (TGB).
22. Ground Conductor(s): The conductor that provides ground to the main grounding system, at the electrical panels is called the bonding conductor (BC). The conductor that connects the telecommunications room (TR's) back to the telecommunication main grounding bus (TMGB) is called the telecommunication bonding backbone (TBB). The grounding backbone between the TR's is called the telecommunication bonding backbone interconnecting bonding conductor (TBBIBC).
23. Horizontal Cabling: The cable used to carry the information from the workstation or end device to the least significant distribution point. For the voice and data this will be the telecommunications room. The paging, security, and CATV will be where distribution points are; normally this is in the equipment room or telecommunication room or equipment room.
24. Installer: Contractor installing the low voltage structured cabling and associated hardware.
25. J-Box: the boxes used to limit or extend distances within a conduit run or horizontal raceways. This box will be required to have the appropriate blank covers installed. The size is determined by the application and the guidelines in the TIA/EIA cabling standards.
26. J-Hook: A support device that is attached to the building structure and used to support structure cabling. The device is shaped like a J and the cables are laid in the open section of the J. There
will be a retainer installed on all j-hooks.
27. Ladder Rack: A similar device to a cable tray, however more open elements. The ladder rack is usually installed where there is a high density of cables and accessibility is higher than normal. Office Furniture: The landscape furniture used in place of fixed wall offices. Sometimes referred
to as cubicle furniture.
28. Pathway: A vertical and horizontal path, used to place telecommunication cable inside of it. Plenum: A compartment or chamber that is used as part of the air distribution system and is connected with one or more air ducts. Due to the airflow through this chamber, the cable and other materials used in this chamber are required to have a higher fire rating. Typically this airflow is the return airflow path.
29. Power Pole: A raceway that provides a path from the ceiling to the furniture or floor. This pole might be dedicated or shared between the low voltage and the electrical services. If the access pole is a dedicated pole for communication cables, it is sometimes referred to as a communication pole.
30. Pull Cord/Wire: Cord placed in a cable path to pull wire through that same path.
31. RCDD: Registered Communication Distribution Designer. A certification provided by BICSI to individuals that have met criteria via education and testing to be certified to design telecommunication systems.
32. Service Cable Path: The service cable path is a route that allows a minimum of 10' of spare cable provided at the distribution point for the purpose of having spare cable for servicing the structure. This cable will be managed by support

hardware as designated by the drawings provided. (There shall not be any service cable left at the station end other than the 6" to 10" left after the cable is terminated.)

33. Station Outlet: A device placed at the end of the horizontal cable to terminate the horizontal cable and connect the network equipment in the work area.
34. Telecommunications Contractor (TC): The contractor that is awarded the bid or contract for this work will include all the work as described in this specification, excluding the EC specified work. Telecommunications Utility: The telecommunications utility will bring their services into the equipment room as designated on the floor plans.
35. Testing: Qualifying the cable for the necessary parameters described. The testing requires electronic and hardcopy of the test results. Sometimes referred to as Acceptance Testing.
36. Utility Pole: A raceway that provides a path from the ceiling to the furniture or floor. This pole might be dedicated or shared between the low voltage and the electrical services.
37. Work Area Outlet: A device placed at the end of the horizontal cable to terminate the horizontal cable and connect the network equipment in the work area.

1.03 DESCRIPTION OF WORK

A. Provide an ethernet service to the new Maintenance Building from the existing Toilet Building. Provide CAT 6 outdoor cable to the new Maintenance Building from the existing Toilet Building. CAT 6 cable to serve switch in new data rack in the new Maintenance Building. Provide CAT 6 horizontal cable in the new Maintenance Building.

B. Furnish and install a complete and operable data cabling system as indicated on the drawings and as specified herein to include, but not be limited to: cabling, devices, racks, and cross connects.

C. Mount and connect owner furnished wireless access points (WAP's) in locations as indicated on plans as "WAP". Furnish and install data cables to this location. Mounting hardware to be supplied by owner. Assume all data outlets shown with WAP on drawings will require a WAP to be mounted. Provide male end on all WAP device outlets shown at WAP location and terminate end in data closet on standard patch panel. Coordinate WAP IP addresses prior to installation with owner.

D. Provide and install data cabling, patch panels, devices, termination and testing for IP security camera system per plans. Security camera systems will be furnished by the owner and installed by Section 27 contractor. This contractor must provide cabling, patch panels, termination, testing, labeling, and cable supports as indicated on plans. Meet with security camera vendor to coordinate cabling locations.

E. Section 26 contractor to include all Section 27 work in their bid.

1.04 RELATED WORK ELSEWHERE

A. Section 26, 27, and 28 – Electrical.

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

B. The following information shall be submitted in addition to items listed above:
1. Wiring diagram indicating wire size and type for each individual piece of equipment.
2. Complete riser diagram indicating all equipment and interconnecting components with indication of location of each device.

Complete front elevation drawing of equipment rack and exact component layout within rack.

3. All drawings must be in CAD format.
4. Cable listing for each cable installed. Indicate in spreadsheet format showing room location, head-end location, and exact labeling. Provide on each end of each outlet.
5. Reduced size floor plan drawing (11" x 17"), showing building floor plan and location of all data outlets. Each of the rooms shall be numbered and the approximate location of each data outlet shall be shown. Prior to beginning that, determine if the owner has an existing number plan sequence in place, and if so, he shall use that numbering system for this project. Include such numbering system on his submittal data.
    a. Determine the numbering method for each of the outlets. As an example; a typical space which consists of five data outlets, the suggested format is to assign a cable number (1, 2, 3, 4, etc.) for each of the data outlets or a letter (A, B, C, D, etc.).
6. As a part of the shop drawing documentation, cable numbers, data outlet numbers, and patch panel jack numbers must be assigned and shown.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04.

B. The following information shall be submitted in addition to the items listed above:
1. Wiring diagram indicating wire size and type for each individual piece of equipment.
2. Complete riser diagram indicating all equipment and interconnecting components with indication of location of each device.
3. Complete front elevation drawing of equipment rack and exact component layout within rack. Provide copy of written warranty.
4. Complete test report for all cabling. Provide test form which includes the following:
    a. Date and time of:
    b. Cable installation.
    c. Cable termination.
5. Testing report.
    a. Testing equipment used information including:
    b. Make.
    c. Model.
    d. Date of calibration.
    e. Name of person performing test and the installers.
    f. Provide in spreadsheet format. Cable number with test reporting of cable length at near- end crosstalk and attenuation. Also indicate room number of each jack.
    g. All cable shall be tested to comply with the standards that are set forth in EIA/TIA TSB 67: Transmission Performance Specifications for Field Testing of Unshielded Twisted Pair Cabling Systems. It is assumed that testing will be done for the basic length of installed horizontal cable 90', length.
    h. At each pair of each horizontal feeder cable shall test free of shorts within the pairs. Each pair shall be tested per the schedule listed in appendix 1. Cable length, in feet, shall be tested within 4% of accuracy. All testing shall be done using a cable testing unit that complies with the standards as set forth in TSB 67.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. Ensure all cables are less than 300 feet in length. Install cables in the shortest possible manner to ensure less than 300 feet is maintained.

C. A single contractor, who has at least five (5) year experience in furnishing similar data, voice, and video systems, shall supply all specified equipment and services.

D. Contractor shall employ a project manager for this project who has completed five (5) projects (similar in size) in the last 5 years and holds an active RCDD status. Credentials shall be available to the Engineer upon request.

1.08 WARRANTY

A. The data cabling system and labor for installation shall be provided with a minimum 10-year warranty from the cable manufacturer. This warranty shall cover material and workmanship.

B. The cable installed shall be a certified integrator, and shall provide cable manufacturer certified outlet components, such that the entire system is certified for the 10-year warranty. Provide a letter of verification as a part of the submittal drawings indicating that the warranty will be provided. Failure to provide this letter will cause submittal to be rejected and will require resubmittal.

C. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, and repair parts cost.

D. Submit a written warranty executed by the installer agreeing to repair or replace any data or phone cabling that fails within the warranty period.

E. During the guarantee period there shall be no charges to the Owner for service calls for guarantee work. However, when service work is required to repair items damaged by neglect, misuse, or vandalism, costs shall be reimbursed to this Contractor.

F. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 PRODUCTS

2.01 UTP DATA CABLE

A. Outlet cables: All data cable shall be:
1. Category 6.
2. 4-pair.
3. Cable color: Blue
4. Sheath rated.
5. Plenum rated.
6. For use in dry indoor applications.

B. Approved manufacturers:
1. Amp.
2. Belden.
3. Berk-Tec.
4. Comm Scope.
5. Mohawk.
6. Superior Essex.
7. General Cable.
8. West Penn.

2.02 OUTSIDE PLANT UTP DATA CABLE

A. Outdoor underground rated data cable for building-to-building ethernet connection. Cable shall be:
1. Category 6
2. 4-pair.

3. Sheath rated.
4. Suitable for outdoor underground direct burial applications.
5. Water blocked gel-filled polyethylene jacketed cable.
6. Sunlight and UV resistant black jacket.
7. Shielded with 600V rated insulation.
8. Approved manufacturers:
    a. Belden or equal.

2.03 WIRELESS ACCESS POINTS

A. Electrical contractor to provide (1) Category 6 cable to each wireless access point.

B. Wireless access points provided by owner and installed by the electrical contractor in the location indicated on the drawings. Wireless access point labeling provided and installed by the owner. Coordinate installation with the owner.

C. Provide connection to wireless access point as directed by the owner.

2.04 IP SECURITY CAMERAS

A. Electrical contractor to provide (1) Category 6 cable to each IP security camera.

B. IP security camera installed by the electrical contractor in the location indicated on the drawings.
    1. IP security camera labeling provided and installed by the owner. Coordinate installation with the owner.

C. Provide connection to IP security camera as directed by the owner.

2.05 WORK STATION COMMUNICATION OUTLETS - WALL MOUNTED

A. See floor plans for communication connector types to be included at each work station communication outlet location.

B. Each communication outlet shall consist of:
    1. Communication outlet plate.

C. Provide wall mount face plates, combination type. Face plate to include the following:
    1. Single-gang with 2-position openings for keystone type jacks.
    2. Label holders with label and clear plastic label cover.
    3. Typed overlay label affixed above each outlet position indicating the outlet number.
    4. Face plates shall be high-impact thermoplastic ivory.
    5. All empty openings shall be closed with blanks.
    6. Provide the appropriate communications device in the opening as shown on the floor plans.

D. Data outlets 568B configuration RJ-45 (Category 6). Data outlets shall be power sum rated. Outlets shall meet the following minimum requirements:
    1. Power sum next @ 100 Mhz = 40 dB.
    2. Next @ 100 Mhz = 42 dB.
    3. Attenuation @ 100 Mhz = .4 dB.
    4. Return loss @ 100 Mhz = 18 dB.
    5. Outlet Color: Blue.

2.06 PATCH PANELS CATEGORY 6

A. Patch panel shall be as follows. All patch panels shall be power sum rated and tested in a link configuration. Devices shall have same rating as station outlets.

1. 12-port keystone modular assembly.

2. Each jack shall have an associated “type-on” label for marking and shall be marked.

3. Each patch panel shall have associated with it, a rear mounted and front mounted metal wire manager unit.

4. Each patch panel shall be identified with an engraved nameplate. Plate shall be designated as: "Data Distribution Patch Panel #1". The next patch panel shall be identified as "Patch Panel #2". etc. For projects where there are more than 1 network rack, each rack shall be further identified with a label indicating that it is Data Network Rack #1, #2, etc.

2.07 DATA PATCH CABLE

A. Provide Category 6 and patch cables for the owner’s use for connecting between the patch panels and

B. the switch. Provide quantity to match terminated cabling at each patch panel.

C. Patch cable lengths to be 12” unless noted otherwise.

D. Provide patch cable for all data jacks at data rack.
   1. Patch cable color: Blue

2.08 DATA RACKS AND ACCESSORIES

A. Dual Hinge Wall Mount Enclosed Cabinet
   1. 24” high, 24” depth, 12RMU.
   2. EIA 19" spacing for equipment mounting.
   3. Provide front mounted 1U wire manager panel for routing of patch cables.
   4. Provide duplex receptacle within enclosure mounted in 4" square box and conduit connected. Mount at panel back near bottom. Circuit as shown on floor plans. Provide ground conductor in raceway.
   5. Provide patch panel assemblies as required for cables. Provide adequate length of cable to allow opening of enclosure.
   6. Provide horizontal rack mounted power strip Tripp-Lite RS-1215.
   7. Provide rack mounted ground bar Chatsworth 10610-019.
   8. Mount enclosure to allow proper front clearance for opening. Verify actual location of enclosure on site with owner and coordinate with other equipment within space.
   9. Black powder coat finish.
   10. Tempered glass door.
   11. Manufacturer:
      a. Chatsworth Cube-IT 11900-724.
         Hoffman equal.
      b. B-Line equal.

2.09 DATA EQUIPMENT LABELS

A. See specification section 26 05 53 for label materials.

B. Provide labeling per Wisconsin DOT requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify surfaces and areas are ready to receive work.

B. Verify field measurements are accurate and shown on drawings.

C. Verify proper power connections are installed.

D. Proceed with installation only after unsatisfactory conditions are corrected.

E. All wiring shall test free from grounds and shorts.

3.02 FIELD MEASUREMENTS

A. Field verify exact location for all wall racks.

3.03 DELIVERY, STORAGE & HANDLING

A. Receive, sign for, and store all equipment in this section.

B. Maintain original quality and condition of equipment while it is in storage.

3.04 INSTALLATION

A. All voice, and data jacks to be labeled at device location and origination within 6" of end of cable.

B. Provide complete testing and documentation as listed in 1.6 Operation & Maintenance Manuals.

C. General
1. The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable codes and the manufacturer's recommendations.
2. Install all materials, assemblies and equipment in strict accordance with manufacturer's recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.
3. Start of installation shall not begin until areas are broom clean, properly lighted, exterior enclosing walls in place, exterior windows glazed, roof completely installed to prevent weather damage to equipment, and written notice received from Engineer stating that these conditions exist at building site.

D. Cleaning
1. Prior to turning the system over to the Owner, the system shall be physically cleaned.
2. All appearance defects shall be carefully and professionally touched up so that the equipment is in "factory new" condition.
3. At the completion of the work, remove from the building and the premises all rubbish and debris resulting from the work.

E. Raceways
1. There shall be no sharp edges with installed materials.

F. Cable
1. All wire runs shall be continuous lengths, without splices.
2. All wiring systems shall be color coded as shown on the drawings. Green conductors shall be used only for grounding conductors, white only for neutral conductors, and black shall be reserved for 120-volt line.
3. Marker strips shall be attached to the field wiring. These markers shall not change when devices are replaced during repair or maintenance.
4. Within equipment cabinets, all wires and cables shall be contained in wire management channels and dressed and labeled in such a manner that all wires may be easily traced, and such that they do not obstruct access to components which may need to be replaced or serviced.
5. All low voltage cabling to be routed in "D" rings or in cable tray.

G. Grounding
   1. All equipment shall be grounded in accordance with NEC, these specifications and drawings, and the equipment supplier's recommendations.
      a. All equipment installed in a cabinet shall be bonded to the cabinet frame.

H. Final Testing
   1. The completed data system shall be fully tested by the Contractor.Upon completion of a successful test, certify in writing to the Owner.

I. Conduit stubs: The plan notes indicate, in a number of locations, the appropriate termination point for conduit stubs. In areas where ceilings are unfinished or ceilings are inaccessible by either height or for other reasons, the conduit stubs shall be extended to a further location to an accessible area. Lay out conduit runs such that all data installation runs are 300' or less.

J. Numbering and labeling:
   1. All communication outlets shall be provided with an overlay label indicating the outlet number.
   2. This shall be provided for all devices mounted in the communications faceplate.

K. Data and Voice cables - UTP
   1. Shall be installed in raceways and cable trays where applicable.
   2. Where cable is run in the open, it shall meet the following criteria:
      a. Routed through "J-hook" or "D-ring" system.
      b. Maintain at least a 12" separation from fluorescent or neon lighting fixtures.
      c. aintain at least a 3.3' separation from transformers, motor or other sources of electromagnetic fields.
      d. Maintain the following separation from unshielded power cables - 36".
      e. Maintain separation from under cabinet fluorescent fixtures installed on modular furniture. Do not route within 50' of arc welders.

L. Cable Termination
   1. All cable conductors shall be terminated per EIA/TIA cable terminating standards as recommended by the manufacturer of the data system.

M. Cable Support & Raceways
   1. In areas where cable trays are provided, cables shall be installed within the trays. Extend cables
   2. from trays to conduit stubs down to outlets.
   3. In areas where there are not accessible ceilings, cables shall be installed in surface mounted, non-metallic or metallic raceway as specified in specification section 26 05 34. Provide all ceiling raceways where multiple cables are run with a minimum of 50% additional space to allow for future cables to be added. If surface raceway size is shown on drawings, provide that size or larger or multiples of the size shown as required.
   4. Above accessible ceilings, a "J-hook" support system shall be used throughout the ceiling space, tunnel space, mezzanines, and other areas where cables are run. The "J" shall have flat bottom
      to eliminate single point stress on cables supported. Cables shall not be installed in a hap-hazard manner across the ceiling grid system. The following method shall be used:
      a. Conduits that are stubbed into the accessible ceiling space that are acting as cable raceways shall be extended into the nearest corridor space, or, as an option, install a sleeve through any wall separating the room from the corridor area.

b. Cables shall be routed at 90 degrees from the room to the J-hook support system in the corridor. The corridor area shall generally be defined as the area where the J-hook support system shall be installed. However, in the event that there is not adequate corridor space, the J-hook system may be moved into the adjacent rooms.

c. J-hook system shall be installed in straight lines perpendicular, right angle to the building walls. Groups of J-hooks shall be used where the single J-hook system is not adequate to support the cabling.

d. The support system shall be used up to the conduits that feed the cables into the outlet or cable distribution points. Mark the record drawings to indicate the approximate path of the support system.

e. Mark the "record drawings" to indicate the approximate path of the J-hook system. Maximum spacing between J-hooks or D-rings is to be 3'.

N. Provide and install all wall sleeves and penetrations. Any place that a wall is penetrated to route cable through the wall, the contractor shall provide a through-the-wall sleeve.

This may be PVC conduit in those areas where plenum cable is not used. It shall be steel conduit with insulated connectors on ends in those areas where plenum ceilings are used. Assume that for each door entering each room, to include in pricing, the cost of providing and installing one sleeve above all doors entering rooms. These sleeves shall be installed above the ceiling grid.

O. In those areas where there is not an existing ceiling, all system cables shall be routed through conduit, through the non-ceiling area, into an area where there is ceiling cavity. There shall be no open cables routed through ceiling areas, unless it is indicated otherwise on the drawings.

P. Cable Labeling Scheme

1. The Owner has implemented an existing data cabling and patchpanel outlet labeling scheme which the contractor will be required to follow for this project.
2. The scheme labels the cable and outlet numbers based on the telecommunications closet location, patchpanel location within that rack, and the outlet number on that patchpanel. The contractor will be required to meet with the owner's telecommunications facility coordinator prior to providing data cabling. For this project the contractor will be required to determine that prior to equipment and cable listing submittal, and from that information, provide the appropriate label numbers on the submittal documents. This submittal will be required prior to installation.

