BUREAU OF STRUCTURES

Bridge Technical Committee Meeting Minutes

Date: Monday, April 14, 2025 **Time:** 9:30 am-12:00 pm **Location:** HF N110

Introductions 10 *min*

In-Person Attendees: Laura Shadewald, Aaron Bonk, James Luebke, Tim MacLaughlin-Barck, Ann Thielmann, Kyle Busch, Leah Rhodes, Luke Haun, Matt Grove, Isaac Groshek, Greg Brecka, Brent Freeman, Craig Pringle

Online Attendees: Joe Balice, Alyssa Barrette, Dominique Bechle, Bill Dreher, Brian Boothby, Julie Brooks, Carolyn Brugman, Chad Halverson, Cherish Schwenn, Christine Hamil, Phil Ciha, Ruth Coisman, Dan Kowalski, Josh Dietsche, Eric Heitman, Amed Salim Guiro, Habib Tabatabai, Greg Haig, Jackie Spoor, Jared Marugg, Linda Krueger, Brandon Lamers, Tirupan Mandal, Mark Mutziger, Mike Delemont, Mike Ryan, Dan Monroe, Dave Pantzlaff, Cami Peterson, Scott Reay, Jason Roselle, John Rublein, Scott Stroud, Tadd Owens, Dave Staab, Dan Sydow, Tim Borowski, Krissy VanHout, Craig Webster, Mark Zander

Subcommittee Report(s) 5 *min*

5 min	**Design & Construction Subcommittee Update** No specific requests came in from the contracting community since the last BTC meeting. Subcommittee will remain in place on an as-needed basis. No current plan in place for a meeting of this group.	Aaron Bonk

Standing Topics 20 *min*

10 min	**Wisconsin Highway Research Program Bridge Items** James highlighted a recently completed project (bridge deck thermography) and current/active research projects (V/O concrete patches, MSE wall repairs, investigation of MSE wall corrosion in Wisconsin, investigating removing existing abutment expansion joints). There will be additional research coming out related to scour design practices to assist with appropriate substructure type selection. James also made a request for future research topics for consideration amongst the structures technical committee within WHRP to move forward.	James Luebke
10 min	**Bridge Manual Updates** James indicated that there were relatively minimal updates that went into effect with the January 2025 release of the WBM. That said, James did cover the different updated areas that would affect the Bridge Technical Committee. Some of those are as follows: creation of a new pedestrian bridge railing (with a curb option and without) standard, the detailing of diaphragms on prestressed concrete girders towards the ends of the	James Luebke

girders, etc. The curb detailing included in the new pedestrian bridge standard is able to be applied with other standard railing options as well.

10 min **Specification Changes/Updates** — Mark Zander

Mark provided information related to the standard specification updates. This year, WisDOT will not be publishing a 2026 Standard Spec book – changes that are necessary will be published by ASP-6 and they will be effective with the November 2025 letting (August PS&E's and beyond). The reason to not publish this year's spec is based on the larger overhaul of the standard spec reorganization that the Bureau of Technical Services is leading. This fall there will also be pilot projects that are put in place for bidding/letting in order to test out the new spec organization.

Mark discussed some proposed changes related to Excavation for Structures, as well as Temporary Shoring. The language being considered is included in the appendices for these meeting minutes and comments should be provided back to BOS/BPD for more discussion.

Action Item(s): Members of the Bridge Technical Committee meeting (and others that those attendees feel should weigh in) should provide comments on the proposed language to try to ensure consistency of intent and application.

Previous Meeting Carryover Topics/Action Item(s) Review — 25 *min*

10 min **False Decking** — Aaron Bonk

Aaron brought this discussion item back and indicated that the finalized language, which was agreed upon by WisDOT and industry, is now in effect. A non-bid item STSP is being generated by BPD and will be active prior to the next release of the STSP updates in August 2025. In the meantime, project special provisions will be included, using this same language. The finalized language that will be used is as follows:

Notice to Contractor, Containment System.

Provide a rigid containment system throughout bridge construction over live traffic lanes and pedestrian facilities capable of protecting underlying facilities and vehicles from falling construction debris. Design the containment system to catch construction debris between exterior girders without extending below the bottom of the girders at its maximum deflection. The containment system is not intended to be a secondary falsework/formwork system. Put the containment system in place before beginning construction operations that may generate debris over live traffic or active pedestrian facilities. Operations may include, but are not limited to: full or partial deck removals, falsework installation, deck repairs, and deck pours. This containment system is not required if construction operations are performed when the facilities

below are under full closure. This containment system does not replace any requirements under standard specifications section 203. Include details of the proposed containment system in the falsework submittal per standard specifications section 502.3.2. The containment system is incidental to the bridge construction items.

Criteria for inclusion in a contract:

Insert article where work operations between the exterior girders of a bridge are anticipated to be performed over live traffic lanes and pedestrian facilities, and the operations have a risk of falling construction debris (i.e., nails, construction tools, various wood products, concrete/deck repair debris, fresh concrete, etc.) onto the facilities below. This article is not needed if the contract requires all bridge construction to be performed when the facilities under the bridge are fully closed.

- All bridges over interstate highways with live traffic below.
- All bridges over roadways with a minimum ADT of 10,000 with live traffic below.
- All bridges over pedestrian facilities that will remain open during construction.

  **Note that these criteria are the minimum application locations. Regions may determine other suitable locations where Containment System language will be included in the contractor for project-specific reasons.

  **Note that for work and removals over railroads requiring protection below, standard spec bid item "203.0330 Debris Containment (structure)" shall be used.

5 min	**Project Schedule Issues** Aaron brought this issue back from past discussions. He has held multiple different discussions with Region Project Development Chiefs related to construction schedules, and analysis of the delivery of structures projects over the last 5 years has been completed. This analysis showed that project schedules have been very rarely missed to any significant extent (i.e., approximately 5% of projects with structures have gone over the scheduled work days over the last 5 years). The intention of this analysis was to try to better understand the widespread nature of scheduling issues, or lack thereof. BOS continues to work on providing recommendations and guidance to the Regions who are setting contract days to avoid the "smaller" contract day issues.	Aaron Bonk

	In addition to the work that BOS is working on, BPD is pulling together a bigger group of WisDOT staff to look at bridge project schedules and closure windows with relation to the large workload coming. Brandon Lamers is leading this group through BPD, and he provided some more input on this group's target goals. Aaron Bonk will be involved in this group from BOS's side of things. Aaron will follow up with the Bridge Technical Committee moving forward with outcomes of this new committee. As there are specific project schedule issues identified by industry that simply can't be met, those should continue to be brought forward during bidding or during construction for Region and BOS consideration and/or adjustment.	
5 min	**IRI Ride Roadway Spec Application to Bridges** This topic is a carryover from a previous meeting. Laura indicated that this topic should be brought back at a future meeting as no action has been taken since the last BTC meeting. **Action Item(s):** Laura will review this issue and discuss how things are being applied statewide to determine what updates need to be made, if any, in order to apply (or not apply) things as intended.	Laura Shadewald
5 min	**Girder Deflection/Rebound on Redecks** Aaron indicated that a few internal discussions have been held related to this topic and that other discussions with FHWA have been started related to bridge deck construction practices overall. BOS is looking for contractor thoughts on what level of additional information is functional in terms of trying to improve constructability and design verification in the field with that information. Dan Kowalski indicated that there have been issues in the past with redecks where longer prestressed girder spans are present with flatter grades. This is a typical situation where outcomes of redecks haven't been as desired (ponding, etc.). Multiple contractors in the room indicated that they do survey the girders before and after the deck is removed, and that seems to provide a decent outcome in terms of being able to adjust the grades prior to the deck pour. However, this isn't always completed and potentially should be contractually moving forward. Mike Delemont indicated that this topic would be a good one for consideration amongst WHRP future research. James Luebke will consider this topic for WHRP. **Action Item(s):** BOS to take back the additional information from the contractors and determine next steps for updating conventional design process and/or requirements in the field related to survey data.	Aaron Bonk

5 min	**Approved Product List (APL) process – Rapid Patch Material & Non-Shrink Grout** Multiple bridge contractors have noted that there are new APL lists that are out there for these different materials, and they are causing more confusion at the project level than they historically have. Project bidding right now (i.e., prior to the November 2025 letting) should remain the same. Tirupan came to discuss the background of these new lists and how BTS is currently reviewing and testing different products for inclusion on these different lists. One of the bigger shifts was to separate the horizontal from vertical/overhead patch materials into different lists, as the previous list had both and not all of the materials on that list would work for the vertical/overhead condition. The "Vertical and Overhead Rapid Set Concrete Patch Material" APL as it shows up online right now will be renamed to remove the *Rapid Set* portion. There is also a shift in the timing of what materials can be used on projects – moving forward, if the product is on the list while a project is happening it can be used, as opposed to that material needing to be on the list at the letting date.	Tirupan Mandal/ Brad Diener
5 min	**Construction Staking for Temporary Structures** This issue centered on the lack of clarity about whether construction staking is to be treated as incidental to the Temporary Structure bid item or not. Craig provided some information related to an impending specification update related to this topic, based on the discussion that was held at the last Bridge Tech Committee meeting, as well as follow-up discussions internal to BPD since that time. Under the 526 Temporary Structures section of the standard spec, and specifically in the Payment section, language is being added to specifically mention that construction staking is to be included in the payment for the temporary structure. Here is the proposed updated language: (2) Payment for the Temporary Structure bid items is full compensation for providing a temporary structure including design and construction; for construction staking; for temporary shoring and other secondary structure items; for backfilling with structure backfill; for maintaining; and for removing when no longer needed. The department will pay 70 percent of the contract amount when open to traffic and the balance after structure removal and associated site restoration. ~~All temporary shoring and other secondary structure items~~	Craig Pringle

~~required to construct the temporary bridge structure are to be included as a part of this bid item.~~

This language will be updated in a future spec update (not likely to be included in this year's ASP 6).