Q. Installation Of Cabling In Existing Facilities

1. The following shall be the criteria for the installation of low voltage systems in existing facilities:
   a. All cable shall be run concealed. This shall be:
   b. Above grid ceilings where grid ceilings or other ceiling structures are available.
   c. See description above for installation in ring support system or tray.
   d. In raceway; in open ceiling spaces such as mechanical rooms, shops, storage facilities.
   e. In surface raceway; in finished spaces, such as; classrooms, offices, corridors and hallways.
   f. Provide surface raceway with accompanying surface boxes on ceilings and walls.
   g. Provide and install wall sleeves and penetrations. Any place that a masonry wall is penetrated to route cable through the wall, provide a through-the-wall sleeve. This may

be PVC conduit in those areas where plenum cable is not used. It shall be steel conduit with insulated connectors on the end in those areas where plenum cable is used.

h. In those areas where through-the-floor or through-the-ceiling, or through-corridor raceways are indicated, assume the following:
   1) PVC conduit may be used in non-plenum ceilings if the raceway type is not called out on the plans. If raceway type is indicated, that type of raceway shall be provided.
   2) Steel raceways shall be terminated with insulated bushings or connectors.
   3) Where raceways are run through masonry walls, the hole through the wall shall be patched tight around the raceway using grout.
   4) Where raceways are run through existing open ceiling areas, such as stairwells, the raceway shall be installed tight to the ceiling and run parallel or perpendicular to the existing wall/ceiling angles.

i. Floor/ceiling penetrations:
   1) Provide all set up, clean up, and any moving and reinstallation of Owner's
   2) equipment as necessary for core drilling floor and ceiling penetrations. Assess the existing areas above and below, and make those penetrations in an area appropriate.
   3) Relocate any ceiling or floor equipment that may be required to make the penetrations.

j. Installation of devices in existing spaces:
   1) Move and reinstall any bookcases, desks, tables, chairs, or any other Owner's equipment that is in place that requires relocation to allow the installation of the new equipment.
      a) This should be worked out with the owner in advance of installation.
   2) Coordinate work times with owner or building tenant in occupied spaces.

R. Patch Panel Installation
1. Patch panels shall be installed and connected such that the incoming cables are grouped by rooms, spaces, and departments. It will be the contractor or his supplier's responsibility to initially meet with the Owner to determine what the requested groupings are.
2. The submittal drawings for the data system shall include front elevations of all patch panels should be shown with a number that will be associated with each patch panel jack. See system documentation for additional requirements. There shall be a listing indicating which jack is connected to which outlet; i.e. room space or department.
3. Incoming cables to patch panels shall be neatly trained and attached via cross-frame members or other method to hold cables independent of patch panel jacks.

S. Data Rack/Cabinet Installation
1. Racks and enclosures shall be bolted to the floor/wall.
2. Racks shall be bonded to grounding system.
3. Racks shall be bonded to each other using a flexible bonding strap bolted to enclosure/rack.

END OF SECTION

SECTION 28 23 00

SECURITY CAMERA SYSTEM

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. Drawings and general provisions of contract, including general and supplemental conditions and Special Provision “General Requirements for Building Construction – Section 01 specification sections, apply to work of this section.

1.02 APPLICABLE PUBLICATIONS

A. Conform to requirements of current ANSI/NFPA 70 – National Electric Code.

B. Conform to current Underwriters Laboratories (UL) Specifications and Standards.

C. Conform to current Telecommunication Industry Association (TIA/EIA).

D. Conform to current National Electrical Manufacturers Associates (NEMA) Standards.

1.03 DESCRIPTION OF WORK

A. Extend the existing Hanwha Vision security camera system to the new Maintenance Building. Provide Hanwha

B. IP cameras and all associated components. Provide camera licensing and programming.

C. Furnish and install all head-end equipment and all field equipment. Furnish and install all cabling required for a complete and operating system.

D. Electrical Contractor to provide IP security camera system cabling including but not limited to all CAT6 data cabling, patch panels, data jacks, patch cables, conduit sleeves, and 120VAC wiring as required by the camera system vendor. The IP security camera system shall be set up and installed to function as its own network with a connection to the data network to allow viewing and playback of all video from any network connected computer or through any authorized computer with an internet connection.

E. Schedule a pre-installation meeting with the Owner. Provide demo unit to demonstrate camera operation, recording equipment, and overall operation of system. This meeting is to take place and any changes be made to the specified system prior to final shop drawing submittal. The selected vendor will meet with district staff and make any final recommendations on exact camera placement and configuration for each individual site. The exact camera placement must be verified on site and the viewing area shown to and agreed upon by the owner. The camera locations may be moved from the locations shown on the plans up to 25’ to provide the best location based on field conditions and mounting options. Camera location must be finalized prior to final data cabling and raceway installation. The cost of this meeting and development time to be included in bid.

F. All necessary equipment required to meet the intent of these specifications, whether or not listed within these specifications, shall be supplied and installed to provide a complete and operational system.

1.04 RELATED WORK ELSEWHERE

A. Sections 26, 27, and 28 Electrical.

1.05 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 26 05 04.

B. The following information shall be submitted in addition to items listed above:
   1. Wiring diagram indicating wire size and type for each individual piece of equipment.
   2. Complete riser diagram indicating all equipment and interconnecting components with indication of location of each device.
   3. Complete front elevation drawing of equipment rack and exact component layout within rack.
   4. All drawings must be in CAD format.
   5. Block diagram indicating major system components and their relationship with other components.
   6. A complete riser diagram indicating all head-end and other components with wire type and wiring diagrams.
   7. Color sample in 2” x 2” format of camera housing color.

1.06 OPERATION & MAINTENANCE MANUALS

A. Submit Operations & Maintenance Manuals in accordance with Section 26 05 04.

B. The following information shall be submitted in addition to the items listed above:
   1. Wiring diagram indicating wire size and type for each individual piece of equipment.
   2. Complete riser diagram indicating all equipment and interconnecting components with indication of location of each device.
   3. Provide copy of written warranty.

1.07 QUALITY ASSURANCE

A. Provide quality assurance in accordance with Section 26 05 04.

B. The following shall be provided in addition to items listed above.
   1. Arrange pre-installation meeting.
   2. Factory Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer’s products that are similar in material, design, and extent to those indicated for this Project.
   3. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this project, whose work has resulted in construction with a record of successful in-service performance.
   4. Manufacturer’s Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation. Report results in writing.
   5. Manufacturer must carry replacement parts.

1.08 WARRANTY

A. The supporting devices and labor for installation shall be warranted for a period of not less than 1 year from the date of commissioning against defects in materials and workmanship. The date to start after substantial completion.

B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, and repair parts cost.

C. Submit a written warranty executed by the installer agreeing to repair or replace any security camera equipment that fails within the warranty period.

D. Due to the sensitive nature of this type of equipment, the Contractor agrees that warranty service shall be completed promptly, and that where necessary, premium freight (i.e. Fed-Ex or equal) will be used to obtain replacement parts. Service response requirements shall include the following:
   1. Twenty-four (24) hour phone number.
   2. Ability to restore functionality within eight (8) hours after notification on a twenty-four (24) hour basis.

E. During the guarantee period there shall be no charges to the Owner for service calls for guarantee work. However, when service work is required to repair items damaged by neglect, misuse, or vandalism, costs shall be reimbursed to this Contractor.

F. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 PRODUCTS

2.01 GENERAL

A. Manufacturers:

B. All bids shall be based on the equipment specified herein:
   1. Hanwha

C. All materials and equipment furnished shall be current production of manufacturers regularly engaged in the manufacture of such items, and for which replacement parts are available. All materials and equipment shall be new (less than 1 year old when turned over to the Owner).

D. Provide a complete and fully functional security camera system using materials and equipment of types, sizes, and rating as required to meet performance requirements.

E. Use materials and equipment that comply with referenced standards and manufacturer's standard design and construction, in accordance with published product information. Coordinate the features of all materials and equipment so they form an integrated system, with components and interconnections matched for optimum performance of specified functions. Provide all accessories necessary for a fully functioning system.

2.02 SYSTEM COMPONENTS

A. UTP Data Cable for Security Cameras
   1. 1IP security cameras provided and installed by Section 28 contractor

B. UTP Data Cable for Security Cameras
   1. Category 6 data cable provided and installed by Section 27 contractor.

C. Patch Panels for Security Cameras
   1. Category 6 24 port patch panels provided and installed by Section 27 contractor.

D. Patch Cables for Security Cameras

1. Category 6 patch cables provided and installed by Section 27 contractor. Provide (1) patch cable per camera.

E. Network Switches
1. All switches and PoE switches to be provided and installed by the owner.
2. Section 26 contractor to provide 60W PoE++ injector if required. Hanwha SPO (if required). Coordinate PoE requirements with owner.

F. Software License
1. Software license provided by Section 26 contractor. Provide Hanwha Vison camera cloud license for all new cameras.

G. Camera Type A - Outdoor
1. Hanwha QNO-8020R bullet camera.
2. 5MP (2592 x 1944) resolution.
4mm fixed lens
3. 30fps@ 5MP resolution (H.265/H.264)
Field of view (FOV)
a. 105.9º (Diagonal)
b. 79.8º (Horizontal)
c. 58.1º (Vertical)
4. F1.6 aperture ratio.
5. 1/2.8" Progressive CMOS WDR
6. True day/night 25-meter (82ft) IR LED range
ONVIF complaint
1POE
7. IP66
8. IK10
9. FIPS 140-2 level 3 certified
10. Vendor to determine camera type, lenses, and viewing angle based on each camera location and
11. owners' requirements.
12. Provide necessary mounting hardware.
13. Provide proper lens.

H. Mounting Brackets
1. Furnish and install appropriate arm, corner, recessed and surface mounted equipment based on site conditions as required.

2.03 EXAMINATION

A. Verify surfaces and areas are ready to receive work.

B. Verify field measurements are accurate and shown on drawings.

C. Proceed with installation only after unsatisfactory conditions are corrected.

2.04 FIELD MEASUREMENTS

A. Field verify proper aiming is done on all cameras.

B. Field verify proper camera lens is used to allow proper viewing.

C. Field verify surfaces where camera will be located. Verify adequate room for recessed equipment and

D. viewing angles are unobstructed. Adjust locations to satisfy field measurements.

E. Mounting heights to be coordinated with owner prior to rough-in.

2.05 DELIVERY, STORAGE & HANDLING

A. Receive, sign for, and store all equipment in this section.

B. Maintain original quality and condition of equipment while it is in storage.

2.06 INSTALLATION

A. General:
1. This project may have two separate vendors. Vendor one is responsible for cabling installation, raceway, camera mounting, and all termination and testing. Vendor two is responsible for configuration, cameras, final camera aiming, and lenses installation. Both vendors must collaborate as to the exact data cabling required at each camera location based on camera type.
2. Exact camera locations to be verified prior to final installation with owner, data cabling installer,
3. and camera supplier present.
4. Appropriate mounting arms, hangers, and supports to be provided based on final locations
5. selected, per manufacturer's requirements and site conditions.
6. Install all materials, assemblies, and equipment in strict accordance with manufacturer's
7. recommendations and instructions. Consult manufacturer for all wiring diagrams, schematics, sizes, outlets, etc. before installing.
8. Electrical contractor to have scissors lift available for use by the security camera vendor.

B. Cleaning:
1. Prior to turning the system over to the Owner, the system shall be physically cleaned.
2. All appearance defects shall be carefully and professionally touched up so that the equipment is
3. in "factory new" condition.
4. At the completion of the work, remove from the building and the premises all rubbish and debris
5. resulting from the work.

C. Raceways:
1. There shall be no sharp edges with installed materials.

D. Cable:
1. Cable type, size, and quantity to be as shown on drawings. Vendor to verify exact cable required based on the equipment and provide appropriate cable. All cables to be plenum rated.
2. All wire runs shall be continuous lengths, without splices.
3. All low voltage cabling to be routed in "J" hooks or in cable tray.

E. Grounding:
1. All equipment shall be grounded in accordance with NEC, these specifications and drawings, and

the equipment supplier's recommendations.

F. Final Testing:
1. The completed security camera system shall be fully tested in accordance with all applicable codes by the Contractor in the presence of the Owner's representative

and the Engineer. Upon completion of a successful test, the Contractor shall so certify in writing to the Owner.

2. All wiring shall test free from all grounds and shorts.

G. The Owner reserves the right to have an equipment demonstration to test the functional operation of the system supplier's proposed equipment. System supplier will be notified of any demonstration dates and times. If such demonstrations are utilized, it will be the sole judgment of the owner and specifying authority to decide whether a contractor/manufacturer meets or exceeds the specification.

H. All demonstrated equipment must be that of a standard single manufacturer and meet the same required testing and conditions that are applicable to the manufactured equipment. Custom or modified equipment that is not of standard, current manufacture cannot be demonstrated.

I. System wiring and equipment installation shall be in accordance with good engineering practices as established by the EIA and the NEC. Wiring shall meet all state and local codes.

J. Contractor shall terminate all wiring with manufacturer-approved connectors.

K. Wiring shall be UL listed, NEC and NFPA 70, Article 25 approved.

L. All programming that is required for installation shall be done. Meet with the owner to determine if there are any extraordinary programming circumstances. The supplier shall go over the entire sequence of operation of the system and explain the various programming sequences.

M. Cable Support & Raceways:

1. In areas where cable trays are provided, cables shall be installed within the trays. above accessible ceilings, a "J-hook" support system shall be used throughout the ceiling space, other areas where cables are run. The "J" shall have flat bottoms to eliminate single point stress on cables supported. Cables shall not be installed in a hap-hazard manner across the ceiling grid system. The following method shall be used:

   a. Conduits that are stubbed into the accessible ceiling space that are acting as cable raceways shall be extended into the nearest corridor space, or, as an option, the contractor shall install a sleeve through any wall separating the room from the corridor area.

   b. Cables shall be routed at 90 degrees from the room to the J-hook support system in the corridor. The corridor area shall generally be defined as the area where the J-hook support system shall be installed. However, in the event that there is not adequate corridor space, the J-hook system may be moved into the adjacent rooms.

   c. J-hook system shall be installed in straight lines perpendicular, right angle to the building walls. Groups of J-hooks shall be used where the single J-hook system is not adequate to support the cabling.

   d. Mark the "record drawings" to indicate the approximate path of the J-hook system.

   e. Maximum spacing between J-hooks or D-rings is to be 5'.

2. Provide and install all wall sleeves and penetrations. Any place that a wall is penetrated to route cable through the wall, the contractor shall provide a through-the-wall sleeve. It shall be steel conduit with insulated connectors on ends in those areas where plenum ceilings are used.

3. In those areas where there is not a lay-in ceiling, all system cables shall be routed through conduit, through the non-ceiling area, into an area where there is ceiling cavity. There shall be no open cables routed through ceiling areas, unless it is indicated otherwise on the drawings.

END OF SECTION

19. Grading and Shaping Site, Item SPV.0060.04.

A Description

This work shall consist of all excavating, filling, grading, shaping, and compacting as necessary to construct the roadway subgrade, concrete driveway, concrete sidewalk, and site, including the entire road cross-section and work along the building, as shown on the plans and as hereinafter provided.

For informational purposes, the earthwork summary below shows the approximate quantities.

Excavation Common: 218 CY
Fill: 7 CY
Fill Expansion: 30%
Waste: 210 CY

All surplus and unsuitable material shall be disposed of in accordance with Subsection 205.3.12 of the standard specifications. All work shall be in accordance with the pertinent provisions of the standard specifications. Excavation and backfilling for the building is included under the separate bid item “Ferry Operations Building”.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Grading and Shaping Site as a single unit for the contract, 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.0060.04	Grading and Shaping Site	EACH

Payment is full compensation for all operations hereinbefore specified.

Base aggregate dense, erosion control items, and excavation for building foundation will be paid for under the pertinent items provided in the contract.

20. Gate System Metal 14-FT, Item SPV.0060.05.

A Description

This shall consist of all materials, excavation backfilling, concrete, etc. to provide and construct a gate system fabricated from structural steel for external use as shown on the plans, as provided by the manufacturers specifications and as hereinafter provided.

B Material

Furnish gate, gate system, posts, fasteners, bolts, and all other miscellaneous hardware per the manufacturer’s specifications. The gate opening shall be 14-feet as shown on the plans. The tubular steel shall be a minimum of 1 ¾ - inch in diameter and a minimum of 18 gauge. The gate will be a minimum of 50-inches high as shown on the plans, and be comprised of a minimum of 6 horizontal tubes and a minimum of 4 vertical tubes. All weld locations shall be full depth, smooth and without defects. The metal of the gate system shall be powder-coated black. Final color shall be coordinated with the Owner and Engineer prior to production and installation.

C Construction

All construction shall conform to the manufacturer's recommendations including but not limited to post sizes, depth of bury, backfill, concrete (if required), hinge locations and latching system location.

D Measurement

The department will measure Gate System Metal 14-FT as each complete project 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.0060.05	Gate System Metal 14-FT	EACH

Payment is full compensation for furnishing and installing gate, concrete, powder-coat, and hardware.

21. Salvage Sign (Surveillance), Item SPV.0060.06.

A Description

This special provision describes removing, salvaging, and stockpiling signs and posts according to the pertinent provisions of standard spec 204 and as hereinafter provided. Work under this item includes removal of existing signs and posts.

B (Vacant)

C Construction

Remove and salvage existing signs and attached posts at the location shown on the plans.

Stockpile the salvaged signs and posts off to the side or at an engineer approved location in the area. Notify the Owner of where and when they can pick up the salvaged signs and posts by contacting Nick Pergande at 608-429-1025.

D Measurement

The department will measure Salvage and Stockpile Signs 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.0060.06	Salvage Sign (Surveillance)	EACH

Payment is full compensation for removing signs and posts; for stockpiling and salvaging the signs and posts.

22. Construction Staking Driveways 5640-01-87, Item SPV.0060.07.

This item consists of the contractor-performed construction staking per standard spec 650 pertaining to Construction Staking Sidewalk required to establish the horizontal and vertical position for concrete driveway item.

23. Fence Wood 6-FT, Item SPV.0090.01.

A Description

This shall consist of all materials, and labor to construct a 6-foot high wood fence as shown on the plans, as provided by the manufacturers specifications and as hereinafter provided.

B Material

The wood materials for the fence panels shall be made of red cedar. Fence boards shall be 5/8-inch thick by 6 inches wide by 6 feet high. The metal post base components shall be 12 gage (minimum) and shall be galvanized. The metal post bases shall be anchored into the concrete driveway, and be manufacturer sized to withstand sheer and moment requirements for design wind loading of a 6-foot fence. All fasteners shall be stainless steel or galvanized. Fence wood shall remain a natural red cedar color. Apply a clear coat protective treatment to the wood conforming to Standard Spec 507.2.3(2).

C (Vacant)

D Measurement

The department will measure Fence Wood 6-FT each linear foot acceptably completed, measured along the posts centerline.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.01	Fence Wood 6-FT	LF

Payment is full compensation for furnishing and installing fence panels, runners, posts, bases, anchors, protective treatment, hardware, and power-coat.

ADDITIONAL SPECIAL PROVISION 1 (ASP 1)
HIGHWAY CONSTRUCTION SKILLS TRAINING (HCST)
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 include: 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).

The Wisconsin Department of Transportation OJT program was originally established in 1995. Highway Construction Skills Training (HCST) was previously known as Transportation Alliance for New Solutions (TrANS) and underwent a name change in early 2023. HCST is an industry driven plan of services to address the outreach, preparation, placement and retention of women, minorities, and disadvantaged persons as laborers and apprentices in the highway skilled trades. Candidate preparation and contractor coordination services (OJT Supportive Services) are provided by contracted community-based organizations.

I. BASIC CONCEPTS

Training reimbursements to employing contractors for new placements, rehires or advancement to apprenticeship of Highway Construction Skills Training (HCST) graduates and employing eligible trainees in qualifying trades will be made as follows:

1) **On-the-Job Training, Item ASP.1T0G, ASP 1 HCST Graduate.** At the rate of $5.00 per hour on Federal-aid projects when HCST graduates are initially hired, or seasonally rehired, as unskilled laborers or equivalent.
   Eligibility and Duration: To the employing contractor, for up to 2,000 hours or two years, whichever comes first from the point of initial hire as a HCST placement.
   Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that __1____ HCST Graduate(s) be utilized for ___500____ hours 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 HCST Program is subsequently entered into an apprenticeship contract in a qualifying trade.
   Eligibility and Duration: To the employing contractor, for the length of time that the HCST graduate is in apprenticeship status.
   Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that __1____ HCST Apprentice(s) be utilized for ___800____ hours on this contract.