5 min **Cofferdam Unit/Payment** — Laura Shadewald

Laura discussed the fact that BOS has proactively been trying to ensure that the correct number of items for cofferdams are included in the plans. As was discussed in the past meetings, changes from using the LS unit for the 206.5001 Cofferdam bid item to EACH unit have caused some confusion. The intention is to bid by the bridge structure, not by the individual cofferdam unit at each substructure. That being the case, BOS has clarified design guidance in the Bridge Manual to reflect this change and reviews of consultant-designed and in-house BOS-designed plans are watching for errors in this bid item. If contractors notice any advertised plans that differ from this guidance are asked to submit a question prior to the bidding date.

New Topics — 70 *min*

10 min **In-Stream Restrictions for Dry Runs** — Isaac Groshek

Isaac Groshek brought forward this topic related to what is or is not allowed within the in-stream restriction windows. Some of the contractors were asking to get some allowances to still do some work in these windows if it isn't within the waterway. Cami Peterson (WDNR) indicated that if work is happening outside of the water, then that work can happen within the restriction windows. Additionally, there is a waiver process that can be followed in order to potentially move some of the restriction window dates depending on the waterway resources at a particular site.

From the contractors' perspective, a lot of the situations that come up and the waiver process is followed but they receive a quick "no". These types of requests and denials, don't appear to be reaching the correct people within WisDOT or WDNR to review them. Phil Ciha indicated that the Region PM should be the person that is coordinating these requests with the WDNR liaison, the Region environmental coordinator, and others to get to a resolution.

Craig Webster indicated that he has recently received multiple waiver requests and for those projects, the review was completed and exceptions have been granted. He brought forward 5 different project examples as references.

Action Item(s): Aaron Bonk to take this topic to the statewide PD Chiefs group to better understand what the internal communication process is for these reviews/requests coming from the field. Ultimately, if there is a way to ensure that the right people within WisDOT and

	WDNR can be pulled in to review contractor requests, then we need to make sure that is happening.	
10 min	**HPC Use on Structure Projects** Brent Freeman brought this topic forward related to considerations on HPC use throughout the state. The ask is for designers to ensure that Redi-Mix suppliers are able to guarantee HPC material in the locations requested (i.e., are rural settings set up to provide this). Another topic at hand related to HPC usage throughout a structure. The Wisconsin River Bridge project requested substructures to use HPC and Brent's comment was that if there was a different protective material to be used that would be much more beneficial to the project cost overall.	David Stanke
10 min	**Temporary Structures** Mike Ryan inquired about the need for all temporary structures having to meet interstate standards, which is causing costs to increase. The example brought forward is one in which the roadway design speed was 20 mph and the approaches leading up to the bridge being gravel, so why not allow the bridge deck to follow that same finished surface. Tim indicated that the finished surface situation is the real concern for these structures. Tim also inquired about temporary structures as well, but related to the spec not allowing beams to be spliced with welds. Laura Shadewald discussed this topic with the BOS Fabrication Unit and the need for welding to be inspected, which does not currently happen in this posed situation. **Action Item(s):** BOS to review the language in the existing spec to determine whether there is a way to open up some flexibility on the finished surface of temporary structures in certain situations.	Mike Ryan/ Tim MacLaughlin-Barck
10 min	**Concrete Overlay Wet Cures** James brought forward a recommendation to require a 4 day wet cure on concrete overlays. This recommendation is based on a recent WHRP research project. There is proposed language for standard spec 509 included in the appendix of these meeting minutes. **Action Item(s):** Members of the Bridge Technical Committee meeting (and others that those attendees feel should weigh in) should provide comments on the proposed language for further BOS consideration.	James Luebke
10 min	**Using Mechanical Anchors in New and Existing Structures** Scott brought a project example which proposed drilling in anchors for connecting temporary shoring members over a box culvert top slab. This was not allowed on the particular project as it was deemed detrimental to a thin member. Scott also mentioned that his concern with this is whether the rejection of this type of system is going to be applicable to other locations, such as parapet formwork tie downs to bridge decks, because that would be a much larger issue in terms of costs for projects.	Scott Stroud

James Luebke provided some feedback related to situations and types of anchors where anchoring into structures isn't acceptable (i.e. mechanical screw anchors in permanent applications). Aaron Bonk inquired with contractors related to situations where anchoring is done that WisDOT staff may not be aware of that would influence the consideration of some of these items that do come in for review and comment.