3) The maximum duration of reimbursement is two years as a HCST graduate plus time in apprentice status.

4) If a HCST 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 Department of Transportation Labor Development Specialist at the phone number listed below.

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 HCST 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 HCST 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 HCST 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 HCST 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 page 2 Dated January 2012 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 HCST graduate or a HCST apprentice. The compliance specialists utilize the information on the Certified Payrolls to track the hours accumulated by HCST Graduates and HCST 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. HCST 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. HCST 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 ensure 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 underrepresentation 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-Office of Business Opportunity & Equity Compliance (OBOEC). A request for an exemption or modification, with justification, shall be made in writing, addressed to WisDOT OBOEC - Labor Development, 141 NW Barstow Street, Suite 411, PO Box 798, Waukesha, WI 53187.

VI. PROGRAM CONTACTS

Marguerite (Maggie) Givings, Labor Development Specialist
Margueritel.Givings@dot.wi.gov | 608-789-7876

Deborah Seip, Labor Development Specialist
Deborah.Seip@dot.wi.gov | 262-548-8702

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 tied bid items. 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 At the time of bid- 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.

<u>Prior to Bid Opening- this discussion should happen as early as possible (WisDOT advertisements are released weeks prior to each Let)</u>

1. Determine DBE subcontractor's interest in quoting
2. 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.
3. Assess their interest and experience in the road construction industry by asking questions such as:

- Have you competed for other WisDOT contracts? Ratio of competed/to wins
- Have you performed on any transportation industry contracts (locally or with other states)?
- What the largest contract you've completed?
- Have you worked in the industry: apprentice, journeyman, safety, inspection etc.?
- Does this project fit into your schedule? Are you working on any contracts now?
- Have you reviewed a copy of the plans? Are you comfortable performing within the scope and quantity considerations of this contract?
- What region do you work in? Home base?
- Which line items are you considering?
- Have you read/are you familiar with WisDOT Standard Specifications? Construction Material Manual?
- Do you understand where your work fits in the project schedule, project phases?

<u>Following Bid Opening- this discussion can happen at any time</u>

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#		
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				$ 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.

Acceptance and Final Payment

Within 30 calendar days of receiving the semi-final estimate from the department, submit written certification that subcontractors at all tiers are paid in full for acceptably completed work.

Additional Special Provision 6 (ASP-6)
Modifications to the standard specifications

Make the following revisions to the standard specifications.

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107 Legal Relations and Responsibility to the Public

Add subsection 107.27 effective with the November 2024 letting.

107.27 Drones or Unmanned Aircraft Systems (UAS)

107.27.1 Licensing and Compliance

(1) Obtain and possess the necessary Federal Aviation Administration (FAA) licenses and certifications to operate drones commercially (https://www.faa.gov/uas).

(2) Comply with all FAA regulations, airspace restrictions, and local laws. Operators of small drones that are less than 55 pounds for work or business must follow all requirements as listed in Title 14, Chapter 1, Subchapter F, Part 107 of the Code of Federal Regulations (14 CFR) and obtain a remote pilot certificate (https://www.faa.gov/uas/commercial_operators).

(3) Comply with Wisconsin State Statute 942.10. Limit operations to the specific approved purpose and employ reasonable precautions to avoid capturing images of the public except those that are incidental to the project.

(4) Provide copies of waivers required for specific project conditions to the engineer prior to any flight.

107.27.2 Flight Approval, Safety, and Incident Reporting

(1) Submit information in 107.27.2(2) to obtain written drone flight approval from the engineer at least 3 business days prior to operating a drone within the right-of-way. Do not operate a drone within the right-of-way unless approved by the engineer.

(2) Drone flight application for review and approval must include:

- UAS pilot information and qualifications, images of certification
- UAS drone information and FAA tail numbers
- Max/ Min allowable flight parameters (weather)
- Specifics of flight mission: capture scope
- Estimated flight duration
- Pre-flight checklist
- Site-specific parameters
- Notification protocols - Federal/Local/Agency/Owner/Responsible in Charge
- Confirmation and verification of approved operators and hardware
- Flight plan map diagram (including launch and landing location)
- FAA-Airspace flight map classification and confirmation with graphics
- UAS incident management protocol

(3) If contractor is requesting multiple types of the same flight, a simplified request can be submitted listing weekly flight plan.

(4) Safety measures must include but are not limited to:

- Regular training and updates on drone regulations are required and must be provided upon request.
- Drones must be operated in accordance with safety guidelines, including maintaining a safe distance from people, structures, vehicles, etc.
- Conduct a pre-flight safety assessment, considering weather conditions, airspace restrictions, and potential hazards.
- Emergency procedures (e.g., drone malfunction, loss of control) must be documented and followed.
- All incidents must be reported to the engineer.

(5) If the drone has an incident during flight, report the following to the engineer:

- Incident background and details.
- FAA (14 CFR 107.9) and NTSB (49 CFR 870) notification protocol.
- Contractor internal notification protocol.

107.27.3 Insurance Requirements

(1) Maintain drone liability insurance with the following limits.

1. For drones weighing 10 pounds or less, a liability policy with a minimum limit of $1,000,000.00 is required.

2. For drones weighing more than 10 pounds and less than or equal to 20 pounds, a liability policy with a minimum limit of $2,000,000.00 is required.
3. For drones weighing more than 20 pounds, notify engineer and department will determine appropriate liability policy coverage levels based on size, use, location, and other risk factors.

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646 Pavement Markings

646.3.2.4 Black Epoxy

Replace paragraph (1) with the following effective with the November 2024 letting.

(1) Apply black epoxy in a grooved slot directly after the white marking. Apply epoxy at a wet mil thickness of 20. Apply black aggregate at or exceeding 25 pounds per gallon of epoxy. Do not apply glass beads to black epoxy.

ERRATA

204.3.1.3 Salvaging or Disposal of Materials

Replace paragraph (2) to correct link from 203.3.4 to 203.3.5 effective with the November 2024 letting.

(2) Dispose of concrete, stone, brick, and other material not designated for salvage as specified for disposing of materials under 203.3.5.

204.3.2.3 Removing Buildings

Replace paragraph (2) to correct link from 203.3.4 to 203.3.5 effective with the November 2024 letting.

(2) Buildings removed and materials resulting from building removal become the contractor's property unless the contract specifies otherwise. Dispose of unclaimed and removed material as specified for disposing of materials in 203.3.5.

335.3.2 Rubblizing

Replace paragraph (6) to correct link from 203.3.4 to 203.3.5 effective with the November 2024 letting.

(6) Remove reinforcing steel exposed at the surface by cutting below the surface and disposing of the steel as specified in 203.3.5. Do not remove unexposed reinforcing steel.

335.3.3 Compacting

Replace paragraph (2) to correct link from 203.3.4 to 203.3.5 effective with the November 2024 letting.

(2) Remove loose asphaltic patching material, joint fillers, expansion material, or other similar materials from the compacted surface. Also remove pavement or patches that have a maximum dimension greater than or equal to 6 inches that are either not well seated or projecting more than one inch. Dispose of removed material as specified in 203.3.5.

526.3.4 Construction, Backfilling, Inspection and Maintenance

Replace paragraph (3) to correct link from 203.3.4 to 203.3.5 effective with the November 2024 letting.

(3) Maintain temporary structures and approaches in place until no longer needed. Unless the engineer directs otherwise, completely remove and dispose of as specified in 203.3.5. Contractor-furnished materials remain the contractor's property upon removal.

602.3.6 Concrete Rumble Strips

Replace paragraph (5) to correct link from 203.3.4 to 203.3.5 effective with the November 2024 letting.

(5) At the end of each workday, move equipment and material out of the clear zone and sweep or vacuum the traveled way pavement and shoulder areas. Sweep away or vacuum up milling debris before opening adjacent lanes to traffic. Dispose of waste material as specified in 203.3.5; do not place on the finished shoulder surface.

604.2 Materials

Replace paragraph (1) with the following information to remove line and link for crushed aggregate effective with the November 2024 letting. The crushed aggregate gradation information for slope paving is now found in 604.2(3).

(1) Furnish materials conforming to the following:

Water	501.2
Select crushed material	312.2
Concrete	501
Reinforcement	505
Expansion joint filler	415.2.3
Asphaltic materials	455.2

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

ADDITIONAL SPECIAL PROVISION 9

Electronic Certified Payroll or Labor Data Submittal

(1) Use the department's Civil Rights Compliance System (CRCS) for projects with a LET date on or before December 2024 and AASHTOWare Project Civil Rights and Labor (AWP CRL) for projects with a LET date on or after January 2025 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 or AWP CRL. 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 or AWP CRL 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, via the online AWP Knowledge Base, or by telephone. to schedule CRCS specific training. The AWP Knowledge Base is at: https://awpkb.dot.wi.gov/

(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) For firms wishing to export payroll/labor data from their computer system, have their payroll coordinator contact:

- For CRCS: Paul Ndon at paul.ndon@dot.wi.gov. Information about exporting payroll/labor data. Not every contractor's payroll system can produce 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
- For AWP CRL: Contact AWP Support at awpsupport@dot.wi.gov. Additional information can be found in the AWP Knowledge Base at https://awpkb.dot.wi.gov/Content/crl/Payrolls-PrimesAndSubs/PayrollXMLFileCreationProcess.htm

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. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), 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 basic hourly 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. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. 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 must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. 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 classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must 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. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must 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 be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate 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 used 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) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) 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 will be sent by the contracting officer by email to *DBAconformance@dol.gov*. 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.

(4) 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 will, by email to *DBAconformance@dol.gov*, 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.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must 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.

d. *Fringe benefits not expressed as an hourly rate.* 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 may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* 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, in accordance with the criteria set forth in § 5.28, 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.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and 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.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; 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 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section 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 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must 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.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working 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; and

(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(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* 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. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, 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, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform 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 (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must 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, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must 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 this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. 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 journeyworkers 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 must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 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. a. By entering into this contract, the contractor certifies that neither it 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 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

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 watchpersons 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 and interest from the date of the underpayment. 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 watchpersons 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.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) 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

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, 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 that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

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 200.327.

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 200.327.

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.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) 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;

(2) 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

(3) 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)

b. 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).

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.

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.

BUY AMERICA PROVISION

Buy America (as documented in 88 FR 57750 (2 CFR part 184 and 200) from the Office of Management and Budget: Federal Register: Guidance for Grants and Agreements) shall be domestic products and permanently incorporated in this project as classified in the following three categories, and as noted in the Construction and Materials Manual (CMM):

1. Iron and Steel

   All iron and steel manufacturing and coating processes (from the initial melting stage through the application of coatings) 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 the iron and steel manufacturing and coating processes Buy America 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.

2. Manufactured Product

   All manufactured products (as defined in CMM 228.5) are covered under a previous waiver from 1983 and are currently exempt from Buy America.

3. Construction Material

   All construction materials (as defined in 88 FR 57750 (2 CFR part 184 and 200) and as referenced in CMM 228.5) must comply with Buy America. All manufacturing process of construction materials must occur in the United States.

88 FR 55817 (DOT-OST-2022-0124) allows a limited waiver of Buy America requirements for de minimis costs and small grants.

- The Total value of the non-compliant products is no more than the lesser of $1,000,000 or 5% of total applicable costs for the project[1]; or
- The total amount of Federal financial assistance applied to the project, through awards or subaward, is below $500,000[2]

The contractor shall take actions and provide documentation conforming to CMM 228.5 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 iron and steel, manufactured products, and construction materials conform to this Buy America provision.

Form DT4567 is available at: https://wisconsindot.gov/Documents/formdocs/dt4567.docx

Attach a list of iron or steel and construction material exemptions and their associated costs to the certification form using the Buy America Exemption Tracking Tool, available at:

https://wisconsindot.gov/hccidocs/contracting-info/buy-america-exemption-tracking-tool.xlsx

1 The de minimis public interest waiver does not apply to iron and steel subject to the requirements of 23 U.S.C. 313 on financial assistant administered by FHWA. The de minimis threshold in 23 CFR 635.410(b)(4) continues to apply for iron and steel.
2 The small grant portion of the waiver does not apply to iron, steel, and manufactured goods subject to the requirements of 49 U.S.C. 22905(a).

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.

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. Itis 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: WI20250010 02/21/2025

Superseded General Decision Number: WI20240010

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)(1).

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 $17.75 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 2025.
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 $13.30 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 2025.

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 http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025

1	02/07/2025
2	02/21/2025

BRWI0001-002 06/03/2024

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.86	27.00

BRWI0002-002 06/01/2024

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 46.60	27.01

BRWI0002-005 06/01/2024

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	$ 41.62	27.03

BRWI0003-002 06/01/2024

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.45	27.41

BRWI0004-002 06/01/2024

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
BRICKLAYER	$ 43.21	27.90

BRWI0006-002 06/01/2024

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.33	27.53

BRWI0007-002 06/01/2024

GREEN, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 39.34	28.15

BRWI0008-002 06/01/2024

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
BRICKLAYER	$ 46.16	27.33

BRWI0011-002 06/01/2024

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.45	27.41

BRWI0019-002 06/01/2024

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.18	27.68

BRWI0034-002 06/01/2024

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 40.17	27.32

CARP0068-011 05/02/2022

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	$ 41.19	27.05

CARP0231-002 06/05/2023

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
CARPENTER	$ 41.91	29.72

CARP0310-002 06/03/2024

ADAMS, ASHLAND, BAYFIELD (Eastern 2/3), FOREST, IRON, JUNEAU, LANGLADE, LINCOLN, MARATHON, ONEIDA, PORTAGE, PRICE, SHAWANO (Western Portion of the County), TAYLOR, VILAS, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
Piledriver	$ 42.44	28.44

CARP0314-001 06/05/2023

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, JEFFERSON, LAFAYETTE, RICHLAND, ROCK, SAUK, AND WALWORTH COUNTIES

	Rates	Fringes
CARPENTER	$ 38.86	27.06
Piledriver	$ 39.43	27.02

CARP0361-004 05/01/2018

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

	Rates	Fringes
CARPENTER	$ 36.15	20.43

CARP0731-002 06/03/2024

CALUMET (Eastern Portion of the County), FOND DU LAC (Eastern Portion of the County), MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
Piledriver	$ 42.44	28.44

CARP0955-002 06/03/2024

CALUMET (Western Portion of the County), FOND DU LAC (Western Portion of the County), GREEN LAKE, MARQUETTE, OUTAGAMIE, WAUPACA, WAUSHARA, AND WINNEBAGO

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1056-002 06/01/2024

ADAMS, ASHLAND, BARRON, BAYFIELD , BROWN, BUFFALO, BURNETT ,CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwy. 29 & 65), POLK (E. of Hwy. 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

MILLWRIGHT.....$ 42.00 28.85

CARP1074-002 06/03/2024

BARRON, BURNETT, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, PEPIN, PIERCE (E. of Hwy. 29 & 65), POLK (E. of Hwy. 35, 48 & 65), RUSK, SAWYER, ST. CROIX (E. of Hwy. 65), AND WASHBURN

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1143-002 06/03/2024

BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPEALEAU AND VERNON COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1146-002 06/03/2024

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, MENOMINEE, OCONTO, AND SHAWANO (Western Portion of the County) COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP2337-009 06/03/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA

	Rates	Fringes
PILEDRIVERMAN	$ 42.21	34.07

ELEC0014-002 05/26/2024

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:	$ 42.73	23.99

ELEC0014-007 05/26/2024

REMAINING COUNTIES

	Rates	Fringes

Teledata System Installer
Installer/Technician.....$ 30.27 19.11

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 06/01/2023

KENOSHA COUNTY

	Rates	Fringes
Electricians:	$ 46.05	30%+13.15

ELEC0158-002 06/01/2024

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	$ 40.25	29.75%+11.17

ELEC0159-003 05/26/2024

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	$ 48.55	25.91

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 06/02/2024

DOUGLAS COUNTY

	Rates	Fringes
Electricians:	$ 46.23	69.19%

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* ELEC0388-002 06/01/2024

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:	$ 40.19	26%+12.45

ELEC0430-002 06/01/2024

RACINE COUNTY (Except Burlington Township)

	Rates	Fringes
Electricians:	$ 48.50	26.25

ELEC0494-005 05/26/2024

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:	$ 49.48	27.34

ELEC0494-006 05/26/2024

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:	$ 42.77	24.66

ELEC0494-013 05/26/2024

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:	$ 36.03	18.87
Technician:	$ 36.03	18.87

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 05/26/2024

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:	$ 40.00	22.69

ELEC0890-003 06/01/2024

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

	Rates	Fringes
Electricians:	$ 43.65	25.95%+12.26

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 06/01/2024

	Rates	Fringes
Power Equipment Operator		
Group 1	$ 46.37	28.80
Group 2	$ 45.87	28.80
Group 3	$ 44.77	28.80
Group 4	$ 44.51	28.80
Group 5	$ 44.22	28.80
Group 6	$ 38.32	28.80

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 06/02/2024

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO

COUNTIES:

	Rates	Fringes
IRONWORKER	$ 43.02	32.32

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/02/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER	$ 44.79	32.32

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/02/2024

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	$ 42.00	31.93

IRON0498-005 06/01/2024

GREEN (S.E. 1/3), ROCK (South of Edgerton and Milton), and WALWORTH (S.W. 1/3) COUNTIES:

	Rates	Fringes
IRONWORKER	$ 46.59	48.80

IRON0512-008 04/28/2024

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 44.85	35.22

IRON0512-021 04/28/2024

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA, PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 41.19	34.68

LABO0113-002 06/03/2024

MILWAUKEE AND WAUKESHA COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 35.61	25.01
Group 2	$ 35.76	25.01
Group 3	$ 35.96	25.01
Group 4	$ 36.11	25.01
Group 5	$ 36.26	25.01
Group 6	$ 32.10	25.01

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 06/03/2024

OZAUKEE AND WASHINGTON COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 34.86	25.01
Group 2	$ 34.96	25.01
Group 3	$ 35.01	25.01
Group 4	$ 35.21	25.01
Group 5	$ 35.06	25.01
Group 6	$ 31.95	25.01

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 06/03/2024

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 34.67	25.01
Group 2	$ 34.82	25.01
Group 3	$ 35.02	25.01
Group 4	$ 34.99	25.01
Group 5	$ 35.32	25.01
Group 6	$ 31.81	25.01

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 06/03/2024

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	$ 40.57	19.45
Group 2	$ 40.67	19.45
Group 3	$ 40.72	19.45
Group 4	$ 40.92	19.45
Group 5	$ 40.77	19.45
Group 6	$ 37.20	19.45

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 06/03/2024

DANE COUNTY

	Rates	Fringes
LABORER		
Group 1	$ 40.85	19.45
Group 2	$ 40.95	19.45
Group 3	$ 41.00	19.45
Group 4	$ 41.20	19.45
Group 5	$ 41.05	19.45
Group 6	$ 37.20	19.45

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 05/06/2024

ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES

	Rates	Fringes
Painters:		
New:		
Brush, Roller	$ 36.16	26.27
Spray, Sandblast, Steel	$ 36.76	26.27
Repaint:		
Brush, Roller	$ 34.66	26.27
Spray, Sandblast, Steel	$ 35.26	26.27

PAIN0108-002 06/01/2024

RACINE COUNTY

	Rates	Fringes
Painters:		
Brush, Roller	$ 42.04	22.95
Spray & Sandblast	$ 43.04	22.95

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 06/01/2024

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Painters:		

Bridge	$ 41.39	24.92
Brush	$ 40.64	24.92
Spray & Sandblast	$ 41.39	24.92

PAIN0802-002 06/01/2024

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND, ROCK, AND SAUK COUNTIES

	Rates	Fringes
PAINTER		
Brush	$ 36.35	20.87

PREMIUM PAY:
Structural Steel, Spray, Bridges = $1.00 additional per hour.

PAIN0802-003 06/01/2024

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	$ 36.35	20.87

PAIN0934-001 06/01/2024

KENOSHA AND WALWORTH COUNTIES

	Rates	Fringes
Painters:		
Brush	$ 38.67	26.32
Spray	$ 39.67	26.32
Structural Steel	$ 38.82	26.32

PAIN1011-002 06/02/2024

FLORENCE COUNTY

	Rates	Fringes
Painters:	$ 29.95	15.89

PLAS0599-002 06/01/2024

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
Area A	$ 47.17	30.35
Area B	$ 41.62	26.34
Area C	$ 42.74	25.91
Area D	$ 43.16	25.49
Area E	$ 42.25	26.39
Area F	$ 38.98	29.67

AREA DESCRIPTIONS

AREA A: ASHLAND, BURNETT, BAYFIELD, DOUGLAS, IRON, PRICE, SAWYER, AND WASHBURN COUNTIES

AREA B: ADAMS, BARRON, BROWN, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, 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 C: BUFFALO, CRAWFORD, EAU CLAIRE, JACKSON, JUNEAU, LA CROSSE, MONROE, PEPIN, PIERCE, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

AREA D: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA E: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA F: KENOSHA AND RACINE COUNTIES

TEAM0039-001 06/01/2024

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles	$ 37.57	27.41
3 or more Axles; Euclids, Dumptor & Articulated, Truck Mechanic	$ 37.72	27.41

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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION"

"General Decision Number: WI20250015 02/21/2025

Superseded General Decision Number: WI20240015

State: Wisconsin

Construction Type: Heavy

Counties: Wisconsin Statewide.

HEAVY CONSTRUCTION PROJECTS (Excluding Tunnel, Sewer, and Water Lines).

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)(1).

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 $17.75 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 2025.
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 $13.30 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 2025.

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 http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	02/21/2025

* BOIL0107-001 01/01/2025

	Rates	Fringes
BOILERMAKER		
Boilermaker	$ 46.52	34.63

BRWI0001-002 06/03/2024

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.86	27.00

BRWI0002-002 06/01/2024

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 46.60	27.01

BRWI0002-005 06/01/2024

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	$ 41.62	27.03

BRWI0003-002 06/01/2024

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.45	27.41

BRWI0004-002 06/01/2024

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
BRICKLAYER	$ 43.21	27.90

BRWI0006-002 06/01/2024

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes

BRICKLAYER.....$ 38.33 27.53

BRWI0007-002 06/01/2024

GREEN, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 39.34	28.15

BRWI0008-002 06/01/2024

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
BRICKLAYER	$ 46.16	27.33

BRWI0009-001 06/01/2024

GREEN LAKE, MARQUETTE, OUTAGAMIE, SHAWANO, WAUPACA, WASHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.45	27.41

BRWI0011-002 06/01/2024

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.45	27.41

BRWI0013-002 06/01/2024

DANE, GRANT, IOWA, AND RICHLAND COUNTIES

	Rates	Fringes
BRICKLAYER	$ 40.17	27.32

BRWI0019-002 06/01/2024

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.18	27.68

BRWI0021-002 06/01/2024

DODGE AND JEFFERSON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 39.10	28.37

BRWI0034-002 06/01/2024

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 40.17	27.32

CARP0068-011 05/02/2022

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	$ 41.19	27.05

CARP0231-002 06/05/2023

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
CARPENTER	$ 41.91	29.72

CARP0310-002 06/03/2024

ADAMS, ASHLAND, BAYFIELD (Eastern 2/3), FOREST, IRON, JUNEAU, LANGLADE, LINCOLN, MARATHON, ONEIDA, PORTAGE, PRICE, SHAWANO (Western Portion of the County), TAYLOR, VILAS, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
Piledriver	$ 42.44	28.44

CARP0314-001 06/05/2023

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, JEFFERSON, LAFAYETTE, RICHLAND, ROCK, SAUK, AND WALWORTH COUNTIES

	Rates	Fringes
CARPENTER	$ 38.86	27.06
Piledriver	$ 39.43	27.02

CARP0361-004 05/01/2018

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

	Rates	Fringes
CARPENTER	$ 36.15	20.43

CARP0731-002 06/03/2024

CALUMET (Eastern Portion of the County), FOND DU LAC (Eastern Portion of the County), MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes

CARPENTER	$ 42.44	28.44
Piledriver	$ 42.44	28.44

CARP0955-002 06/03/2024

CALUMET (Western Portion of the County), FOND DU LAC (Western Portion of the County), GREEN LAKE, MARQUETTE, OUTAGAMIE, WAUPACA, WAUSHARA, AND WINNEBAGO

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1056-002 06/01/2024

ADAMS, ASHLAND, BARRON, BAYFIELD , BROWN, BUFFALO, BURNETT ,CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwy. 29 & 65), POLK (E. of Hwy. 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
MILLWRIGHT	$ 42.00	28.85

CARP1074-002 06/03/2024

BARRON, BURNETT, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, PEPIN, PIERCE (E. of Hwy. 29 & 65), POLK (E. of Hwy. 35, 48 & 65), RUSK, SAWYER, ST. CROIX (E. of Hwy. 65), AND WASHBURN

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1143-002 06/03/2024

BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPEALEAU AND VERNON COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1146-002 06/03/2024

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, MENOMINEE, OCONTO, AND SHAWANO (Western Portion of the County) COUNTIES

	Rates	Fringes

CARPENTER.....$ 42.44 28.44
PILEDRIVER.....$ 42.44 28.44

CARP2337-009 06/03/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA

	Rates	Fringes
PILEDRIVERMAN	$ 42.21	34.07

CARP2337-010 06/03/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA

	Rates	Fringes
MILLWRIGHT	$ 42.31	32.21

ELEC0014-002 05/26/2024

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:	$ 42.73	23.99

ELEC0014-007 05/26/2024

REMAINING COUNTIES

	Rates	Fringes
Teledata System Installer		
Installer/Technician	$ 30.27	19.11

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 06/01/2023

KENOSHA COUNTY

	Rates	Fringes
Electricians:	$ 46.05	30%+13.15

ELEC0158-002 06/01/2024

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	$ 40.25	29.75%+11.17

ELEC0159-003 05/26/2024

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	$ 48.55	25.91

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 06/02/2024

DOUGLAS COUNTY

	Rates	Fringes
Electricians:	$ 46.23	69.19%

* ELEC0388-002 06/01/2024

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:	$ 40.19	26%+12.45

* ELEC0430-002 06/01/2024

RACINE COUNTY (Except Burlington Township)

	Rates	Fringes
Electricians:	$ 48.50	26.25

ELEC0494-005 05/26/2024

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:	$ 49.48	27.34

ELEC0494-006 05/26/2024

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:	$ 42.77	24.66

ELEC0494-013 05/26/2024

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	$ 36.03	18.87
Technician	$ 36.03	18.87

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 05/26/2024

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:	$ 40.00	22.69

ELEC0890-003 06/01/2024

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

	Rates	Fringes
Electricians:	$ 43.65	25.95%+12.26

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

ENGI0139-001 06/01/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Power Equipment Operator		
Group 1	$ 52.66	27.60
Group 2	$ 52.16	27.60
Group 3	$ 51.66	27.60
Group 4	$ 50.37	27.60
Group 5	$ 46.39	27.60
Group 6	$ 41.24	27.60

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, Pedestal Tower Cranes and Derricks with or w/o attachments with a lifting capacity of over 100 tons; or Cranes, Tower Cranes, Pedestal Tower Cranes and Derricks with boom, leads, and/or jib lengths measuring 176 feet or longer; Self-Erecting Tower Cranes over 4000 lbs lifting capacity; All Cranes with Boom Dollies; Boring Machines (directional); Master Mechanic. $0.50 additional per hour per 100 tons or 100 ft of boom over 200 ft or lifting capacity of crane over 200 tons to a maximum of 300 tons or 300 ft. Thereafter an increase of $0.01 per ft or ton, whichever is greater.

GROUP 2: Cranes, Tower Cranes, Pedestal Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; or Cranes, Tower Cranes Portable Tower Cranes, Pedestal Tower Cranes and Derricks with boom, leadsand/or jib lengths measuring 175 feet or less; Backhoes (excavators) 130,000 lbs and over; Caisson Rigs; Pile Drivers; Boring Machines (vertical or

horizontal), Versi-Lift, Tri-Lift, Gantry 20,000 lbs & over.

GROUP 3: Backhoe (excavator) under 130,000 lbs;Self-erecting Tower Crane 4000 lbs & under lifting capacity;Traveling Crane (bridge type); Skid Rigs; Dredge Operator; Mechanic; Concrete Paver (over 27E); Concrete Spreader and Distributor; Forklift/ Telehandler (machinery- moving / steel erection); Hydro Blaster, 10,000 psi and over

GROUP 4: Material Hoists; Stack Hoists; Hydraulic Backhoe (tractor or truck mounted); Hydraulic Crane, 5 tons or under (tractor or truck mounted); Hoist (tuggers 5 tons & over); Hydro-Excavators/Daylighters; Concrete Pumps Rotec type Conveyors; Tractor/Bulldozer/End Loader (over 40 hp); Motor Patrol; Scraper Operator; Sideboom; Straddle Carrier; Welder; Bituminous Plant and Paver Operator; Roller over 5 tons; Rail Leveling Machine (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler; Rotary Drill Operator and Blaster; Percussion Drill Operator; Air Track Drill and/or Hammers; Gantrys (under 20,000 lbs); Tencher (wheel type or chain type having 8 inch or larger bucket); Milling Machine; Off-Road Material Haulers.

GROUP 5: Backfiller; Concrete Auto Breaker (large); Concrete Finishing Machines (road type); Rubber Tired Roller; Concrete Batch Hopper; Concrete Conveyor Systems; Grout Pumps; Concrete Mixers (14S or over); Screw Type Pumps and Gypsum Pumps; Tractor, Bulldozer, End Loader (under 40 hp); Trencher (chain type, bucket under 8 inch); Industrial Locomotives; Rollers under 5 tons; Stump Grinder/Chipper (Large); Timber Equipment; Firemen (pile drivers and derricks); Personnel Hoist, Telehandler over 8000 lbs; Robotic Tool Carrier with or without attachments

GROUP 6: Tampers - Compactors (riding type); Assistant Engineer; A-Frames and Winch Trucks; Concrete Auto Breaker; Hydrohammers (small); Brooms and Sweepers; Hoist (tuggers under 5 tons); Boats (Tug, Safety, Work Barges, Launch); Shouldering Machine Operator; Prestress Machines; Screed Operator; Stone Crushers and Screening Plants; Screed Operators (milling machine), Farm or Industrial Tractor Mounted Equipment; Post Hole Digger; Fireman (asphalt plants); Air Compressors over 400 CFM; Generators, over 150 KW; Augers (vertical and horizontal); Air, Electric, Hydraulic Jacks (slipform); Skid Steer Loaders (with or without attachments); Boiler Operators (temporary heat); Refrigeration Plant/Freeze Machines; Power Pack Vibratory/Ultra Sound Drivers and Extractors; Welding Machines; Heaters (mechanical); Pumps; Winches (small electric); Oiler and Greaser; Rotary Drill Tender; Conveyor; Forklifts/Telehandler 8000 lbs & under; Elevators: Automatic Hoists; Pumps (well points); Combination Small Equipment Operators

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ENGI0139-003 06/03/2024

REMAINING COUNTIES

	Rates	Fringes
Power Equipment Operator		
Group 1	$ 48.78	27.14
Group 2	$ 47.53	27.14
Group 3	$ 44.23	27.14

Group 4	$ 43.70	27.14
Group 5	$ 41.63	27.14
Group 6	$ 40.10	27.14

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; Cranes, Tower Cranes, and Derricks with boom, leads and/or jib lengths 176 ft or longer.

GROUP 2: Backhoes (Excavators) weighing 130,00 lbs and over; Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; Cranes, Tower Cranes, and Derricks with boom, leads, and/or jib lengths 175 ft or less; Caisson Rigs; Pile Driver

GROUP 3: Backhoes (Excavators) weighing under 130,000 lbs; Travelling Crane (bridge type); Milling Machine; Concrete Paver over 27 E; Concrete Spreader and Distributor; Concrete Laser Screed; Concrete Grinder and Planing Machine; Slipform Curb and Gutter Machine; Boring Machine (Directional); Dredge Operator; Skid Rigs; over 46 meter Concrete Pump.

GROUP 4: Hydraulic Backhoe (tractor or truck mounted); Hydraulic Crane, 10 tons or less; Tractor, Bulldozer, or End Loader (over 40 hp); Motor Patrol; Scraper Operator; Bituminous Plant and Paver Operator; Screed-Milling Machine; Roller over 5 tons; Concrete pumps 46 meter and under; Grout Pumps; Rotec type machine; Hydro Blaster, 10,000 psi and over; Rotary Drill Operator; Percussion Drilling Machine; Air Track Drill with or without integral hammer; Blaster; Boring Machine (vertical or horizontal); Side Boom; Trencher, wheel type or chain type having 8 inch or larger bucket; Rail Leveling Machine (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler; Straddle Carrier; Material Hoists; Stack Hoist; Man Hoists; Mechanic and Welder; Off Road Material Haulers.

GROUP 5: Tractor, Bulldozer, or Endloader (under 40 hp); Tampers -Compactors, riding type; Stump Chipper, large; Roller, Rubber Tire; Backfiller; Trencher, chain type (bucket under 8 inch); Concrete Auto Breaker, large; Concrete Finishing Machine (road type); Concrete Batch Hopper; Concrete Conveyor Systems; Concrete Mixers, 14S or over; Pumps, Screw Type and Gypsum); Hydrohammers, small; Brooms and Sweeeprs; Lift Slab Machine; Roller under 5 tons; Industrial Locomotives; Fireman (Pile Drivers and Derricks); Pumps (well points); Hoists, automatic; A-Frames and Winch Trucks; Hoists (tuggers); Boats (Tug, Safety, Work Barges and Launches); Assistant Engineer

GROUP 6: Shouldering Machine Operator; Farm or Industrial Tractor mounted equipment; Post Hole Digger; Auger (vertical and horizontal); Skid Steer Loader with or without attachments; Robotic Tool Carrier with or without attachments; Power Pack Vibratory/Ultra Sound Driver and Extractor; Fireman (Asphalt Plants); Screed Operator; Stone Crushers and Screening Plants; Air, Electric, Hydraulic

Jacks (Slip Form); Prestress Machines; Air Compressor, 400 CFM or over; Refrigeration Plant/Freese Machine; Boiler Operators (temporary heat); Forklifts; Welding Machines; Generators; Pumps over 3""; Heaters, Mechanical; Combination small equipment operator; Winches, small electric; Oiler; Greaser; Rotary Drill Tender; Conveyor; Elevator Operator

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IRON0008-002 06/02/2024

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:

	Rates	Fringes
IRONWORKER	$ 43.02	32.32

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/02/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER	$ 44.79	32.32

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/02/2024

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	$ 42.00	31.93

IRON0512-008 04/28/2024

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 44.85	35.22

IRON0512-021 04/28/2024

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA,

PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 41.19	34.68

LABO0113-002 06/03/2024

MILWAUKEE AND WAUKESHA COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 35.61	25.01
Group 2	$ 35.76	25.01
Group 3	$ 35.96	25.01
Group 4	$ 36.11	25.01
Group 5	$ 36.26	25.01
Group 6	$ 32.10	25.01

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 06/03/2024

OZAUKEE AND WASHINGTON COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 34.86	25.01
Group 2	$ 34.96	25.01
Group 3	$ 35.01	25.01
Group 4	$ 35.21	25.01
Group 5	$ 35.06	25.01
Group 6	$ 31.95	25.01

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 06/03/2024

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 34.67	25.01
Group 2	$ 34.82	25.01
Group 3	$ 35.02	25.01
Group 4	$ 34.99	25.01
Group 5	$ 35.32	25.01
Group 6	$ 31.81	25.01

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 06/03/2024

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	$ 40.57	19.45
Group 2	$ 40.67	19.45
Group 3	$ 40.72	19.45
Group 4	$ 40.92	19.45
Group 5	$ 40.77	19.45
Group 6	$ 37.20	19.45

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 06/03/2024

DANE COUNTY

	Rates	Fringes
LABORER		
Group 1	$ 40.85	19.45
Group 2	$ 40.95	19.45
Group 3	$ 41.00	19.45
Group 4	$ 41.20	19.45
Group 5	$ 41.05	19.45
Group 6	$ 37.20	19.45

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 05/06/2024

ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES

	Rates	Fringes
Painters:		
New:		
Brush, Roller	$ 36.16	26.27
Spray, Sandblast, Steel	$ 36.76	26.27
Repaint:		
Brush, Roller	$ 34.66	26.27
Spray, Sandblast, Steel	$ 35.26	26.27

PAIN0108-002 06/01/2024

RACINE COUNTY

	Rates	Fringes
Painters:		
Brush, Roller	$ 42.04	22.95
Spray & Sandblast	$ 43.04	22.95

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 06/01/2024

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes

Painters:
     Bridge.....$ 41.39 24.92
     Brush.....$ 40.64 24.92
     Spray & Sandblast.....$ 41.39 24.92

PAIN0802-002 06/01/2024

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND, ROCK, AND SAUK COUNTIES

	Rates	Fringes
PAINTER		
Brush	$ 36.35	20.87

PREMIUM PAY:
  Structural Steel, Spray, Bridges = $1.00 additional per hour.

PAIN0802-003 06/01/2024

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	$ 36.35	20.87

PAIN0934-001 06/01/2024

KENOSHA AND WALWORTH COUNTIES

	Rates	Fringes
Painters:		
Brush	$ 38.67	26.32
Spray	$ 39.67	26.32
Structural Steel	$ 38.82	26.32

PAIN1011-002 06/02/2024

FLORENCE COUNTY

	Rates	Fringes
Painters:	$ 29.95	15.89

PLAS0599-002 06/01/2024

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
Area A	$ 47.17	30.35
Area B	$ 41.62	26.34
Area C	$ 42.74	25.91
Area D	$ 43.16	25.49
Area E	$ 42.25	26.39
Area F	$ 38.98	29.67

AREA DESCRIPTIONS

AREA A: ASHLAND, BURNETT, BAYFIELD, DOUGLAS, IRON, PRICE, SAWYER, AND WASHBURN COUNTIES

AREA B: ADAMS, BARRON, BROWN, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, 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 C: BUFFALO, CRAWFORD, EAU CLAIRE, JACKSON, JUNEAU, LA CROSSE, MONROE, PEPIN, PIERCE, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

AREA D: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA E: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA F: KENOSHA AND RACINE COUNTIES

PLUM0011-003 05/06/2024

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
PLUMBER	$ 49.32	27.18

PLUM0075-002 06/01/2024

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
PLUMBER	$ 57.60	26.90

PLUM0075-004 06/01/2024

DODGE (Watertown), GREEN, JEFFERSON, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
PLUMBER	$ 57.60	26.90

PLUM0075-009 06/01/2024

COLUMBIA, DANE, IOWA, MARQUETTE, RICHLAND AND SAUK COUNTIES

	Rates	Fringes
PLUMBER	$ 58.12	26.34

PLUM0111-007 06/03/2024

MARINETTE COUNTY (Niagara only)

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 43.90	27.53

PLUM0118-002 06/24/2024

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
Plumber and Steamfitter	$ 54.60	26.12

PLUM0400-003 05/31/2024

ADAMS,BROWN, CALUMET, DODGE (except Watertown), DOOR, FOND DU LAC, GREEN LAKE,KEWAUNEE, MANITOWOC, MARINETTE (except Niagara), MENOMINEE, OCONTO, OUTAGAMIE, SHAWANO, SHEBOYGAN, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 49.00	21.84

PLUM0434-002 06/16/2024

BARON, BUFFALO, CHIPPEWA, CLARK, CRAWFORD, DUNN, EAU CLAIRE, FLORENCE, FOREST, GRANT, JACKSON, JUNEAU, LA CROSSE, LANGLADE, LINCOLN, MARATHON, MONROE, ONEIDA, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RUSK, ST. CROIX, TAYLOR, TREMPEALEAU, VERNON, VILAS, AND WOOD COUNTIES

	Rates	Fringes
PIPEFITTER	$ 49.24	24.38

PLUM0601-003 06/03/2024

Zone 1

DODGE (Watertown), GREEN, JEFFERSON, LAFAYETTE, MILWAUKEE, OZAUKEE, ROCK, WASHINGTON AND WAUKESHA COUNTIES

	Rates	Fringes
PIPEFITTER	$ 55.67	31.19

PLUM0601-009 06/03/2024

COLUMBIA, DANE, IOWA, MARQUETTE, RICHLAND AND SAUK COUNTIES

	Rates	Fringes
PIPEFITTER	$ 56.88	30.01

TEAM0039-002 06/01/2024

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axle Trucks	$ 37.57	27.41
3 or more axles; Euclids or Dumptor, Articulated		

Truck, Mechanic.....$ 37.72 27.41

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* SUWI2011-001 11/16/2011

	Rates	Fringes
WELL DRILLER.....$ 16.52 **		

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.75) or 13658 ($13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union

whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were

adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION"

"General Decision Number: WI20250011 02/28/2025

Superseded General Decision Number: WI20240011

State: Wisconsin

Construction Type: Building

Counties: Adams, Ashland, Barron, Bayfield, Buffalo, Burnett, Clark, Columbia, Crawford, Dodge, Door, Dunn, Florence, Fond Du Lac, Forest, Grant, Green, Green Lake, Iowa, Iron, Jackson, Jefferson, Juneau, Kewaunee, Lafayette, Langlade, Lincoln, Manitowoc, Marinette, Marquette, Menominee, Monroe, Oconto, Oneida, Pepin, Polk, Portage, Price, Richland, Rusk, Sauk, Sawyer, Shawano, Taylor, Trempealeau, Vernon, Vilas, Walworth, Washburn, Waupaca, Waushara and Wood Counties in Wisconsin.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

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)(1).