Action Item(s): BOS staff to meet internally about this topic to determine how these types of requests are being reviewed. After internal discussions happen, BOS staff may come back to industry to talk about different applicable situations.

BUREAU OF STRUCTURES

Bridge Technical Committee Meeting Sign-In Sheet

Date: Monday, April 14, 2025 **Time:** 9:30am-12:00pm **Location:** HF N110

Name	Company	Email
Laura Shadewald	BOS	laura.shadewald@dot.wi.gov
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JAMES LUEBKE	BOS	JAMES.luebke@DOT.WI.GOV
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BRENT FREEMAN	KRAEMER NA	BFREEMAN@KRAEMERNA.COM
Craig Pringle	BPD	craig.pringle@dot.wi.gov

Wisconsin Highway Research Program (WHRP) Updates

Wisconsin Highway Research Program (WHRP) Bridge – Completed Project

S23-04 Bridge Deck Thermography

- Behind Schedule – Final report published (March 2025)

Wisconsin Highway Research Program (WHRP) Bridge – Active Projects (4)

S24-05 Concrete Patches (V/O)

- Behind Schedule (EOD time extension expected-2026)
- Testing - All the repairs, trowel-applied and form-and-pour, have been installed. Thermal exposure and cyclic loading testing on-going.

Wisconsin Highway Research Program (WHRP) Bridge – Active Projects (4)

S24-06 State of Practice for Specifying and Repairing MSE Walls

- On Schedule (2/2026)
- Next Task - WisDOT Inspection and Repair Issues
- Next POC meeting: 4/16/25

G24-02 Investigation of MSE Wall Corrosion in Wisconsin

- Ahead of Schedule (6/2025)

Wisconsin Highway Research Program (WHRP) Bridge – Active Projects

S25-02 Investigate Removing Existing Abutment Expansion Joints

- October 2024 Kick-off
- Objectives:
  - Examine the forces and movements that develop in the structure.
  - Define practical limits of substructure conversions.
  - Prepare recommendations for converting substructures.
- Next POC meeting: May 2025

Wisconsin Highway Research Program (WHRP) Bridge – Expected Project

S25-02 Investigate Wisconsin Bridge Scour in Mobile (Alluvial) Sand-Bed Rivers

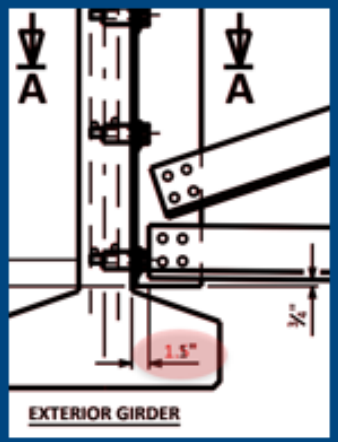
- Pre-Contract (3yr/$300,000)
- October 2025 Kick-off
- Objectives:
  - Reviewing the current scour design practices in WisDOT.
  - Develop bridge scour envelope curves as supplemental tools
  - Provide recommendations for using bridge scour envelope curves