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 $17.75 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 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the	. Executive Order 13658 generally applies to the contract.

contract is not renewed or extended on or after January 30, 2022:	. The contractor must pay all covered workers at least $13.30 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 2025.

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 http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	02/28/2025

ASBE0019-002 06/01/2024

COLUMBIA, CRAWFORD, DODGE, GRANT, GREEN, IOWA, JEFFERSON, JUNEAU, LAFAYETTE, MARQUETTE, MONROE, RICHLAND, SAUK, VERNON, AND WALWORTH COUNTIES

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems. Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems whether they contain asbestos or not)....$	43.48	37.50

ASBE0034-005 06/01/2024

BARRON, BUFFALO, DUNN, PEPIN, AND POLK COUNTIES

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials; protective coatings, coverings, and finishes to all types of mechanical systems. Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems whether they contain asbestos or not)	$ 45.65	36.18

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* ASBE0049-003 05/06/2024

ASHLAND, BAYFIELD, BURNETT, IRON, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials; protective coverings, coatings, and finishes to all types of mechanical systems. Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems whether they contain asbestos or not)	$ 38.62	30.45

ASBE0127-002 06/01/2024

ADAMS, CLARK, DOOR, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, JACKSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARINETTE, MENOMINEE, OCONTO, ONEIDA, PORTAGE, PRICE, RUSK, SHAWANO, TAYLOR, TREMPEALEAU, VILAS, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
Heat and Frost Insulator (Includes the application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems; and the application of firestopping material in walls, floors, ceilings. Includes preparation, wetting, stripping, removal, scrapping vacuuming, bagging and disposing of all insulation materials from mechanical systems whether they contain asbestos or not)	$ 43.24	28.56

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* BOIL0107-001 01/01/2025

	Rates	Fringes
BOILERMAKER		
Boilermaker	$ 46.52	34.63

BRWI0001-003 06/03/2024

CRAWFORD,JUNEAU, MONROE,TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
Bricklayer & Tile Setter	$ 38.86	27.00

BRWI0002-003 06/01/2024

ASHLAND, BURNETT, IRON, WASHBURN

	Rates	Fringes
BRICKLAYER		
Bricklayer, Tile Setter	$ 46.60	27.01
Cement Mason/Concrete Finisher	$ 44.12	27.01

BRWI0002-004 06/01/2024

BAYFIELD COUNTY

	Rates	Fringes
BRICKLAYER		
Bricklayer & Tile Setter	$ 46.60	27.01

BRWI0003-001 06/01/2024

DOOR, KEWAUNEE, FLORENCE, FOND DU LAC, GREEN LAKE, MANITOWOC, MARINETTE, MARQUETTE, OCONTO, SHAWANO, WAUPACA, AND WAUSHARA COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason, Tile Setter	$ 38.45	27.41

BRWI0004-003 06/01/2024

WALWORTH COUNTY

	Rates	Fringes
BRICKLAYER	$ 43.21	27.90
CEMENT MASON/CONCRETE FINISHER	$ 38.44	27.90
TILE SETTER	$ 37.09	27.90

BRWI0006-001 06/01/2024

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MENOMINEE, ONEIDA, PORTAGE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer,Cement Mason,Tile Setter	$ 38.33	27.53

BRWI0006-004 06/01/2024

PRICE COUNTY

	Rates	Fringes
Bricklayer & Tile Setter	$ 38.33	27.53

BRWI0007-003 06/01/2024

GREEN AND LAFAYETTE COUNTIES

	Rates	Fringes
Bricklayer & Tile Setter	$ 39.34	28.15

BRWI0013-003 06/01/2024

GRANT, IOWA, AND RICHLAND COUNTIES

	Rates	Fringes
Bricklayer	$ 40.17	27.32
Tile Layer	$ 37.14	27.94

BRWI0019-004 06/01/2024

BARRON, BURNETT (Southern half), DUNN, PEPIN, POLK, RUSK, AND WASHBURN (Southern half) COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason, Tile Layer	$ 38.18	27.68

BRWI0019-005 06/01/2024

SAWYER COUNTY

	Rates	Fringes
Bricklayer & Tile Setter	$ 38.18	27.68

BRWI0021-001 06/01/2024

DODGE AND JEFFERSON COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason, Tile Layer	$ 39.10	28.37

BRWI0034-001 06/01/2024

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason, Tile Layer	$ 40.17	27.32

CARP0068-013 05/02/2022

BURNETT (West of highway 48) AND POLK(West of Highways 35, 48 & 65) COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical work)	$ 41.51	27.32

CARP0310-007 06/01/2024

ADAMS, BAYFIELD (Eastern 2/3), FOREST, IRON, ONEIDA, PORTAGE, PRICE, SHAWANO (Western Portion of the County), TAYLOR, VILAS, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work)	$ 40.44	28.43
Piledriverman	$ 40.44	28.43

CARP0310-008 06/01/2024

ASHLAND COUNTY

	Rates	Fringes
CABINET INSTALLER (Including Drywall Hanging & Acoustical Work)	$ 40.44	28.43

CARP0314-006 06/05/2023

COLUMBIA, DODGE, GRANT, GREEN, IOWA, JEFFERSON, LAFAYETTE, RICHLAND, SAUK, AND WALWORTH COUNTIES

	Rates	Fringes

CARPENTER (Including Drywall
Hanging, Acoustical Work).....$ 38.86 27.06
Piledriverman.....$ 39.43 27.02

CARP0361-006 05/03/2021

BAYFIELD COUNTY (West of Hwy 63)

	Rates	Fringes
Carpenters: (Including Drywall Hanging, Acoustical work).....	$ 39.71	26.01

CARP0731-006 06/01/2024

FOND DU LAC (Eastern Portion of the County) AND MANITOWOC COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work).....	$ 40.44	28.43
Piledriverman.....	$ 40.44	28.43

CARP0955-004 06/01/2024

FOND DU LAC (Western Portion of the County), GREEN LAKE, MARQUETTE, WAUPACA, AND WAUSHARA COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work).....	$ 40.44	28.43
Piledriverman.....	$ 40.44	28.43

CARP1056-004 06/01/2024

ADAMS, ASHLAND, BARRON, BAYFIELD (Eastern 2/3), BUFFALO, BURNETT, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, PEPIN, POLK (E. of Hwy. 35, 48 & 65), PORTAGE, PRICE, RICHLAND, RUSK, SAUK, SAWYER, SHAWANO, TAYLOR, TREMPEALEAU, VERNON, VILAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
MILLWRIGHT	$ 42.00	28.85

CARP1074-009 06/01/2024

BARRON, BURNETT (East of Hwy 48), CLARK, DUNN, POLK (East of Hwy 35, 48, 65), RUSK, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work)	$ 40.44	28.43
Piledriverman	$ 40.44	28.43

CARP1143-006 06/01/2024

BUFALO, CRAWFORD, JACKSON, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work)	$ 40.44	28.43
Piledriverman	$ 40.44	28.43

CARP1146-006 06/01/2024

DOOR, FLORENCE (Except area bordering Michigan), KEWAUNEE, MARINETTE (Except N.E. corner), MENOMINEE, OCONTO, AND SHAWANO (Western Portion of the County) COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work)	$ 40.44	28.43
Piledriverman	$ 40.44	28.43

CARP1348-006 05/01/2020

BAYFIELD COUNTY (Western 1/3)

	Rates	Fringes

MILLWRIGHT.....$ 35.75 21.30

ELEC0014-001 05/26/2024

ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (Except Colby, Fremont, Lynn, Maryville, Sherman, Sherwood, Unity), CRAWFORD, DUNN, GRANT, IRON, JACKSON, MONROE, PEPIN, POLK, PRICE, RICHLAND, RUSK, SAWYER, TAYLOR, TREMPEALEAU, VERNON, AND WASHBURN COUNTIES

	Rates	Fringes
ELECTRICIAN.....	$ 42.73	23.99

ELEC0014-005 05/26/2024

	Rates	Fringes
Teledata System Installer		
Installer/Technician.....	$ 30.27	19.11

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).

ELEC0158-007 06/01/2024

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
Electricians:.....	$ 40.25	29.75%+11.17

ELEC0159-001 05/26/2024

COLUMBIA, DODGE (West of Hwy 26 except Chester and Emmet Twps), GREEN LAKE COUNTY (Except Townships of Berlin, Seneca & St. Marie), IOWA, MARQUETTE COUNTY (Except Townships of Neshkoka,

Crystal Lake, Newton, and Springfield), AND SAUK COUNTIES

	Rates	Fringes
Electricians:	$ 48.55	25.91

ELEC0219-006 06/01/2019

FLORENCE COUNTY (Townships of Aurora, Commonwealth, Fern, Florence and Homestead) AND MARINETTE COUNTY (Township of Niagara)

	Rates	Fringes
ELECTRICIAN		
Electrical contracts over $180,000	$ 33.94	21.80
Electrical contracts under $180,000	$ 31.75	21.73

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* ELEC0388-004 06/01/2024

ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, 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
ELECTRICIAN	$ 40.19	26%+12.45

ELEC0494-010 05/26/2024

DODGE COUNTY (Area East of Hwy 26 including all of Chester Township, but excluding Emmet Township), FOND DU LAC (except Waupun), AND MANITOWOC (Schleswig) COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 42.77	24.66

ELEC0494-014 05/26/2024

DODGE (Area East of Hwy 26 including Chester Twp but excluding Emmet Twp), FOND DU LAC (Except Waupun), AND MANITOWOC (Schleswig) COUNTIES

	Rates	Fringes
Sound & Communications		
Installer	$ 36.03	18.87
Technician	$ 36.03	18.87

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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ELEC0577-001 05/26/2024

GREEN LAKE (N. Part including Twps of Berlin, St Marie, and Seneca), MARQUETTE (N. part including Twps of Crystal Lake, Neshkoro, Newton, and Springfield), WAUPACA, AND WAUSHARA COUNTIES,

	Rates	Fringes
ELECTRICIAN	$ 40.00	22.69

ELEC0890-005 06/01/2024

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, AND WALWORTH COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 43.65	25.95%+12.26

ENGI0139-004 06/03/2024

	Rates	Fringes
OPERATOR: Power Equipment		
(1) Cranes, Tower Cranes with or w/o attachments over 100 tons; Cranes, tower Cranes with boom, leads and or jib length 176 ft or longer	$ 48.78	27.14
(2) Cranes, Tower Cranes with or w/o attachments 100 tons or less; Cranes, Tower Cranes with boom, leads, and or jib lengths 175 ft or less	$ 47.53	27.14
(3) Travelling Crane (bridge type)	$ 44.23	27.14
(4) Hydraulic Crane, 10 tons or less	$ 43.70	27.14
(6) Forklift	$ 40.10	27.14

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

IRON0008-012 06/02/2024

CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMIE, SHAWANO AND WALWORTH (Northeastern part) COUNTIES

	Rates	Fringes
IRONWORKER	$ 43.02	32.32

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-004 06/02/2024

ADAMS, COLUMBIA, CRAWFORD, DODGE, FLORENCE, FOREST, GRANT, GREENE (Except S.E. tip), GREEN LAKE, IOWA, JEFFERSON, JUNEAU, LAFAYETTE, LANGLADE, MARATHON, MARQUETTE, MENOMINEE, MONROE, PORTAGE, RICHLAND, SAUK, VERNON, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
IRONWORKER	$ 42.00	31.93

IRON0498-007 06/01/2024

GREEN (S.E. 1/3) AND WALWORTH (Except N.E. part) COUNTIES

	Rates	Fringes
IRONWORKER	$ 46.59	48.80

IRON0512-009 04/28/2024

BARRON, BUFFALO, CLARK, DUNN, JACKSON, PEPIN, POLK, RUSK, TAYLOR AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 44.85	35.22

IRON0512-023 04/28/2024

ASHLAND, BAYFIELD, BURNETT, IRON, LINCOLN, ONEIDA, PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 41.19	34.68

LABO0140-003 06/03/2024

BUFFALO, CRAWFORD, GRANT, JACKSON, JUNEAU, MONROE, RICHLAND, TREMPEALEAU (Southern part), AND VERNON COUNTIES

	Rates	Fringes
Laborer, General	$ 36.35	19.45

Laborer: Asbestos/hazardous
material remover
(Preparation, Removal and
Encapsulation of Hazardous
Materials from Non-Mechanical
  Systems).....$ 35.30 19.45

  NOTE: Mason Tender $1.00 over general laborer scale;
  Pipelayer $1.00 over general laborer scale

 LABO0268-001 06/03/2024

AREA 1: BARRON, CLARK (West 1/3), DUNN, PEPIN, POLK, RUSK
TAYLOR (West 1/3)

AREA 2: CLARK (East 2/3), LANGLADE, LINCOLN, ONEIDA, PRICE,
TAYLOR (East 2/3), VILAS, WOOD

AREA 3: BURNETT, IRON, SAWYER, WASHBURN

	Rates	Fringes
Laborer, General		
Area 1	$ 36.35	19.45
Area 2	$ 35.70	19.45
Area 3	$ 35.00	19.45
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous materials from Non-mechanical Systems)		
Area 1	$ 35.30	19.45
Area 2	$ 35.30	19.45
Area 3	$ 35.30	19.45

  NOTE: Mason Tender $1.00 over general laborer. Burnett, Iron,
  Sawyer & Washburn $.70 over general laborer.

 LABO0330-001 06/03/2024

DODGE, DOOR, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE,
KEWAUNEE, MANITOWOC, MARINETTE, MARQUETTE, MENOMINEE, OCONTO,
PORTAGE, SHAWANO, WAUPACA,WAUSHARA

	Rates	Fringes
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous materials from Non-mechanical Systems)	$ 35.70	19.45
Laborers, General	$ 35.30	19.45

NOTE: Mason Tender $1.00 over general laborer.

LABO0464-005 06/03/2024

ADAMS, COLUMBIA, GREEN, JEFFERSON, LAFAYETTE, SAUK, AND WALWORTH COUNTIES

	Rates	Fringes
Laborer, General		
Adams County	$ 35.70	19.45
Remaining Area	$ 36.35	19.45
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous Materials from Non-mechanical Systems)		
Adams County	$ 35.30	19.45
Remaining Area	$ 35.30	19.45

LABO0464-008 06/01/2024

	Rates	Fringes
Landscape Laborer	$ 20.59	18.44

LABO1091-001 05/01/2024

BAYFIELD (West of County Trunk A including the Iron River National Fish Hatchery and Great Lakes Transmission Co., Station 6) COUNTY

	Rates	Fringes
Laborer, General	$ 33.99	23.00
Laborer: Asbestos/hazardous		

material remover
(Preparation, Removal,
Encapsulation of Hazardous
materials from Non-mechanical
Systems).....$ 34.99 23.00

LABO1091-002 05/01/2024

ASHLAND & BAYFIELD (East of County Trunk A exclusive of the Iron River National Fish Hatchery and Great Lakes Transmission Co., Station 6) COUNTIES

	Rates	Fringes
Laborer, General	$ 32.54	23.00
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous materials from Non-mechanical Systems)	$ 33.54	23.00

PLAS0599-003 06/03/2024

PEPIN COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 38.00	26.84
PLASTERER	$ 41.47	24.13

PLAS0599-007 06/03/2024

BUFFALO, CRAWFORD, JACKSON, JUNEAU, MONROE, POLK, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 38.00	26.84
PLASTERER	$ 41.47	24.13

PLAS0599-011 06/03/2024

GRANT, GREEN, IOWA, AND LAFAYETTE COUNTIES

	Rates	Fringes

CEMENT MASON/CONCRETE FINISHER...$ 43.47 25.19
PLASTERER.....$ 40.98 26.79

PLAS0633-046 06/01/2023

BAYFIELD, PRICE, AND SAWYER COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 45.17	22.13
PLASTERER	$ 38.24	23.23

PLUM0011-009 05/06/2024

ASHLAND BAYFIELD, BURNETT, IRON, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work)	$ 49.32	27.18

PLUM0075-006 06/01/2024

DODGE (Watertown), GREEN, JEFFERSON, AND LAFAYETTE COUNTIES

	Rates	Fringes
PLUMBER (Including HVAC work)	$ 57.60	26.90

PLUM0075-008 06/01/2024

COLUMBIA, IOWA, MARQUETTE, RICHLAND, AND SAUK COUNTIES

	Rates	Fringes
PLUMBER (Including HVAC work)	$ 58.12	26.34

PLUM0118-003 06/24/2024

WALWORTH COUNTY

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work)	$ 54.60	26.12

PLUM0400-002 06/01/2024

ADAMS, CALUMET, DODGE (Except Watertown), DOOR, FOND DU LAC,

GREEN LAKE, KEWAUNEE, MANITOWOC, MARINETTE (Except Niagara), MENOMINEE, OCONTO, OUTAGAMIE, SHAWANO, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work)		
(1) Small buildings (except industrial and power plants) where plumbing or heating is $50,000 or less	$ 45.86	21.73
(2) All other work	$ 49.00	21.84

PLUM0434-004 06/16/2024

BARRON, BUFFALO, CLARK, CRAWFORD, DUNN, FLORENCE, FOREST, GRANT, JACKSON, JUNEAU, LANGLADE, LINCOLN, MONROE, ONEIDA, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RUSK, TAYLOR, TREMPEALEAU, VERNON, VILAS, AND WOOD COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work)	$ 49.24	24.38