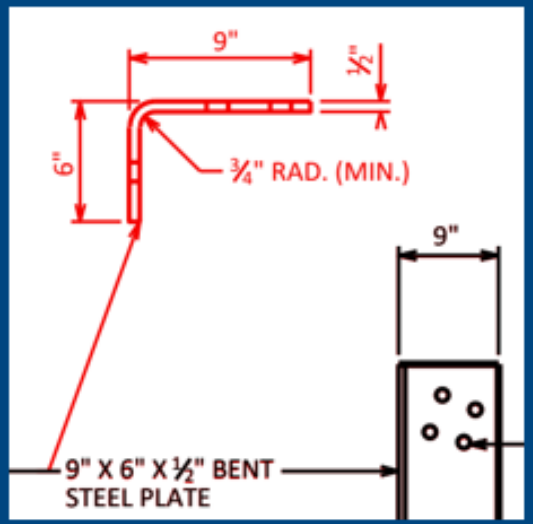
Bridge Manual Updates

Bridge Manual Updates

January 2025 - Standards

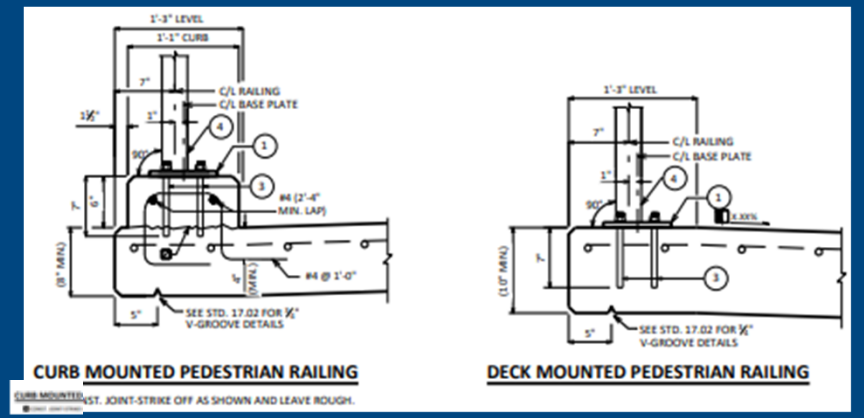
- Standard 19.37 – Diaphragms
  - Changed diaphragm offset from 1" to 1.5"
  - Added bent angle detail





Bridge Manual Updates

January 2025 - Standards

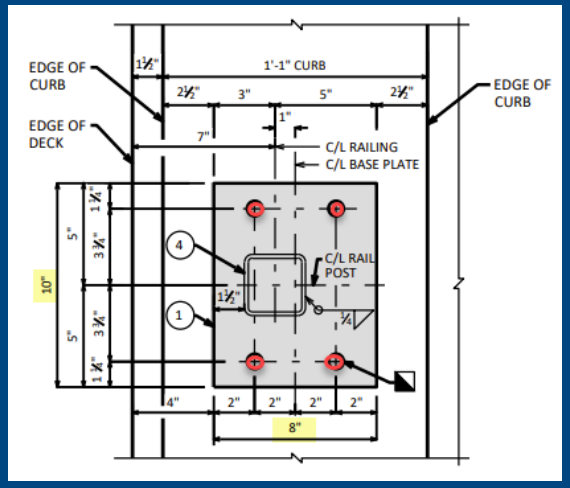


Standard 30.40 – Pedestrian Railing *New*

- Anchorage Details:
  - Curb Mounted
  - Deck/Slab Mounted
- Applicable Anchorage for Railing or Fence Types:
  - Std. 30.17 - Combination Railings Types 'C1-C6' *(shown)*
  - Std. 30.11 – Chain Link Fence *(similar)*
  - Std. 30.15 – Tubular Steel Railing Screening *(similar)*

Bridge Manual Updates

January 2025 - Standards



Bridge Tech Meeting (04/14/2025)

Standard Specification Clean-up Discussion Items (Relating to Excavation and Shoring) form Bureau of Project Development (BPD)

1. **Since ss-107.1(2) states that contractor shall,**

   "Comply with all applicable federal, state, and local health official rules and regulations governing safety, health, and sanitation. Provide all necessary safeguards, safety devices, and protective equipment. Take all other actions reasonably necessary to protect the life and health of employees on the project and the safety of the public."

   is it necessary to have the statements in ss-206.3.7(2), ss-520.3.2.1(2), and ss-608.3.1.1(2)?

   "Excavate as specified in 29 CFR Part 1926 OSHA subpart P for excavations. Slope the sides of the excavation as required by soil conditions to stabilize the sides for safe working conditions…".

   Propose to clean-up the specifications to remove statement from ss-206.3.7(2), ss-520.3.2.1(2), and ss-608.3.1.1(2) since it is essentially repeating what is in ss-107.1(2) and there is potential for the information to get out of synch with each other. In addition, we don't reference OSHA regulations for other contractor activities like fall protection, etc. Proposed change should not change intent.

107 Legal Relations and Responsibility to the Public

107.1 Laws to be Observed

(1) At all times, observe and comply with all applicable federal and state laws and administrative rules, codes, local laws, ordinances, and regulations that affect the conduct of the work, and applicable orders or decrees of bodies or tribunals having jurisdiction or authority over the work. The department will consider no plea of misunderstanding or ignorance thereof. The contractor shall indemnify and save harmless the state and all of its officers, agents, and employees against any claim or liability arising from or based on the violation of any applicable law, ordinance, regulation, order, or decree, whether by the contractor or the contractor's employees, subcontractors, or agents.

(2) Comply with all applicable federal, state, and local health official rules and regulations governing safety, health, and sanitation. Provide all necessary safeguards, safety devices, and protective equipment. Take all other actions reasonably necessary to protect the life and health of employees on the project and the safety of the public.

107.2 Haul Road Notification

(1) Notify the engineer in writing at least 3 business days before hauling project materials over a public road or street not a part of the state trunk highway system. The department will subsequently survey the existing condition of that haul route to establish a baseline for assessing damage that the contractor's hauling operations might cause.

107.3 Permits and Licensing

(1) Obtain all permits and licenses, pay all charges and fees, and give all notices necessary to perform the work. The contractor shall comply with all permit requirements whether the permit is issued to the contractor, the state, or the maintaining authority.

107.4 Patented Devices, Materials, and Processes

(1) Include in the bid prices royalties and costs arising from patents, trademarks, and copyrights. Before using a design, device, material, or process covered by letters, patents, or copyrights, provide for its use by suitable legal agreement with the patentee or owners. Provide proof of this agreement with the engineer if necessary. The contractor and the contractor's surety shall provide indemnification from all claims for infringement of patents, trademarks, or copyrights as specified in 107.12.

107.5 Labor Compliance

(1) Comply with all contract labor compliance provisions and take responsibility for subcontractor and

206 Excavation for Structures

206.1 Description

(1) This section describes excavating for culverts, structural plate pipe, and structural plate pipe arches, bridges, and retaining walls. It also describes removing old substructure units within the space

206.3.7 Excavation

(1) Notify the engineer sufficiently before beginning excavation for structures so the engineer may take elevations and measurements of the existing ground and substructure units before disturbance and removal.

(2) Excavate as specified in 29 CFR Part 1926 OSHA subpart P for excavations. Slope the sides of the excavation as required by soil conditions to stabilize the sides for safe working conditions. Limit excavation to the quantity considered necessary for safety. If the plans require, shore the excavation instead of sloping the sides. If the plans do not require shoring, the contractor may elect to use, at no expense to the department, shoring rather than excavating to a slope.

http://www.dol.gov/dol/cfr/title_29/

206.3.8 Preparing Foundation for Footings

(1) Free rock or other hard foundation material of loose material. Clean and cut this material to a firm surface, either level, or stepped, or serrated. Clean out and fill seams with cement mortar or grout.

(2) If masonry is to rest on an excavated surface other than rock, exercise special care not to disturb the bottom of the excavation. Do not make the final removal of the foundation material to grade until just before placing the masonry. Protect surfaces from freezing after excavation and before placing concrete for the footing. Do not place concrete on frozen subgrade.

(3) If using foundation piles, substantially complete the excavation of each pit before beginning pile-driving operations in the pit. After completing pile-driving operations in a given pit, remove loose and displaced material in the pit to the elevation of the bottom of the footings.

(4) If the contractor can place footings in dry foundation pits, it may omit footing forms, with the engineer's

520 Pipe Culverts

520.1 Description

(1) This section describes providing culvert pipe, cattle pass, and apron endwalls; providing and removing temporary culvert pipe; and cleaning existing culvert pipes.

520.2 Materials

520.2.1 Culvert Pipe

(1) Furnish culvert pipe fabricated in a plant listed on the APL consistent with the diameter the bid item

engineer agrees a manufactured joint, coupling, or restraint cannot be used.

520.3.2 Excavating and Constructing Foundations for Pipe Culverts

520.3.2.1 Public Highway Culvert

(1) If placing pipe culverts under a public highway in open trenches, either place in an excavation in the existing ground, or in previously placed embankment compacted as specified for embankment in 207. Place and compact embankment to at least one foot above the top of the culvert before excavating the trench. Avoid placing embankment to an elevation exceeding 2 feet above the top of the culvert before placing the culvert.

(2) Perform trenching, shoring, and excavating according to 29 CFR part 1926, OSHA subpart P. Use shoring if utilities and other restraints make sloping or benching of the excavation impracticable.

http://www.dol.gov/dol/cfr/title_29/

(3) Make trenches wide enough to provide free working space on each side of the pipe, but not exceeding 1/2 the nominal pipe diameter and never less than 6 inches. The required working space depends upon the size of the pipe and the character of the material in the excavation; however, always provide sufficient space between the pipe and the sides of the trench to allow for preparing the foundation, laying the pipe, and placing and compacting the backfill. If the height of the proposed embankment or earth cover above the top of the pipe exceeds 6 feet, excavate the trench below the top of the pipe as

608 Storm Sewer

608.1 Description

(1) This section describes providing new storm sewer and relaying existing storm sewer.

608.2 Materials

joints.

608.3 Construction

608.3.1 Excavation

608.3.1.1 General

(1) Unless the contract specifies otherwise or the engineer allows, perform sewer construction in open trenches and in a way that protects pipelines or sewers from unusual stresses.