PLUM0601-006 06/03/2024

DODGE (Watertown), GREEN, JEFFERSON, AND LAFAYETTE COUNTIES

	Rates	Fringes
PIPEFITTER (Including HVAC work)	$ 55.67	31.19

PLUM0601-008 06/03/2024

COLUMBIA, IOWA, MARQUETTE, RICHLAND, AND SAUK COUNTIES

	Rates	Fringes
PIPEFITTER (Including HVAC work)	$ 56.88	30.01

SHEE0010-031 05/01/2008

ASHLAND, BAYFIELD AND IRON COUNTIES

	Rates	Fringes
SHEET METAL WORKER	$ 27.53	14.61

SHEE0018-003 06/01/2024

FOND DU LAC AND MANITOWOC COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 40.76	31.62

SHEE0018-004 06/01/2024

ADAMS, DOOR, FLORENCE, FOREST, GREEN LAKE, KEWAUNEE, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, SHAWANO, WAUPACA, AND WAUSHARA COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 44.47	29.35

SHEE0018-014 06/01/2024

DODGE AND JEFFERSON COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 55.58	29.28

SHEE0018-015 09/01/2024

WALWORTH COUNTY

	Rates	Fringes
SHEET METAL WORKER (Including HVAC work)	$ 46.34	37.54

SHEE0018-017 06/01/2024

GREEN COUNTY

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 46.59	36.97

SHEE0018-018 06/01/2024

LANGLADE, LINCOLN, ONEIDA, PORTAGE, AND WOOD COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)		
Contracts $120,000 or less	$ 40.90	33.79
Contracts over $120,000	$ 40.90	33.79

SHEE0018-022 06/01/2024

BARRON, BUFFALO, BURNETT, CLARK, DUNN, JACKSON, PEPIN, POLK, PRICE, RUSK, SAWYER, TAYLOR, TREMPEALEAU, AND WASHBURN COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 40.75	32.22

SHEE0018-023 06/01/2024

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 48.42	33.55

SHEE0018-024 06/01/2024

CRAWFORD, GRANT, JUNEAU, MONROE, RICHLAND, AND VERNON COUNTIES

	Rates	Fringes
SHEET METAL WORKER (Including HVAC work)	$ 42.84	30.59

TEAM0346-003 05/01/2024

ASHLAND, BAYFIELD, BURNETT, SAWYER & WASHINGTON COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2 Axle Trucks	$ 34.86	23.03

TEAM0662-002 06/01/2024

ADAMS, BARRON, BUFFALO, CLARK , DOOR, DUNN, JACKSON, JUNEAU, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MENOMINEE, OCONTO, ONEIDA, PEPIN, POLK, PORTAGE, PRICE, RUSK, SHAWANO, TAYLOR, TEMPEALEAU, WAUPACA & WOOD COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2 Axle Trucks	$ 37.57	27.41
3 or more Axles	$ 37.72	27.41

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* SUWI2002-001 01/23/2002

	Rates	Fringes
Fence Installers	$ 15.00 **	2.37
GLAZIER	$ 20.21	1.86
Painters:		
Brush & Roller (Excluding Drywall Finishing)	$ 14.64 **	2.55
Spray	$ 13.72 **	2.25
Power Equipment Operator		
Backhoe	$ 17.454 **	7.61
Excavator	$ 17.37 **	7.45
Front End Loader	$ 23.36	4.61
ROOFER	$ 15.52 **	3.21
TRUCK DRIVER (3-Axle)	$ 15.28 **	4.78

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.75) or 13658

($13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union

whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey

is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION"

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 Schedule of Items

Proposal ID: 20250610003 **Project(s):** 5640-01-87

Federal ID(s): WISC 2025557

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	204.0100 Removing Concrete Pavement	121.000 SY	_____.____	_____.____
0004	204.0155 Removing Concrete Sidewalk	11.000 SY	_____.____	_____.____
0006	204.0170 Removing Fence	48.000 LF	_____.____	_____.____
0008	204.0231 Removing Building (station) 01. STA 5+75	1.000 EACH	_____.____	_____.____
0010	213.0100 Finishing Roadway (project) 01. 5640-01-87	1.000 EACH	_____.____	_____.____
0012	305.0120 Base Aggregate Dense 1 1/4-Inch	284.000 TON	_____.____	_____.____
0014	455.0605 Tack Coat	18.000 GAL	_____.____	_____.____
0016	465.0105 Asphaltic Surface	68.000 TON	_____.____	_____.____
0018	520.8700 Cleaning Culvert Pipes	1.000 EACH	_____.____	_____.____
0020	602.0410 Concrete Sidewalk 5-Inch	180.000 SF	_____.____	_____.____
0022	602.0815 Concrete Driveway 7-Inch	130.000 SY	_____.____	_____.____
0024	618.0100 Maintenance and Repair of Haul Roads (project) 01. 5640-01-87	1.000 EACH	_____.____	_____.____
0026	619.1000 Mobilization	1.000 EACH	_____.____	_____.____
0028	624.0100 Water	7.000 MGAL	_____.____	_____.____
0030	625.0500 Salvaged Topsoil	468.000 SY	_____.____	_____.____

Proposal ID: 20250610003 **Project(s):** 5640-01-87

Federal ID(s): WISC 2025557

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0032	628.1504 Silt Fence	214.000 LF	_____.____	_____.____
0034	628.1520 Silt Fence Maintenance	214.000 LF	_____.____	_____.____
0036	628.1905 Mobilizations Erosion Control	7.000 EACH	_____.____	_____.____
0038	628.1910 Mobilizations Emergency Erosion Control	4.000 EACH	_____.____	_____.____
0040	628.2008 Erosion Mat Urban Class I Type B	468.000 SY	_____.____	_____.____
0042	628.7555 Culvert Pipe Checks	2.000 EACH	_____.____	_____.____
0044	628.7560 Tracking Pads	1.000 EACH	_____.____	_____.____
0046	629.0210 Fertilizer Type B	0.400 CWT	_____.____	_____.____
0048	630.0140 Seeding Mixture No. 40	21.000 LB	_____.____	_____.____
0050	630.0500 Seed Water	10.700 MGAL	_____.____	_____.____
0052	642.5001 Field Office Type B	1.000 EACH	_____.____	_____.____
0054	643.0300 Traffic Control Drums	1,080.000 DAY	_____.____	_____.____
0056	643.0900 Traffic Control Signs	540.000 DAY	_____.____	_____.____
0058	643.1000 Traffic Control Signs Fixed Message	18.000 SF	_____.____	_____.____
0060	643.5000 Traffic Control	1.000 EACH	_____.____	_____.____
0062	644.1810 Temporary Pedestrian Barricade	118.000 LF	_____.____	_____.____

Proposal ID: 20250610003 **Project(s):** 5640-01-87

Federal ID(s): WISC 2025557

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0064	650.4500 Construction Staking Subgrade	119.000 LF	_____.____	_____.____
0066	650.5000 Construction Staking Base	119.000 LF	_____.____	_____.____
0068	650.6501 Construction Staking Structure Layout (structure) 01. Ferry Operations Building	1.000 EACH	_____.____	_____.____
0070	650.9500 Construction Staking Sidewalk (project) 01. 5640-01-87	1.000 EACH	_____.____	_____.____
0072	650.9911 Construction Staking Supplemental Control (project) 01. 5640-01-87	1.000 EACH	_____.____	_____.____
0074	690.0150 Sawing Asphalt	51.000 LF	_____.____	_____.____
0076	690.0250 Sawing Concrete	5.000 LF	_____.____	_____.____
0078	ASP.1T0A On-the-Job Training Apprentice at $5.00/HR	800.000 HRS	5.00000	4,000.00
0080	ASP.1T0G On-the-Job Training Graduate at $5.00/HR	500.000 HRS	5.00000	2,500.00
0082	SPV.0060 Special 01. Ferry Operations Building	1.000 EACH	_____.____	_____.____
0084	SPV.0060 Special 02. Ferry Operations Building HVAC	1.000 EACH	_____.____	_____.____
0086	SPV.0060 Special 03. Ferry Operations Building Electrical	1.000 EACH	_____.____	_____.____
0088	SPV.0060 Special 04. Grading and Shaping Site	1.000 EACH	_____.____	_____.____
0090	SPV.0060 Special 05. Gate System Metal 14-FT	1.000 EACH	_____.____	_____.____

Proposal ID: 20250610003 **Project(s):** 5640-01-87

Federal ID(s): WISC 2025557

SECTION: 0001 Contract Items

Alt Set ID: **Alt Mbr ID:**

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0092	SPV.0060 Special 06. Salvage Sign (Surveillance)	1.000 EACH	_____._____	_____._____
0094	SPV.0060 Special 07. Construction Staking Driveways 5640-01-87	1.000 EACH	_____._____	_____._____
0096	SPV.0090 Special 01. Fence Wood 6-FT	56.000 LF	_____._____	_____._____

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

June 3, 2025

NOTICE TO ALL CONTRACTORS:

Federal Wage Rate Addendum #01

Letting of June 10, 2025

Attached is a copy of the revised WI 10 Highway Davis Bacon Prevailing Wage Rates that are included in proposals 01, 03, 08, 09; WI 15 Heavy Davis Bacon Prevailing Wage Rates that are included in proposal 03; and WI 11 Building Davis Bacon Prevailing Wage Rates that are included in proposal 03. These wage rates are effective for all proposals they are included in in the June 10, 2025 letting. The updated wage rates are dated May 23 and May 30, and are effective on or after June 2, 2025 and June 9, 2025.

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: WI20250010 05/23/2025

Superseded General Decision Number: WI20240010

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)(1).

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 $17.75 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 2025.
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 $13.30 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 2025.

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 http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025

1	02/07/2025
2	02/21/2025
3	05/23/2025

BRWI0001-002 06/03/2024

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.86	27.00

BRWI0002-002 06/01/2024

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 46.60	27.01

BRWI0002-005 06/01/2024

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	$ 41.62	27.03

BRWI0003-002 06/01/2024

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.45	27.41

BRWI0004-002 06/01/2024

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
BRICKLAYER	$ 43.21	27.90

BRWI0006-002 06/01/2024

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.33	27.53

BRWI0007-002 06/01/2024

GREEN, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 39.34	28.15

BRWI0008-002 06/01/2024

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
BRICKLAYER	$ 46.16	27.33

BRWI0011-002 06/01/2024

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.45	27.41

BRWI0019-002 06/01/2024

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.18	27.68

BRWI0034-002 06/01/2024

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 40.17	27.32

* CARP0068-011 05/05/2025

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	$ 47.57	31.17
PILEDRIVERMAN	$ 47.71	30.98

CARP0231-002 06/05/2023

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
CARPENTER	$ 41.91	29.72

CARP0310-002 06/03/2024

ADAMS, ASHLAND, BAYFIELD (Eastern 2/3), FOREST, IRON, JUNEAU, LANGLADE, LINCOLN, MARATHON, ONEIDA, PORTAGE, PRICE, SHAWANO

(Western Portion of the County), TAYLOR, VILAS, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
Piledriver	$ 42.44	28.44

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* CARP0314-001 06/05/2023

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, JEFFERSON, LAFAYETTE, RICHLAND, ROCK, SAUK, AND WALWORTH COUNTIES

	Rates	Fringes
Carpenter	$ 38.86	27.06
Piledrivermen	$ 39.43	27.02

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* CARP0361-004 05/05/2025

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

	Rates	Fringes
CARPENTER	$ 46.82	31.92

CARP0731-002 06/03/2024

CALUMET (Eastern Portion of the County), FOND DU LAC (Eastern Portion of the County), MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
Piledriver	$ 42.44	28.44

CARP0955-002 06/03/2024

CALUMET (Western Portion of the County), FOND DU LAC (Western Portion of the County), GREEN LAKE, MARQUETTE, OUTAGAMIE, WAUPACA, WAUSHARA, AND WINNEBAGO

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1056-002 06/01/2024

ADAMS, ASHLAND, BARRON, BAYFIELD , BROWN, BUFFALO, BURNETT ,CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwy. 29 & 65), POLK (E. of Hwy. 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
MILLWRIGHT	$ 42.00	28.85

CARP1074-002 06/03/2024

BARRON, BURNETT, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, PEPIN, PIERCE (E. of Hwy. 29 & 65), POLK (E. of Hwy. 35, 48 & 65), RUSK, SAWYER, ST. CROIX (E. of Hwy. 65), AND WASHBURN

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1143-002 06/03/2024

BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPEALEAU AND VERNON COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1146-002 06/03/2024

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, MENOMINEE, OCONTO, AND SHAWANO (Western Portion of the County) COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP2337-009 06/03/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA

	Rates	Fringes
PILEDRIVERMAN	$ 42.21	34.07

ELEC0014-002 05/26/2024

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:	$ 42.73	23.99

ELEC0014-007 05/26/2024

REMAINING COUNTIES

	Rates	Fringes
Teledata System Installer		
Installer/Technician	$ 30.27	19.11

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 06/01/2023

KENOSHA COUNTY

	Rates	Fringes
Electricians:	$ 46.05	30%+13.15

ELEC0158-002 06/01/2024

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	$ 40.25	29.75%+11.17

ELEC0159-003 05/26/2024

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	$ 48.55	25.91

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 06/02/2024

DOUGLAS COUNTY

	Rates	Fringes
Electricians:	$ 46.23	69.19%

ELEC0388-002 06/01/2024

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:	$ 40.19	26%+12.45

ELEC0430-002 06/01/2024

RACINE COUNTY (Except Burlington Township)

	Rates	Fringes
Electricians:	$ 48.50	26.25

ELEC0494-005 05/26/2024

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:	$ 49.48	27.34

ELEC0494-006 05/26/2024

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:	$ 42.77	24.66

ELEC0494-013 05/26/2024

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:	$ 36.03	18.87
Technician:	$ 36.03	18.87

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 05/26/2024

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:	$ 40.00	22.69

ELEC0890-003 06/01/2024

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

	Rates	Fringes
Electricians:	$ 43.65	25.95%+12.26

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 06/01/2024

	Rates	Fringes
Power Equipment Operator		
Group 1	$ 46.37	28.80
Group 2	$ 45.87	28.80
Group 3	$ 44.77	28.80
Group 4	$ 44.51	28.80
Group 5	$ 44.22	28.80
Group 6	$ 38.32	28.80

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.

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:

	Rates	Fringes
IRONWORKER	$ 43.02	32.32

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/02/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER	$ 44.79	32.32

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/02/2024

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	$ 42.00	31.93

IRON0498-005 06/01/2024

GREEN (S.E. 1/3), ROCK (South of Edgerton and Milton), and WALWORTH (S.W. 1/3) COUNTIES:

	Rates	Fringes
IRONWORKER	$ 46.59	48.80

IRON0512-008 04/28/2024

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 44.85	35.22

IRON0512-021 04/28/2024

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA,

PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 41.19	34.68

LABO0113-002 06/03/2024

MILWAUKEE AND WAUKESHA COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 35.61	25.01
Group 2	$ 35.76	25.01
Group 3	$ 35.96	25.01
Group 4	$ 36.11	25.01
Group 5	$ 36.26	25.01
Group 6	$ 32.10	25.01

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 06/03/2024

OZAUKEE AND WASHINGTON COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 34.86	25.01
Group 2	$ 34.96	25.01
Group 3	$ 35.01	25.01
Group 4	$ 35.21	25.01
Group 5	$ 35.06	25.01
Group 6	$ 31.95	25.01

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 06/03/2024

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 34.67	25.01
Group 2	$ 34.82	25.01
Group 3	$ 35.02	25.01
Group 4	$ 34.99	25.01
Group 5	$ 35.32	25.01
Group 6	$ 31.81	25.01

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 06/03/2024

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	$ 40.57	19.45
Group 2	$ 40.67	19.45
Group 3	$ 40.72	19.45
Group 4	$ 40.92	19.45
Group 5	$ 40.77	19.45
Group 6	$ 37.20	19.45

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 06/03/2024

DANE COUNTY

	Rates	Fringes
LABORER		
Group 1	$ 40.85	19.45
Group 2	$ 40.95	19.45
Group 3	$ 41.00	19.45
Group 4	$ 41.20	19.45
Group 5	$ 41.05	19.45
Group 6	$ 37.20	19.45

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 05/06/2024

ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES

	Rates	Fringes
Painters:		
New:		
Brush, Roller	$ 36.16	26.27
Spray, Sandblast, Steel	$ 36.76	26.27
Repaint:		
Brush, Roller	$ 34.66	26.27
Spray, Sandblast, Steel	$ 35.26	26.27

PAIN0108-002 06/01/2024

RACINE COUNTY

	Rates	Fringes
Painters:		
Brush, Roller	$ 42.04	22.95
Spray & Sandblast	$ 43.04	22.95

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 06/01/2024

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes

Painters:
     Bridge.....$ 41.39 24.92
     Brush.....$ 40.64 24.92
     Spray & Sandblast.....$ 41.39 24.92

PAIN0802-002 06/01/2024

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND, ROCK, AND SAUK COUNTIES

	Rates	Fringes
PAINTER		
Brush	$ 36.35	20.87

PREMIUM PAY:
  Structural Steel, Spray, Bridges = $1.00 additional per hour.

PAIN0802-003 06/01/2024

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	$ 36.35	20.87

PAIN0934-001 06/01/2024

KENOSHA AND WALWORTH COUNTIES

	Rates	Fringes
Painters:		
Brush	$ 38.67	26.32
Spray	$ 39.67	26.32
Structural Steel	$ 38.82	26.32

PAIN1011-002 06/02/2024

FLORENCE COUNTY

	Rates	Fringes
Painters:	$ 29.95	15.89

PLAS0599-002 06/01/2024

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
Area A	$ 47.17	30.35
Area B	$ 41.62	26.34
Area C	$ 42.74	25.91
Area D	$ 43.16	25.49
Area E	$ 42.25	26.39
Area F	$ 38.98	29.67

AREA DESCRIPTIONS

AREA A: ASHLAND, BURNETT, BAYFIELD, DOUGLAS, IRON, PRICE, SAWYER, AND WASHBURN COUNTIES

AREA B: ADAMS, BARRON, BROWN, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, 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 C: BUFFALO, CRAWFORD, EAU CLAIRE, JACKSON, JUNEAU, LA CROSSE, MONROE, PEPIN, PIERCE, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

AREA D: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA E: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA F: KENOSHA AND RACINE COUNTIES

TEAM0039-001 06/01/2024

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles	$ 37.57	27.41
3 or more Axles; Euclids, Dumptor & Articulated, Truck Mechanic	$ 37.72	27.41

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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date

for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION"

"General Decision Number: WI20250015 05/23/2025

Superseded General Decision Number: WI20240015

State: Wisconsin

Construction Type: Heavy

Counties: Wisconsin Statewide.

HEAVY CONSTRUCTION PROJECTS (Excluding Tunnel, Sewer, and Water Lines).

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)(1).

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 $17.75 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 2025.
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 $13.30 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 2025.