(2) Place and compact the embankment to at least one foot above the elevation of the top of the storm sewer pipe before excavating the trench. Perform trenching, shoring, and excavating according to 29 CFR part 1926, OSHA subpart P. If utilities and other restraints make sloping or benching of the excavation impracticable, employ a shoring system.

http://www.dol.gov/dol/cfr/title_29/

(3) Make trenches wide enough to provide free working space on each side of the pipe. This space must not exceed 1/2 the nominal diameter of the pipe, and never be less than 6 inches. The required working space depends upon the size of the pipe and the character of the material in the excavation; however, always provide sufficient space between the pipe and the sides of the trench to allow for preparing the foundation, laying the pipe, and placing and compacting the backfill. If the height of the

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2. Should the payment information in Excavation for Structures found in ss-206.5.2(2);

"Payment also includes providing cofferdams, cribs, sheeting, shoring, bracing, pumping, and dewatering except, if the contract contains the applicable bid items, the department will pay separately for this work."

Be changed to match the language in the Temporary Shoring measurement and payment specification ss-.511.4(1) and ss-511.5(3)?

"(1) The department will measure the Temporary Shoring bid items by the square foot acceptably completed at locations the plans show, measured as the area of…"

"(3) The department will not pay for temporary shoring for locations the plans do not show."

Potential edit to clean-up specs by adding the *"…at locations the plan show…"* to ss-206.5.2(2). Proposed change should not change intent.

206 Excavation for Structures

206.1 Description

(1) This section describes excavating for culverts, structural plate pipe, and structural plate pipe arches, bridges, and retaining walls. It also describes removing old substructure units within the space

other unforeseen structures as extra work. Other removals visible when visiting the construction site or that the plans list or show are incidental to the work.

206.5.2 Excavation for Structures

(1) Payment for the Excavation for Structures bid items is full compensation for removing excavation, including excavating for seals, girders, projections, and subfoundation courses; for preparing foundation; and for backfilling and compacting space excavated and not occupied by the new structure, including subfoundation course.

(2) Payment also includes providing cofferdams, cribs, sheeting, shoring, bracing, pumping, and dewatering except, if the contract contains the applicable bid items, the department will pay separately for this work.

(3) Payment is full compensation for excavation, removed to an elevation between planes one foot above and below the plan elevation of the bottom of the footings or floor of culverts, or the invert of structural plate pipe or pipe arches as the plans show for the specific units.

(4) If the footing is stepped, or on a slope, payment is full compensation for excavation to an elevation between planes lying one foot above and below the plan elevation of the bottom of the footing, for each stepped section; or excavation between planes lying one foot above, below, and parallel to the slope established by the plan elevations for the bottom of the footing.

511 Temporary Shoring

511.1 Description

(1) This section describes designing and providing temporary shoring at locations the plans show.

511.2 Materials

(1) Provide a shoring design for each location where the plan requires temporary shoring. Conform to

construction.

511.4 Measurement

(1) The department will measure the Temporary Shoring bid items by the square foot acceptably completed at locations the plans show, measured as the area of exposed face in the plane of the shoring from the ground line in front of the shoring to a maximum of one foot above the retained grade. Shoring used for staged construction in multiple configurations without removal and reinstallation will be measured once based on the configuration with the largest area of exposed face.

511.5 Payment

(1) The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
511.1100	Temporary Shoring	SF
511.1200	Temporary Shoring (structure)	SF
511.1300	Temporary Shoring (location)	SF
511.2200	Temporary Shoring Left In Place (structure)	SF
511.2300	Temporary Shoring Left In Place (location)	SF

(2) Payment for the Temporary Shoring bid items is full compensation for designing and providing shoring; for providing a signed and sealed copy of the design; for removal or additional work required to leave in place; and for excavating, and backfilling.

(3) The department will not pay for temporary shoring for locations the plans do not show.

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3. **Should the payment information for Culvert Pipes found in ss-520.5.2(1),**

   "Payment for the Culvert Pipe bid items and Pipe Cattle Pass is full compensation for providing pipe; for joint seals, wraps, and couplers; for concrete collars not required under 520.3.1(5) or 608.3.3(10); for excavating and backfilling; for constructing the foundation; for associated dewatering and maintaining drainage; and for concrete cattle pass walkways."

   be revised to match the language in Storm Sewer in ss-608.5.2(1)?

   "Payment for the Storm Sewer Pipe bid items is full compensation for providing storm sewer; for joint seals, wraps and couplers; for concrete collars not required under 520.3.1(5) or 608.3.3(10); for excavating, except for rock excavation; for providing and removing sheeting and shoring; for constructing the foundation; for backfilling; for cleaning out; and for restoring the site.

   Potential edit to clean-up specs by adding *"...for providing and removing sheeting and shoring..."* to ss-520.5.2(1). Proposed change should not change intent.

520 Pipe Culverts

520.1 Description

(1) This section describes providing culvert pipe, cattle pass, and apron endwalls; providing and removing temporary culvert pipe; and cleaning existing culvert pipes.

520.2 Materials

520.2.1 Culvert Pipe

(1) Furnish culvert pipe fabricated in a plant listed on the APL consistent with the diameter the bid item

(6) Payment for the 520 bid items also includes water for compaction and dust control, except if the contract contains the Water bid item, the department will pay separately for water under 624.5.

520.5.2 Culvert Pipe and Cattle Pass

(1) Payment for the Culvert Pipe bid items and Pipe Cattle Pass is full compensation for providing pipe; for joint seals, wraps, and couplers; for concrete collars not required under 520.3.1(5) or 608.3.3(10); for excavating and backfilling; for constructing the foundation; for associated dewatering and maintaining drainage; and for concrete cattle pass walkways.

(2) If material from the typical roadway section is not suitable for trench backfill, the department will pay separately for trench backfill under other contract bid items.

(3) The department will pay separately for excavating unsuitable material and backfilling as specified in 520.3.2.1(10) as extra work.

608 Storm Sewer

608.1 Description

(1) This section describes providing new storm sewer and relaying existing storm sewer.

608.2 Materials

(3) The department will pay separately for excavating unsuitable material and backfilling as specified in 608.3.2(6) as extra work.

608.5.2 Pipe for Storm Sewer

(1) Payment for the Storm Sewer Pipe bid items is full compensation for providing storm sewer; for joint seals, wraps and couplers; for concrete collars not required under 520.3.1(5) or 608.3.3(10); for excavating, except for rock excavation; for providing and removing sheeting and shoring; for constructing the foundation; for backfilling; for cleaning out; and for restoring the site.

608.5.3 Rock Excavation for Storm Sewer

(1) Payment for Storm Sewer Rock Excavation is full compensation for rock excavation and disposal. If the contract does not contain the Storm Sewer Rock Excavation bid item, the department will pay for the required excavation as specified for extra work in 109.4.

608.5.4 Relaid Storm Sewer

(1) Payment for the Relaid Storm Sewer bid items is full compensation for providing relaid storm sewer; for excavating, removing, and backfilling existing storm sewer; for replacing pipe made unusable by contractor operations; for excavating new trench, except for rock excavation; for providing and removing sheeting and shoring; for constructing the foundation; for backfilling; for cleaning out; and for restoring the site.

509 Concrete Overlay and Structure Repair

(7) Form or saw contraction joints to the width, depth, and at locations the plans show and seal as the plans show. Begin sawing joints within 6 hours after placing the concrete, unless the engineer directs otherwise, and complete within 12 hours.

509.3.9.3 Curing Concrete Overlays

(4) ~~Cure concrete overlays as specified for curing concrete in floors, wearing surfaces, and sidewalks in 502.3.8, including fogging, and allow to cure for 3 days.~~ Cure concrete overlays as specified in 502.3.8.2.3(2), expect continue curing at least 4 days.

509.3.9.4 Opening to Traffic

(1) Do not allow traffic on the completed overlay for a minimum of ~~3~~ 4 days after placement. The engineer may extend this time if conditions warrant.

502 Concrete Bridges

502.3.8.2.3 Floors

(1) For structures under 100 feet in length, cure the concrete in floors, medians, and sidewalks for at least 7 days with polyethylene-coated burlap or other coated material conforming to 501.2.8. As soon as the concrete sets sufficiently to support the covering, place the coated burlap with the coated side up; or perform an initial cure of the concrete by using wetted burlap for at least 12 hours and then apply the coated burlap to a thoroughly wetted concrete surface. Place each strip or sheet of coated burlap so that it overlaps the preceding sheet by at least 12 inches. Secure the coated burlap covering in place. Ensure adequate moisture is present on the surface of the floor, wearing surfaces, or sidewalks beneath the curing material for the 7-day curing period.

(2) For Structures 100 feet or greater in length, cure the concrete in floors, medians, and sidewalks by the following method. Begin curing the horizontal concrete surfaces by fogging within 15 minutes of finishing and tining. Apply the fog or fine water spray so that no water marks result and no mortar washes from the concrete surface. Keep the concrete surface continuously wet by fogging until applying the burlap strips to the finished concrete. Wet the burlap immediately after placement. During the first day, until placing the soaker hose system, keep the burlap continuously wet. Through the remainder of the curing period, keep the burlap continuously wet with soaker hoses hooked up to a continuous water source. Inspect the burlap on a daily basis to ensure that the entire surface is moist. If necessary, alter the soaker hose system as needed to ensure the entire surface is moist. Do not use white polyethylene sheeting or plastic-coated burlap blankets. Continue moist curing at least 7 days.