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 http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	02/21/2025

BOIL0107-001 01/01/2025

	Rates	Fringes
BOILERMAKER		
Boilermaker	$ 46.52	34.63

BRWI0001-002 06/03/2024

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.86	27.00

BRWI0002-002 06/01/2024

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 46.60	27.01

BRWI0002-005 06/01/2024

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	$ 41.62	27.03

BRWI0003-002 06/01/2024

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.45	27.41

BRWI0004-002 06/01/2024

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
BRICKLAYER	$ 43.21	27.90

BRWI0006-002 06/01/2024

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes

BRICKLAYER.....$ 38.33 27.53

BRWI0007-002 06/01/2024

GREEN, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 39.34	28.15

BRWI0008-002 06/01/2024

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
BRICKLAYER	$ 46.16	27.33

BRWI0009-001 06/01/2024

GREEN LAKE, MARQUETTE, OUTAGAMIE, SHAWANO, WAUPACA, WASHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.45	27.41

BRWI0011-002 06/01/2024

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.45	27.41

BRWI0013-002 06/01/2024

DANE, GRANT, IOWA, AND RICHLAND COUNTIES

	Rates	Fringes
BRICKLAYER	$ 40.17	27.32

BRWI0019-002 06/01/2024

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 38.18	27.68

BRWI0021-002 06/01/2024

DODGE AND JEFFERSON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 39.10	28.37

BRWI0034-002 06/01/2024

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER	$ 40.17	27.32

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* CARP0068-011 05/05/2025

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	$ 47.57	31.17
PILEDRIVERMAN	$ 47.71	30.98

CARP0231-002 06/05/2023

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
CARPENTER	$ 41.91	29.72

CARP0310-002 06/03/2024

ADAMS, ASHLAND, BAYFIELD (Eastern 2/3), FOREST, IRON, JUNEAU, LANGLADE, LINCOLN, MARATHON, ONEIDA, PORTAGE, PRICE, SHAWANO (Western Portion of the County), TAYLOR, VILAS, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
Piledriver	$ 42.44	28.44

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* CARP0314-001 06/05/2023

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, JEFFERSON, LAFAYETTE, RICHLAND, ROCK, SAUK, AND WALWORTH COUNTIES

	Rates	Fringes
Carpenter	$ 38.86	27.06
Piledrivermen	$ 39.43	27.02

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* CARP0361-004 05/05/2025

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

	Rates	Fringes
CARPENTER	$ 46.82	31.92

CARP0731-002 06/03/2024

CALUMET (Eastern Portion of the County), FOND DU LAC (Eastern Portion of the County), MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
Piledriver	$ 42.44	28.44

CARP0955-002 06/03/2024

CALUMET (Western Portion of the County), FOND DU LAC (Western Portion of the County), GREEN LAKE, MARQUETTE, OUTAGAMIE, WAUPACA, WAUSHARA, AND WINNEBAGO

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1056-002 06/01/2024

ADAMS, ASHLAND, BARRON, BAYFIELD , BROWN, BUFFALO, BURNETT ,CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwy. 29 & 65), POLK (E. of Hwy. 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
MILLWRIGHT	$ 42.00	28.85

CARP1074-002 06/03/2024

BARRON, BURNETT, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, PEPIN, PIERCE (E. of Hwy. 29 & 65), POLK (E. of Hwy. 35, 48 & 65), RUSK, SAWYER, ST. CROIX (E. of Hwy. 65), AND WASHBURN

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1143-002 06/03/2024

BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPEALEAU AND VERNON COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP1146-002 06/03/2024

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, MENOMINEE, OCONTO, AND SHAWANO (Western Portion of the County) COUNTIES

	Rates	Fringes
CARPENTER	$ 42.44	28.44
PILEDRIVER	$ 42.44	28.44

CARP2337-009 06/03/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA

	Rates	Fringes
PILEDRIVERMAN	$ 42.21	34.07

CARP2337-010 06/03/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA

	Rates	Fringes
MILLWRIGHT	$ 42.31	32.21

ELEC0014-002 05/26/2024

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:	$ 42.73	23.99

ELEC0014-007 05/26/2024

REMAINING COUNTIES

	Rates	Fringes
Teledata System Installer		
Installer/Technician	$ 30.27	19.11

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 06/01/2023

KENOSHA COUNTY

	Rates	Fringes
Electricians:	$ 46.05	30%+13.15

ELEC0158-002 06/01/2024

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	$ 40.25	29.75%+11.17

ELEC0159-003 05/26/2024

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	$ 48.55	25.91

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 06/02/2024

DOUGLAS COUNTY

	Rates	Fringes
Electricians:	$ 46.23	69.19%

ELEC0388-002 06/01/2024

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:	$ 40.19	26%+12.45

ELEC0430-002 06/01/2024

RACINE COUNTY (Except Burlington Township)

	Rates	Fringes

Electricians:.....$ 48.50 26.25

ELEC0494-005 05/26/2024

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:.....	$ 49.48	27.34

ELEC0494-006 05/26/2024

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:.....	$ 42.77	24.66

ELEC0494-013 05/26/2024

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.....	$ 36.03	18.87
Technician.....	$ 36.03	18.87

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 05/26/2024

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:.....$ 40.00 22.69

ELEC0890-003 06/01/2024

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

	Rates	Fringes
Electricians:.....	$ 43.65	25.95%+12.26

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

ENGI0139-001 06/01/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Power Equipment Operator		
Group 1.....	$ 52.66	27.60
Group 2.....	$ 52.16	27.60
Group 3.....	$ 51.66	27.60
Group 4.....	$ 50.37	27.60
Group 5.....	$ 46.39	27.60
Group 6.....	$ 41.24	27.60

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, Pedestal Tower Cranes and Derricks with or w/o attachments with a lifting capacity of over 100 tons; or Cranes, Tower Cranes, Pedestal Tower Cranes and Derricks with boom, leads, and/or jib lengths measuring 176 feet or longer; Self-Erecting Tower Cranes over 4000 lbs lifting capacity; All Cranes with Boom Dollies; Boring Machines (directional); Master Mechanic. $0.50 additional per hour per 100 tons or 100 ft of boom over 200 ft or lifting capacity of crane over 200 tons to a maximum of 300 tons or 300 ft. Thereafter an increase of $0.01 per ft or ton, whichever is greater.

GROUP 2: Cranes, Tower Cranes, Pedestal Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; or Cranes, Tower Cranes Portable Tower Cranes, Pedestal Tower Cranes and Derricks with boom, leadsand/or jib lengths measuring 175 feet or

less; Backhoes (excavators) 130,000 lbs and over; Caisson Rigs; Pile Drivers; Boring Machines (vertical or horizontal), Versi-Lift, Tri-Lift, Gantry 20,000 lbs & over.

GROUP 3: Backhoe (excavator) under 130,000 lbs;Self-erecting Tower Crane 4000 lbs & under lifting capacity;Traveling Crane (bridge type); Skid Rigs; Dredge Operator; Mechanic; Concrete Paver (over 27E); Concrete Spreader and Distributor; Forklift/ Telehandler (machinery- moving / steel erection); Hydro Blaster, 10,000 psi and over

GROUP 4: Material Hoists; Stack Hoists; Hydraulic Backhoe (tractor or truck mounted); Hydraulic Crane, 5 tons or under (tractor or truck mounted); Hoist (tuggers 5 tons & over); Hydro-Excavators/Daylighters; Concrete Pumps Rotec type Conveyors; Tractor/Bulldozer/End Loader (over 40 hp); Motor Patrol; Scraper Operator; Sideboom; Straddle Carrier; Welder; Bituminous Plant and Paver Operator; Roller over 5 tons; Rail Leveling Machine (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler; Rotary Drill Operator and Blaster; Percussion Drill Operator; Air Track Drill and/or Hammers; Gantrys (under 20,000 lbs); Tencher (wheel type or chain type having 8 inch or larger bucket); Milling Machine; Off-Road Material Haulers.

GROUP 5: Backfiller; Concrete Auto Breaker (large); Concrete Finishing Machines (road type); Rubber Tired Roller; Concrete Batch Hopper; Concrete Conveyor Systems; Grout Pumps; Concrete Mixers (14S or over); Screw Type Pumps and Gypsum Pumps; Tractor, Bulldozer, End Loader (under 40 hp); Trencher (chain type, bucket under 8 inch); Industrial Locomotives; Rollers under 5 tons; Stump Grinder/Chipper (Large); Timber Equipment; Firemen (pile drivers and derricks); Personnel Hoist, Telehandler over 8000 lbs; Robotic Tool Carrier with or without attachments

GROUP 6: Tampers - Compactors (riding type); Assistant Engineer; A-Frames and Winch Trucks; Concrete Auto Breaker; Hydrohammers (small); Brooms and Sweepers; Hoist (tuggers under 5 tons); Boats (Tug, Safety, Work Barges, Launch); Shouldering Machine Operator; Prestress Machines; Screed Operator; Stone Crushers and Screening Plants; Screed Operators (milling machine), Farm or Industrial Tractor Mounted Equipment; Post Hole Digger; Fireman (asphalt plants); Air Compressors over 400 CFM; Generators, over 150 KW; Augers (vertical and horizontal); Air, Electric, Hydraulic Jacks (slipform); Skid Steer Loaders (with or without attachments); Boiler Operators (temporary heat); Refrigeration Plant/Freeze Machines; Power Pack Vibratory/Ultra Sound Drivers and Extractors; Welding Machines; Heaters (mechanical); Pumps; Winches (small electric); Oiler and Greaser; Rotary Drill Tender; Conveyor; Forklifts/Telehandler 8000 lbs & under; Elevators: Automatic Hoists; Pumps (well points); Combination Small Equipment Operators

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ENGI0139-003 06/03/2024

REMAINING COUNTIES

	Rates	Fringes
Power Equipment Operator		
Group 1.....	$ 48.78	27.14

Group 2	$ 47.53	27.14
Group 3	$ 44.23	27.14
Group 4	$ 43.70	27.14
Group 5	$ 41.63	27.14
Group 6	$ 40.10	27.14

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; Cranes, Tower Cranes, and Derricks with boom, leads and/or jib lengths 176 ft or longer.

GROUP 2: Backhoes (Excavators) weighing 130,00 lbs and over; Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; Cranes, Tower Cranes, and Derricks with boom, leads, and/or jib lengths 175 ft or less; Caisson Rigs; Pile Driver

GROUP 3: Backhoes (Excavators) weighing under 130,000 lbs; Travelling Crane (bridge type); Milling Machine; Concrete Paver over 27 E; Concrete Spreader and Distributor; Concrete Laser Screed; Concrete Grinder and Planing Machine; Slipform Curb and Gutter Machine; Boring Machine (Directional); Dredge Operator; Skid Rigs; over 46 meter Concrete Pump.

GROUP 4: Hydraulic Backhoe (tractor or truck mounted); Hydraulic Crane, 10 tons or less; Tractor, Bulldozer, or End Loader (over 40 hp); Motor Patrol; Scraper Operator; Bituminous Plant and Paver Operator; Screed-Milling Machine; Roller over 5 tons; Concrete pumps 46 meter and under; Grout Pumps; Rotec type machine; Hydro Blaster, 10,000 psi and over; Rotary Drill Operator; Percussion Drilling Machine; Air Track Drill with or without integral hammer; Blaster; Boring Machine (vertical or horizontal); Side Boom; Trencher, wheel type or chain type having 8 inch or larger bucket; Rail Leveling Machine (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler; Straddle Carrier; Material Hoists; Stack Hoist; Man Hoists; Mechanic and Welder; Off Road Material Haulers.

GROUP 5: Tractor, Bulldozer, or Endloader (under 40 hp); Tampers -Compactors, riding type; Stump Chipper, large; Roller, Rubber Tire; Backfiller; Trencher, chain type (bucket under 8 inch); Concrete Auto Breaker, large; Concrete Finishing Machine (road type); Concrete Batch Hopper; Concrete Conveyor Systems; Concrete Mixers, 14S or over; Pumps, Screw Type and Gypsum); Hydrohammers, small; Brooms and Sweeeprs; Lift Slab Machine; Roller under 5 tons; Industrial Locomotives; Fireman (Pile Drivers and Derricks); Pumps (well points); Hoists, automatic; A-Frames and Winch Trucks; Hoists (tuggers); Boats (Tug, Safety, Work Barges and Launches); Assistant Engineer

GROUP 6: Shouldering Machine Operator; Farm or Industrial Tractor mounted equipment; Post Hole Digger; Auger (vertical and horizontal); Skid Steer Loader with or without attachments; Robotic Tool Carrier with or without attachments; Power Pack Vibratory/Ultra Sound Driver and

Extractor; Fireman (Asphalt Plants); Screed Operator; Stone Crushers and Screening Plants; Air, Electric, Hydraulic Jacks (Slip Form); Prestress Machines; Air Compressor, 400 CFM or over; Refrigeration Plant/Freese Machine; Boiler Operators (temporary heat); Forklifts; Welding Machines; Generators; Pumps over 3""; Heaters, Mechanical; Combination small equipment operator; Winches, small electric; Oiler; Greaser; Rotary Drill Tender; Conveyor; Elevator Operator

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IRON0008-002 06/02/2024

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:

	Rates	Fringes
IRONWORKER	$ 43.02	32.32

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/02/2024

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER	$ 44.79	32.32

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/02/2024

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	$ 42.00	31.93

IRON0512-008 04/28/2024

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 44.85	35.22

IRON0512-021 04/28/2024

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA,
PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 41.19	34.68

LABO0113-002 06/03/2024

MILWAUKEE AND WAUKESHA COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 35.61	25.01
Group 2	$ 35.76	25.01
Group 3	$ 35.96	25.01
Group 4	$ 36.11	25.01
Group 5	$ 36.26	25.01
Group 6	$ 32.10	25.01

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 06/03/2024

OZAUKEE AND WASHINGTON COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 34.86	25.01
Group 2	$ 34.96	25.01
Group 3	$ 35.01	25.01
Group 4	$ 35.21	25.01
Group 5	$ 35.06	25.01
Group 6	$ 31.95	25.01

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 06/03/2024

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
LABORER		
Group 1	$ 34.67	25.01
Group 2	$ 34.82	25.01
Group 3	$ 35.02	25.01
Group 4	$ 34.99	25.01
Group 5	$ 35.32	25.01
Group 6	$ 31.81	25.01

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 06/03/2024

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	$ 40.57	19.45
Group 2	$ 40.67	19.45
Group 3	$ 40.72	19.45
Group 4	$ 40.92	19.45
Group 5	$ 40.77	19.45
Group 6	$ 37.20	19.45

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 06/03/2024

DANE COUNTY

	Rates	Fringes
LABORER		
Group 1	$ 40.85	19.45
Group 2	$ 40.95	19.45
Group 3	$ 41.00	19.45
Group 4	$ 41.20	19.45
Group 5	$ 41.05	19.45
Group 6	$ 37.20	19.45

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 05/06/2024

ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES

	Rates	Fringes
Painters:		
New:		
Brush, Roller	$ 36.16	26.27
Spray, Sandblast, Steel	$ 36.76	26.27
Repaint:		
Brush, Roller	$ 34.66	26.27
Spray, Sandblast, Steel	$ 35.26	26.27

PAIN0108-002 06/01/2024

RACINE COUNTY

	Rates	Fringes
Painters:		
Brush, Roller	$ 42.04	22.95
Spray & Sandblast	$ 43.04	22.95

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 06/01/2024

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Painters:		
Bridge	$ 41.39	24.92
Brush	$ 40.64	24.92
Spray & Sandblast	$ 41.39	24.92

PAIN0802-002 06/01/2024

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND, ROCK, AND SAUK COUNTIES

	Rates	Fringes
PAINTER		
Brush	$ 36.35	20.87

PREMIUM PAY:
Structural Steel, Spray, Bridges = $1.00 additional per hour.

PAIN0802-003 06/01/2024

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	$ 36.35	20.87

PAIN0934-001 06/01/2024

KENOSHA AND WALWORTH COUNTIES

	Rates	Fringes
Painters:		
Brush	$ 38.67	26.32
Spray	$ 39.67	26.32
Structural Steel	$ 38.82	26.32

PAIN1011-002 06/02/2024

FLORENCE COUNTY

	Rates	Fringes
Painters:	$ 29.95	15.89

PLAS0599-002 06/01/2024

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
Area A	$ 47.17	30.35
Area B	$ 41.62	26.34
Area C	$ 42.74	25.91
Area D	$ 43.16	25.49

Area E	$ 42.25	26.39
Area F	$ 38.98	29.67

AREA DESCRIPTIONS

AREA A: ASHLAND, BURNETT, BAYFIELD, DOUGLAS, IRON, PRICE, SAWYER, AND WASHBURN COUNTIES

AREA B: ADAMS, BARRON, BROWN, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, 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 C: BUFFALO, CRAWFORD, EAU CLAIRE, JACKSON, JUNEAU, LA CROSSE, MONROE, PEPIN, PIERCE, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

AREA D: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA E: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA F: KENOSHA AND RACINE COUNTIES

PLUM0011-003 05/06/2024

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
PLUMBER	$ 49.32	27.18

PLUM0075-002 06/01/2024

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
PLUMBER	$ 57.60	26.90

PLUM0075-004 06/01/2024

DODGE (Watertown), GREEN, JEFFERSON, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
PLUMBER	$ 57.60	26.90

PLUM0075-009 06/01/2024

COLUMBIA, DANE, IOWA, MARQUETTE, RICHLAND AND SAUK COUNTIES

	Rates	Fringes
PLUMBER	$ 58.12	26.34

PLUM0111-007 06/03/2024

MARINETTE COUNTY (Niagara only)

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 43.90	27.53

PLUM0118-002 06/24/2024

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
Plumber and Steamfitter	$ 54.60	26.12

PLUM0400-003 05/31/2024

ADAMS,BROWN, CALUMET, DODGE (except Watertown), DOOR, FOND DU LAC, GREEN LAKE,KEWAUNEE, MANITOWOC, MARINETTE (except Niagara), MENOMINEE, OCONTO, OUTAGAMIE, SHAWANO, SHEBOYGAN, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 49.00	21.84

PLUM0434-002 06/16/2024

BARON, BUFFALO, CHIPPEWA, CLARK, CRAWFORD, DUNN, EAU CLAIRE, FLORENCE, FOREST, GRANT, JACKSON, JUNEAU, LA CROSSE, LANGLADE, LINCOLN, MARATHON, MONROE, ONEIDA, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RUSK, ST. CROIX, TAYLOR, TREMPEALEAU, VERNON, VILAS, AND WOOD COUNTIES

	Rates	Fringes
PIPEFITTER	$ 49.24	24.38

PLUM0601-003 06/03/2024

Zone 1

DODGE (Watertown), GREEN, JEFFERSON, LAFAYETTE, MILWAUKEE, OZAUKEE, ROCK, WASHINGTON AND WAUKESHA COUNTIES

	Rates	Fringes
PIPEFITTER	$ 55.67	31.19

PLUM0601-009 06/03/2024

COLUMBIA, DANE, IOWA, MARQUETTE, RICHLAND AND SAUK COUNTIES

	Rates	Fringes
PIPEFITTER	$ 56.88	30.01

TEAM0039-002 06/01/2024

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axle Trucks	$ 37.57	27.41

3 or more axles; Euclids
or Dumptor, Articulated
Truck, Mechanic.....$ 37.72 27.41

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* SUWI2011-001 11/16/2011

	Rates	Fringes
WELL DRILLER	$ 16.52 **	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.75) or 13658 ($13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was

prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which

the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION"

"General Decision Number: WI20250011 05/30/2025

Superseded General Decision Number: WI20240011

State: Wisconsin

Construction Type: Building

Counties: Adams, Ashland, Barron, Bayfield, Buffalo, Burnett, Clark, Columbia, Crawford, Dodge, Door, Dunn, Florence, Fond Du Lac, Forest, Grant, Green, Green Lake, Iowa, Iron, Jackson, Jefferson, Juneau, Kewaunee, Lafayette, Langlade, Lincoln, Manitowoc, Marinette, Marquette, Menominee, Monroe, Oconto, Oneida, Pepin, Polk, Portage, Price, Richland, Rusk, Sauk, Sawyer, Shawano, Taylor, Trempealeau, Vernon, Vilas, Walworth, Washburn, Waupaca, Waushara and Wood Counties in Wisconsin.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

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)(1).

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 $17.75 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 2025.
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 $13.30 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 2025.

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 http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	02/28/2025
2	05/30/2025

ASBE0019-002 06/01/2024

COLUMBIA, CRAWFORD, DODGE, GRANT, GREEN, IOWA, JEFFERSON, JUNEAU, LAFAYETTE, MARQUETTE, MONROE, RICHLAND, SAUK, VERNON, AND WALWORTH COUNTIES

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems. Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems whether they contain asbestos or not)	$ 43.48	37.50

ASBE0034-005 06/01/2024

BARRON, BUFFALO, DUNN, PEPIN, AND POLK COUNTIES

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials; protective coatings, coverings, and finishes to all types of mechanical systems. Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems whether they contain asbestos or not)	$ 45.65	36.18

ASBE0049-003 05/06/2024

ASHLAND, BAYFIELD, BURNETT, IRON, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials; protective coverings,		

coatings, and finishes to all types of mechanical systems. Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems whether they contain asbestos or not)....$ 38.62 30.45

ASBE0127-002 06/01/2024

ADAMS, CLARK, DOOR, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, JACKSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARINETTE, MENOMINEE, OCONTO, ONEIDA, PORTAGE, PRICE, RUSK, SHAWANO, TAYLOR, TREMPEALEAU, VILAS, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
Heat and Frost Insulator (Includes the application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems; and the application of firestopping material in walls, floors, ceilings. Includes preparation, wetting, stripping, removal, scrapping vacuuming, bagging and disposing of all insulation materials from mechanical systems whether they contain asbestos or not)....$	43.24	28.56

BOIL0107-001 01/01/2025

	Rates	Fringes
BOILERMAKER		
Boilermaker.....$	46.52	34.63

BRWI0001-003 06/03/2024

CRAWFORD,JUNEAU, MONROE,TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
Bricklayer & Tile Setter.....$	38.86	27.00

BRWI0002-003 06/01/2024

ASHLAND, BURNETT, IRON, WASHBURN

	Rates	Fringes
BRICKLAYER		
Bricklayer, Tile Setter.....$	46.60	27.01
Cement Mason/Concrete Finisher.....$	44.12	27.01

BRWI0002-004 06/01/2024

BAYFIELD COUNTY

	Rates	Fringes
BRICKLAYER		
Bricklayer & Tile Setter	$ 46.60	27.01

BRWI0003-001 06/01/2024

DOOR, KEWAUNEE, FLORENCE, FOND DU LAC, GREEN LAKE, MANITOWOC, MARINETTE, MARQUETTE, OCONTO, SHAWANO, WAUPACA, AND WAUSHARA COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason, Tile Setter	$ 38.45	27.41

BRWI0004-003 06/01/2024

WALWORTH COUNTY

	Rates	Fringes
BRICKLAYER	$ 43.21	27.90
CEMENT MASON/CONCRETE FINISHER	$ 38.44	27.90
TILE SETTER	$ 37.09	27.90

BRWI0006-001 06/01/2024

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MENOMINEE, ONEIDA, PORTAGE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer,Cement Mason,Tile Setter	$ 38.33	27.53

BRWI0006-004 06/01/2024

PRICE COUNTY

	Rates	Fringes
Bricklayer & Tile Setter	$ 38.33	27.53

BRWI0007-003 06/01/2024

GREEN AND LAFAYETTE COUNTIES

	Rates	Fringes
Bricklayer & Tile Setter	$ 39.34	28.15

BRWI0013-003 06/01/2024

GRANT, IOWA, AND RICHLAND COUNTIES

	Rates	Fringes
Bricklayer	$ 40.17	27.32

Tile Layer.....$ 37.14 27.94

BRWI0019-004 06/01/2024

BARRON, BURNETT (Southern half), DUNN, PEPIN, POLK, RUSK, AND WASHBURN (Southern half) COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason, Tile Layer	$ 38.18	27.68

BRWI0019-005 06/01/2024

SAWYER COUNTY

	Rates	Fringes
Bricklayer & Tile Setter	$ 38.18	27.68

BRWI0021-001 06/01/2024

DODGE AND JEFFERSON COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason, Tile Layer	$ 39.10	28.37

BRWI0034-001 06/01/2024

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER		
Bricklayer, Cement Mason, Tile Layer	$ 40.17	27.32

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* CARP0068-013 05/05/2025

BURNETT (West of highway 48) AND POLK(West of Highways 35, 48 & 65) COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical work)	$ 48.54	28.84

CARP0310-007 06/01/2024

ADAMS, BAYFIELD (Eastern 2/3), FOREST, IRON, ONEIDA, PORTAGE, PRICE, SHAWANO (Western Portion of the County), TAYLOR, VILAS, AND WOOD COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work)	$ 40.44	28.43
Piledriverman	$ 40.44	28.43

CARP0310-008 06/01/2024

ASHLAND COUNTY

	Rates	Fringes
CABINET INSTALLER (Including Drywall Hanging & Acoustical Work)	$ 40.44	28.43

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* CARP0314-006 06/05/2023

COLUMBIA, DODGE, GRANT, GREEN, IOWA, JEFFERSON, LAFAYETTE, RICHLAND, SAUK, AND WALWORTH COUNTIES

	Rates	Fringes
Carpenter (Including Drywall Hanging, Acoustical Work)	$ 38.86	27.06
Piledriverman	$ 39.43	27.02

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* CARP0361-006 05/05/2025

BAYFIELD COUNTY (West of Hwy 63)

	Rates	Fringes
Carpenters: (Including Drywall Hanging, Acoustical work)	$ 40.79	27.90

CARP0731-006 06/01/2024

FOND DU LAC (Eastern Portion of the County) AND MANITOWOC COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work)	$ 40.44	28.43
Piledriverman	$ 40.44	28.43

CARP0955-004 06/01/2024

FOND DU LAC (Western Portion of the County), GREEN LAKE, MARQUETTE, WAUPACA, AND WAUSHARA COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work)	$ 40.44	28.43
Piledriverman	$ 40.44	28.43

CARP1056-004 06/01/2024

ADAMS, ASHLAND, BARRON, BAYFIELD (Eastern 2/3), BUFFALO, BURNETT, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, PEPIN, POLK (E. of Hwy. 35, 48 & 65),

PORTAGE, PRICE, RICHLAND, RUSK, SAUK, SAWYER, SHAWANO, TAYLOR, TREMPEALEAU, VERNON, VILAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
MILLWRIGHT	$ 42.00	28.85

CARP1074-009 06/01/2024

BARRON, BURNETT (East of Hwy 48), CLARK, DUNN, POLK (East of Hwy 35, 48, 65), RUSK, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work)	$ 40.44	28.43
Piledriverman	$ 40.44	28.43

CARP1143-006 06/01/2024

BUFALO, CRAWFORD, JACKSON, MONROE, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work)	$ 40.44	28.43
Piledriverman	$ 40.44	28.43

CARP1146-006 06/01/2024

DOOR, FLORENCE (Except area bordering Michigan), KEWAUNEE, MARINETTE (Except N.E. corner), MENOMINEE, OCONTO, AND SHAWANO (Western Portion of the County) COUNTIES

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Acoustical Work)	$ 40.44	28.43
Piledriverman	$ 40.44	28.43

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* CARP1348-006 05/01/2025

BAYFIELD COUNTY (Western 1/3)

	Rates	Fringes
MILLWRIGHT	$ 41.90	29.51

ELEC0014-001 05/26/2024

ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (Except Colby, Fremont, Lynn, Maryville, Sherman, Sherwood, Unity), CRAWFORD, DUNN, GRANT, IRON, JACKSON, MONROE, PEPIN, POLK, PRICE, RICHLAND, RUSK, SAWYER, TAYLOR, TREMPEALEAU, VERNON, AND WASHBURN COUNTIES

	Rates	Fringes

ELECTRICIAN.....$ 42.73 23.99

ELEC0014-005 05/26/2024

	Rates	Fringes
Teledata System Installer		
Installer/Technician	$ 30.27	19.11

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).

ELEC0158-007 06/01/2024

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
Electricians:	$ 40.25	29.75%+11.17

ELEC0159-001 05/26/2024

COLUMBIA, DODGE (West of Hwy 26 except Chester and Emmet Twps), GREEN LAKE COUNTY (Except Townships of Berlin, Seneca & St. Marie), IOWA, MARQUETTE COUNTY (Except Townships of Neshkoka, Crystal Lake, Newton, and Springfield), AND SAUK COUNTIES

	Rates	Fringes
Electricians:	$ 48.55	25.91

ELEC0219-006 06/01/2019

FLORENCE COUNTY (Townships of Aurora, Commonwealth, Fern, Florence and Homestead) AND MARINETTE COUNTY (Township of Niagara)

	Rates	Fringes
ELECTRICIAN		
Electrical contracts over $180,000	$ 33.94	21.80
Electrical contracts under $180,000	$ 31.75	21.73

ELEC0388-004 06/01/2024

ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, 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
ELECTRICIAN	$ 40.19	26%+12.45

ELEC0494-010 05/26/2024

DODGE COUNTY (Area East of Hwy 26 including all of Chester Township, but excluding Emmet Township), FOND DU LAC (except Waupun), AND MANITOWOC (Schleswig) COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 42.77	24.66

ELEC0494-014 05/26/2024

DODGE (Area East of Hwy 26 including Chester Twp but excluding Emmet Twp), FOND DU LAC (Except Waupun), AND MANITOWOC (Schleswig) COUNTIES

	Rates	Fringes
Sound & Communications		
Installer	$ 36.03	18.87
Technician	$ 36.03	18.87

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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ELEC0577-001 05/26/2024

GREEN LAKE (N. Part including Twps of Berlin, St Marie, and Seneca), MARQUETTE (N. part including Twps of Crystal Lake, Neshkoro, Newton, and Springfield), WAUPACA, AND WAUSHARA COUNTIES,

	Rates	Fringes
ELECTRICIAN	$ 40.00	22.69

ELEC0890-005 06/01/2024

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, AND WALWORTH COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 43.65	25.95%+12.26

ENGI0139-004 06/03/2024

	Rates	Fringes
OPERATOR: Power Equipment		
(1) Cranes, Tower Cranes with or w/o attachments over 100 tons; Cranes, tower Cranes with boom, leads and or jib length 176 ft or longer	$ 48.78	27.14
(2) Cranes, Tower Cranes with or w/o attachments 100 tons or less; Cranes, Tower Cranes with boom, leads, and or jib lengths 175 ft or less	$ 47.53	27.14
(3) Travelling Crane (bridge type)	$ 44.23	27.14
(4) Hydraulic Crane, 10 tons or less	$ 43.70	27.14
(6) Forklift	$ 40.10	27.14

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

IRON0008-012 06/02/2024

CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMIE, SHAWANO AND WALWORTH (Northeastern part) COUNTIES

	Rates	Fringes
IRONWORKER	$ 43.02	32.32

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-004 06/02/2024

ADAMS, COLUMBIA, CRAWFORD, DODGE, FLORENCE, FOREST, GRANT, GREENE (Except S.E. tip), GREEN LAKE, IOWA, JEFFERSON, JUNEAU, LAFAYETTE, LANGLADE, MARATHON, MARQUETTE, MENOMINEE, MONROE, PORTAGE, RICHLAND, SAUK, VERNON, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
IRONWORKER	$ 42.00	31.93

IRON0498-007 06/01/2024

GREEN (S.E. 1/3) AND WALWORTH (Except N.E. part) COUNTIES

	Rates	Fringes
IRONWORKER	$ 46.59	48.80

IRON0512-009 04/28/2024

BARRON, BUFFALO, CLARK, DUNN, JACKSON, PEPIN, POLK, RUSK, TAYLOR AND TREMPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER	$ 44.85	35.22

IRON0512-023 04/28/2024

ASHLAND, BAYFIELD, BURNETT, IRON, LINCOLN, ONEIDA, PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER	$ 41.19	34.68

LABO0140-003 06/03/2024

BUFFALO, CRAWFORD, GRANT, JACKSON, JUNEAU, MONROE, RICHLAND, TREMPEALEAU (Southern part), AND VERNON COUNTIES

	Rates	Fringes
Laborer, General	$ 36.35	19.45
Laborer: Asbestos/hazardous material remover (Preparation, Removal and Encapsulation of Hazardous Materials from Non-Mechanical Systems)	$ 35.30	19.45

NOTE: Mason Tender $1.00 over general laborer scale; Pipelayer $1.00 over general laborer scale

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* LABO0268-005 06/03/2024

AREA 1: BARRON, CLARK (West 1/3), DUNN, PEPIN, POLK, RUSK TAYLOR (West 1/3)

AREA 2: CLARK (East 2/3), LANGLADE, LINCOLN, ONEIDA, PRICE, TAYLOR (East 2/3), VILAS, WOOD

AREA 3: BURNETT, IRON, SAWYER, WASHBURN

	Rates	Fringes
Laborer, General		
Area 1	$ 36.35	19.45
Area 2	$ 35.70	19.45
Area 3	$ 35.00	19.45

Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous materials from Non-mechanical Systems)
Area 1, 2, and 3.....$ 35.30 19.45

NOTE: Mason Tender $1.00 over general laborer. Burnett, Iron, Sawyer & Washburn $.70 over general laborer.

LABO0330-001 06/03/2024

DODGE, DOOR, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, KEWAUNEE, MANITOWOC, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, PORTAGE, SHAWANO, WAUPACA,WAUSHARA

	Rates	Fringes
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous materials from Non-mechanical Systems)	$ 35.70	19.45
Laborers, General	$ 35.30	19.45

NOTE: Mason Tender $1.00 over general laborer.

LABO0464-005 06/03/2024

ADAMS, COLUMBIA, GREEN, JEFFERSON, LAFAYETTE, SAUK, AND WALWORTH COUNTIES

	Rates	Fringes
Laborer, General		
Adams County	$ 35.70	19.45
Remaining Area	$ 36.35	19.45
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous Materials from Non-mechanical Systems)		
Adams County	$ 35.30	19.45
Remaining Area	$ 35.30	19.45

LABO0464-008 06/01/2024

	Rates	Fringes
Landscape Laborer	$ 20.59	18.44

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* LABO1091-001 05/01/2025

BAYFIELD (West of County Trunk A including the Iron River National Fish Hatchery and Great Lakes Transmission Co., Station 6) COUNTY

	Rates	Fringes

Laborer, General	$ 36.04	23.47
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous materials from Non-mechanical Systems)	$ 37.04	23.47

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* LABO1091-002 05/01/2025

ASHLAND & BAYFIELD (East of County Trunk A exclusive of the Iron River National Fish Hatchery and Great Lakes Transmission Co., Station 6) COUNTIES

	Rates	Fringes
Laborer, General	$ 36.04	23.47
Laborer: Asbestos/hazardous material remover (Preparation, Removal, Encapsulation of Hazardous materials from Non-mechanical Systems)	$ 37.04	23.47

PLAS0599-003 06/03/2024

PEPIN COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 38.00	26.84
PLASTERER	$ 41.47	24.13

PLAS0599-007 06/03/2024

BUFFALO, CRAWFORD, JACKSON, JUNEAU, MONROE, POLK, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 38.00	26.84
PLASTERER	$ 41.47	24.13

PLAS0599-011 06/03/2024

GRANT, GREEN, IOWA, AND LAFAYETTE COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 43.47	25.19
PLASTERER	$ 40.98	26.79

PLAS0633-046 06/01/2023

BAYFIELD, PRICE, AND SAWYER COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 45.17	22.13
PLASTERER	$ 38.24	23.23

PLUM0011-009 05/06/2024

ASHLAND BAYFIELD, BURNETT, IRON, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work)	$ 49.32	27.18

PLUM0075-006 06/01/2024

DODGE (Watertown), GREEN, JEFFERSON, AND LAFAYETTE COUNTIES

	Rates	Fringes
PLUMBER (Including HVAC work)	$ 57.60	26.90

PLUM0075-008 06/01/2024

COLUMBIA, IOWA, MARQUETTE, RICHLAND, AND SAUK COUNTIES

	Rates	Fringes
PLUMBER (Including HVAC work)	$ 58.12	26.34

PLUM0118-003 06/24/2024

WALWORTH COUNTY

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work)	$ 54.60	26.12

PLUM0400-002 06/01/2024

ADAMS, CALUMET, DODGE (Except Watertown), DOOR, FOND DU LAC, GREEN LAKE, KEWAUNEE, MANITOWOC, MARINETTE (Except Niagara), MENOMINEE, OCONTO, OUTAGAMIE, SHAWANO, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work)		
(1) Small buildings (except industrial and power plants) where plumbing or heating is $50,000 or less	$ 45.86	21.73
(2) All other work	$ 49.00	21.84

PLUM0434-004 06/16/2024

BARRON, BUFFALO, CLARK, CRAWFORD, DUNN, FLORENCE, FOREST, GRANT, JACKSON, JUNEAU, LANGLADE, LINCOLN, MONROE, ONEIDA, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RUSK, TAYLOR, TREMPEALEAU, VERNON, VILAS, AND WOOD COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC work)	$ 49.24	24.38

PLUM0601-006 06/03/2024

DODGE (Watertown), GREEN, JEFFERSON, AND LAFAYETTE COUNTIES

	Rates	Fringes
PIPEFITTER (Including HVAC work)	$ 55.67	31.19

PLUM0601-008 06/03/2024

COLUMBIA, IOWA, MARQUETTE, RICHLAND, AND SAUK COUNTIES

	Rates	Fringes
PIPEFITTER (Including HVAC work)	$ 56.88	30.01

SHEE0010-031 05/01/2008

ASHLAND, BAYFIELD AND IRON COUNTIES

	Rates	Fringes
SHEET METAL WORKER	$ 27.53	14.61

SHEE0018-003 06/01/2024

FOND DU LAC AND MANITOWOC COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 40.76	31.62

SHEE0018-004 06/01/2024

ADAMS, DOOR, FLORENCE, FOREST, GREEN LAKE, KEWAUNEE, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, SHAWANO, WAUPACA, AND WAUSHARA COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 44.47	29.35

SHEE0018-014 06/01/2024

DODGE AND JEFFERSON COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 55.58	29.28

SHEE0018-015 09/01/2024

WALWORTH COUNTY

	Rates	Fringes
SHEET METAL WORKER (Including HVAC work)	$ 46.34	37.54

SHEE0018-017 06/01/2024

GREEN COUNTY

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 46.59	36.97

SHEE0018-018 06/01/2024

LANGLADE, LINCOLN, ONEIDA, PORTAGE, AND WOOD COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)		
Contracts $120,000 or less	$ 40.90	33.79
Contracts over $120,000	$ 40.90	33.79

SHEE0018-022 06/01/2024

BARRON, BUFFALO, BURNETT, CLARK, DUNN, JACKSON, PEPIN, POLK, PRICE, RUSK, SAWYER, TAYLOR, TREMPEALEAU, AND WASHBURN COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 40.75	32.22

SHEE0018-023 06/01/2024

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
Sheet Metal Worker (Including HVAC work)	$ 48.42	33.55

SHEE0018-024 06/01/2024

CRAWFORD, GRANT, JUNEAU, MONROE, RICHLAND, AND VERNON COUNTIES

	Rates	Fringes
SHEET METAL WORKER (Including HVAC work)	$ 42.84	30.59

TEAM0346-003 05/01/2024

ASHLAND, BAYFIELD, BURNETT, SAWYER & WASHINGTON COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2 Axle Trucks	$ 34.86	23.03

TEAM0662-002 06/01/2024

ADAMS, BARRON, BUFFALO, CLARK , DOOR, DUNN, JACKSON, JUNEAU, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MENOMINEE, OCONTO, ONEIDA, PEPIN, POLK, PORTAGE, PRICE, RUSK, SHAWANO, TAYLOR, TEMPEALEAU, WAUPACA & WOOD COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2 Axle Trucks	$ 37.57	27.41
3 or more Axles	$ 37.72	27.41

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* SUWI2002-001 01/23/2002

	Rates	Fringes
Fence Installers	$ 15.00 **	2.37
GLAZIER	$ 20.21	1.86
Painters:		
Brush & Roller (Excluding Drywall Finishing)	$ 14.64 **	2.55
Spray	$ 13.72 **	2.25
Power Equipment Operator		
Backhoe	$ 17.454 **	7.61
Excavator	$ 17.37 **	7.45
Front End Loader	$ 23.36	4.61
ROOFER	$ 15.52 **	3.21
TRUCK DRIVER (3-Axle)	$ 15.28 **	4.78

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.75) or 13658 ($13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via

email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION"