

HIGHWAY WORK PROPOSAL

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

Proposal Number: **007**

<u>STATE ID</u>	<u>FEDERAL ID</u>	<u>PROJECT DESCRIPTION</u>	<u>HIGHWAY</u>	<u>COUNTY</u>
1060-27-74	WISC 2025597	I-94 East West, Early East Leg, 30th Street to 25th Street	IH 094	Milwaukee

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

Proposal Guaranty Required: \$1,000,000.00 Payable to: Wisconsin Department of Transportation	Attach Proposal Guaranty on back of this PAGE.
Bid Submittal Date: September 9, 2025 Time (Local Time): 11:00 am	Firm Name, Address, City, State, Zip Code
Contract Completion Time May 01, 2028	SAMPLE NOT FOR BIDDING PURPOSES
Assigned Disadvantaged Business Enterprise Goal 7%	This contract is subject to federal oversight.

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

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

Subscribed and sworn to before me this date _____

(Signature, Notary Public, State of Wisconsin)

(Bidder Signature)

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

(Print or Type Bidder Name)

(Date Commission Expires)

(Bidder Title)

Notary Seal

Type of Work: Removals, Milling, Grading, Aggregate, Concrete Pavement, Asphalt Pavement, Structure Replacement, Structure Rehabilitation, Curb and Gutter, Concrete Sidewalk, Storm Sewer, Erosion Control, Permanent Signing, Traffic Control, Pavement Marking, Lighting, Traffic Signals, ITS, Water, Retaining Wall, Restoration.	For Department Use Only
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://wisconsin.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://wisconsin.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 ExpediteTM generated schedule of items is not the same on each page.
 2. The check code printed on the printout of the ExpediteTM 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

DT1303 1/2006

Wisconsin Department of Transportation

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)

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

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

(Signature of Attorney-in-Fact)

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

DT1305 8/2003

Wisconsin Department of Transportation

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)

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.

[illegible]

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

Instructions for Certification

1. By signing and submitting this proposal, the prospective contractor is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective contractor shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective contractor to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department determined to enter into this transaction. If it is later determined that the contractor knowingly rendered an erroneous certification in addition to other remedies available to the Federal Government the department may terminate this transaction for cause or default.
4. The prospective contractor shall provide immediate written notice to the department to whom this proposal is submitted if at any time the prospective contractor learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
6. The prospective contractor agrees by submitting this proposal that, should this contract be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department entering into this transaction.
7. The prospective contractor further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," which is included as an addendum to PR- 1273 - "Required Contract Provisions Federal Aid Construction Contracts," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. The contractor may rely upon a certification of a prospective subcontractor/materials supplier that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A contractor may decide the method and frequency by which it determines the eligibility of its principals. Each contractor may, but is not required to, check the Disapproval List (telephone # 608/266/1631).

9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a contractor in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department may terminate this transaction for cause or default.

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

1. The prospective contractor certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offense enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
2. Where the prospective contractor is unable to certify to any of the statements in this certification, such prospective contractor shall attach an explanation to this proposal.

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1060-27-74, I-94 East West, Early East Leg, 30th Street to 25th Street, IH 94, in Milwaukee County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 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 (20250108)

2. Scope of Work.

The work under this contract shall consist of removals, grading, dense graded base, concrete pavement, concrete curb and gutter, concrete sidewalk, concrete barrier, HMA pavement, storm sewer, combined sewer, watermain, water hydrants, erosion control, permanent signing, traffic signals, traffic control, pavement marking, street lighting, communication conduit, structures, bridges, retaining walls, restoration and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

Structures:

Bridges	Retaining Walls
B-40-513_5	R-40-761
B-40-1083	R-40-767 (Stage 1)

3. Mandatory Pre-Bid Meeting.

Add the following to standard spec 102.3.1:

Prospective bidders are required to attend a mandatory pre-bid meeting at 1:30 PM, Tuesday, August 26, 2025 at Tommy G. Thompson Youth Center, 640 South 84th Street, West Allis, WI 53214.

No meeting minutes will be prepared. Issues discovered at the meeting will be handled by addendum.

stp-102-010 (20150630)

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.

The contract time for completion is based on an expedited work schedule and may require extraordinary forces and equipment. Included in this Prosecution and Progress article are interim and final completion dates. These dates indicate that work efforts will possibly require multiple or concurrent controlling operations to occur at the same time. This information is included to assist the contractor and its subcontractors and shall not be interpreted as a demonstration of specified means and methods or work periods other than intermediate and completion dates.

Construction on this project is anticipated to occur over the years 2025, 2026, 2027, and 2028. This project is considered a year-round contract and will not include a winter suspension. The number of adverse weather days per 108.10.2.2(1) will not be modified.

Replace standard spec 108.10.2.2(2) with the following:

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

Replace standard spec 108.10.2.2(3) with the following:

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

Add the following to 108.10.2.2 Extension of Contract Time for Severe Weather as paragraph (4)

(4) For calendar day or completion date contracts, including interim completion dates, where the closure period does not include the entire calendar month, the number of anticipated adverse weather days tabulated in 108.10.2.2(1) will be prorated by the ratio of contract days to the total calendar days for the given month. Where the prorated days results in a partial day, that day will be rounded up to the next whole calendar day.

Be advised that there may be multiple mobilizations and/or remobilizations to complete construction operations, for example such items as: grading, structures, concrete pavement, HMA paving, traffic control, signing, temporary and permanent pavement marking, finishing items and other incidental items. No additional payment will be made, by the department, for additional mobilizations.

Do not begin Stage 1A bridge demolition, close 27th Street, or impact freeway lanes or shoulders with lane, shoulder, or full freeway closures prior to February 1, 2026, unless approved by the engineer.

Install traffic mitigation improvements at 44th Street, 32nd Street, 13th Street, and at intersection of Greenfield Avenue and 27th Street prior to closing 27th Street to traffic. Mitigation measures shall be maintained and restored as necessary throughout construction.

Do not begin Stage 1B work or close freeway lanes, shoulders, or ramps prior to March 1, 2026, unless approved by the engineer.

Do not shift traffic into the Stage 3A configuration prior to July 6, 2026, unless approved by the engineer.

Do not encroach on parcel 1 as identified on R/W plat 1060-27-71 with any personnel, equipment or materials prior to completion of real estate acquisition, anticipated to be complete prior to November 1, 2025.

Do not begin retaining wall R-40-761 grading or construction between Station 2000+00 and 2007+20 prior to We Energies removal of poles and circuits within the project area scheduled for completion by January 1, 2027, unless approved by the engineer.

Do not begin IH 94 EB and IH 94 WB mainline mill and overlay prior to April 1, 2027 as shown in Stage 5 of the plans. No freeway lane restrictions, full freeway closures, system ramp closures, or service ramp closures are permitted between December 11, 2026 and April 1, 2027.

Maintain access to We Energies and ATC service vehicles at all times to the existing We Energies substation located at 2928 W. Greves Street.

Maintain access to We Energies and ATC service vehicles at all times to the existing We Energies/ATC substation located at 2701 W. St. Paul Avenue.

Maintain access to all other We Energies/ATC facilities located within the project area at all times.

Do not close or restrict access to 32nd Street.

We Energies/ATC Outage Restrictions for Segment of R-40-761 Under Existing Greves Street Substation Feeder Lines

Maintain OSHA safe work site precautions and safe working clearance to all power facilities, including substations, underground circuits and overhead circuits. The contractor must follow the measures prescribed by latest OSHA requirement for all work in proximity to power facilities, which may include de-energization and/or temporary relocation of overhead feeder lines. It is the contractor's responsibility to determine the distance that needs to be maintained for the type of equipment being used.

Initiation and termination of the requested outage may require supplemental outages of adjacent transmission and/or distribution circuits. These outages will require coordination with both We Energies and ATC and are restricted by temperature, operating conditions, and customer-related restrictions. As such, no particular outage start date or end date can be guaranteed. For outage requests requiring action by both We Energies and ATC, the more restrictive outage date range and advanced notification requirements shall apply. The contractor should be prepared to alter work plan as necessary.

No portion of any outage to We Energies facilities may occur between May 15 and September 15, unless otherwise approved in writing by We Energies.

No portion of any outage to ATC facilities may occur between January 1 and September 30, unless otherwise approved in writing by ATC.

Advanced notification is required for any required outages of We Energies and/or ATC Facilities. Refer to section 8. Utilities, or other relevant sections of the specifications, for requirements of requesting outages of We Energies or ATC facilities

Interim and Final Completion of Work

Interim Completion – R-40-761 from Sta 2007+20 to Sta 2013+15: April 30, 2027

Complete construction operations for retaining wall R-40-761 and vacate site of all construction debris, materials and construction equipment from Station 2007+20 to Station 2013+15 between Greves Street and the wall face of R-40-761 by April 30, 2027. Contractor shall hand over vacated site to ATC by 12:01 AM May 1, 2027. The contractor shall refrain from all use and occupation of the area following handover to ATC. Do not hand over site until completing the following work:

- R-40-761 from Station 2007+20 to Station 2012+30, including, but not limited to, all soldier piles, tieback anchors, cast in place concrete facing, concrete coping, railing pipe, and all other appurtenances required for completed construction of R-40-761 as shown in the retaining wall plans
- R-40-761 from Station 2012+30 to Station 2013+15, including, but not limited to, concrete leveling pad, MSE wall reinforcement straps, structural backfill, lightweight foamed concrete fill, MSE wall precast concrete facing panels, moment slab, railing pipe, temporary grading behind wall alignment, and all other appurtenances required for completed construction of R-40-761 as shown in the retaining wall plans
- Finished grading, topsoil, temporary seed and mulch from Station 2007+20 to Station 2013+15 between the R-40-761 wall face and Greves Street as shown in the plans
- Removal of all construction debris, material and construction equipment from the area between the R-40-761 wall face and Greves Street between Station 2007+20 and Station 2013+15

If the contractor fails to complete the work necessary to complete construction operations for retaining wall R-40-761 and vacate site of all construction debris, materials and construction equipment from Station 2007+20 to Station 2013+15 between Greves Street and the wall face of R-40-761 by April 30, 2027, the department will assess the contractor \$5,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM on May 1, 2027. 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.

Interim Completion – R-40-761 from Sta 2000+00 to Sta 2007+20: March 31, 2028

Complete construction operations for retaining wall R-40-761 and vacate site of all construction debris, materials and construction equipment from Station 2000+00 to Station 2007+20 between Greves Street and the wall face of R-40-761 by March 31, 2028. Contractor shall handover vacated site to We Energies/ATC by 12:01 AM April 1, 2028. The contractor shall refrain from all use and occupation of the area following handover to We Energies/ATC. Do not handover site until completing the following work:

- R-40-761 from Station 2000+00 to Station 2007+20, including, but not limited to, all soldier piles, tieback anchors, cast in place concrete facing, concrete coping, railing pipe, and all other appurtenances required for completed construction of R-40-761 as shown in the retaining wall plans
- Finished grading, topsoil, temporary seed and mulch from Station 2000+00 to Station 2007+20 between the R-40-761 wall face and Greves Street as shown in the plans
- Removal of all construction debris, material and construction equipment from the area between the R-40-761 wall face and Greves Street between Station 2000+00 and Station 2007+20

If the contractor fails to complete the work necessary to complete construction operations for retaining wall R-40-761 and vacate site of all construction debris, materials and construction equipment from Station 2000+00 to Station 2007+20 between Greves Street and the wall face of R-40-761 by March 31, 2028, the department will assess the contractor \$5,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM on April 1, 2028. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01

Interim Completion and Liquidated Damages – Segment of R-40-761 Under Existing Greves Street Substation Feeder Lines: 75 Calendar Days

For the segment of retaining wall R-40-761 that requires de-energization and temporary removal of overhead feeder lines, the contractor has a maximum of 75 calendar days to complete retaining wall construction to the wall facing joint locations beyond the OSHA safe working clearance restriction, including any required partial wall construction and/or grading beyond these limits to match into existing site conditions. The Contractor shall verify the voltage of the overhead lines with ATC and determine the Station limits of completed wall R-40-761 necessitating the outage; the approximate limits as estimated by the engineer are from Station 2003+00 to Station 2004+20. The 75 calendar days begins upon written confirmation from the utilities that the overhead utility lines have been removed in the area that requires the outage.

No time extensions will be granted for adverse weather conditions; for delays in material deliveries; or for labor disputes unless it can be shown that such disputes are industry wide.

The Department will consider the conditions of the interim completion met upon completion of all wall activities requiring the outage and written notification from the contractor to the utilities that they may restore their facilities.

Do not notify the utility until completing the following work:

- R-40-761 to a cast in place concrete wall facing joint location beyond the OSHA safe working clearance restriction as verified by the contractor, including, but not limited to, all soldier piles, tieback anchors, cast in place concrete facing, concrete coping, railing pipe, removal of temporary shoring necessary to facilitate construction, and all other appurtenances required for completed construction of R-40-761 as shown in the retaining wall plans
- R-40-761 partial wall construction and temporary grading as needed to match into existing site conditions
- Finished grading, topsoil, temporary seed and mulch between the R-40-761 wall face and the north limit of the existing Greves Street substation, as shown in the plans.
- Removal of all construction debris, material and construction equipment from the area between the R-40-761 wall face and the north limit of the existing Greves Street substation

If the contractor fails to complete construction of retaining wall R-40-761 to the location necessary to allow the utilities to initiate the process to restore the facilities impacted by the outage, the department will assess the contractor \$10,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 75 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the utilities are not able to initiate the process to restore the facilities impacted by the outage beyond 12:01 AM.

Interim Completion and Liquidated Damages – IH 94 Westbound Stage 3A Outside Lane Reduction to Construct B-40-1083 North Abutment Drilled Shaft Foundations: 14 Calendar Days

The IH 94 Westbound Outside Lane and the Marquette Interchange Northbound to Westbound Ramp may be closed to through traffic for a maximum of 14 consecutive calendar days to facilitate B-40-1083 north abutment drilled shaft foundation construction as shown in stage 3A.

If the contractor fails to complete the north abutment drilled shaft foundation construction necessary to reopen the Marquette Interchange Northbound to Westbound Ramp and IH 94 Westbound to three (3) lanes of traffic within 14 consecutive calendar days of the closure date, the department will assess the contractor \$40,000 in interim liquidated damages for each calendar day beyond 14 calendar days. An entire calendar day will be charged for any period of time within a calendar day that the road remains closed beyond 12:01 AM.

Interim Completion and Liquidated Damages – IH 94 Mainline: November 20, 2026

Complete construction operations on IH 94 to the stage necessary to reopen all lanes in their interim location by November 20, 2026 including:

- All mainline freeway work shown in Stages 1, 2, 3, and 4
- Opening the Stadium Interchange IH 94 EB entrance ramp from STH 175 SB (Ramp N-E) and the 35th Street eastbound entrance ramp to traffic
- Interim pavement markings
- Final signage, concrete barrier, and concrete barrier temporary precast left in place

If the contractor fails to complete the work necessary to reopen IH 94 to all lanes in their interim location by November 20, 2026, the department will assess the contractor \$40,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM on November 21, 2026. 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.

Interim Completion and Liquidated Damages – Ramps and Local Roads: November 20, 2026

Complete construction operations on Ramp JD, St. Paul Avenue, 27th Street north of St. Paul Avenue, and 28th Street to the stage necessary to reopen it to all lanes of through traffic by November 20, 2026. Do not reopen until completing the following work:

- Roadway pavement, curb & gutter, sidewalk, driveway aprons
- Permanent signing, lighting, and pavement marking
- Temporary traffic signals

If the contractor fails to complete the work necessary to reopen St. Paul Avenue, 27th Street north of St. Paul Avenue, and 28th Street to all lanes of traffic by November 20, 2026, the department will assess the contractor \$10,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM on November 21, 2026. 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.

Interim Completion and Liquidated Damages – B-40-1083: December 11, 2026

Complete construction operations on B-40-1083 and 27th Street south of St. Paul Avenue to the stage necessary to reopen it to all lanes of through traffic by December 11, 2026. Do not reopen until completing the following work:

- Complete bridge B-40-1083
- Roadway pavement, curb & gutter, sidewalk, driveway aprons
- Permanent signing, lighting, and pavement marking

If the contractor fails to complete the work necessary to reopen 27th Street south of St. Paul Avenue to all lanes of traffic by December 11, 2026, the department will assess the contractor \$10,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM on December 12, 2026. 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.

Interim Completion and Liquidated Damages – IH 94 Eastbound and Westbound Mill and Overlay: June 16, 2027

Complete construction operations on IH 94 Eastbound and Westbound Mill and Overlay from the Stadium Interchange bridges to the Marquette Interchange west pavement limits as shown in Stage 5 of the plans by June 16, 2027. This work cannot begin until Stage 4 work is completed and is to be completed under nighttime or off-peak lane closures; all lanes and ramps must be opened to traffic during peak hours. The department will consider the conditions of the interim completion met upon completion of the following work:

- Milling of existing asphaltic surface
- Paving of new asphaltic surface
- Installation of final pavement markings and all lanes open to traffic in final configuration

If the contractor fails to complete the work necessary to reopen IH 94 Eastbound and Westbound Mill and Overlay to traffic in final lane configuration by June 16, 2027, the department will assess the contractor \$10,000 in interim liquidated damages for each calendar day the contract work remains incomplete beyond 12:01 AM on June 17, 2027. 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.

Enhanced Final Liquidated Damages

Replace standard spec 108.11 paragraph (3) as follows:

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

Schedule of Operations

Critical Path Method Progress Schedule

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

Replace standard spec 108.10.2.2(2) with the following:

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

Anticipated Schedule Project 1060-27-74

Traffic shifts shown in a given stage may occur at different times during that stage depending on the controlling elements for a given traffic movement. The department anticipates that the schedule for each stage shall be as follows:

Conform to the construction staging as shown in the construction staging plans and as described herein unless the engineer approves modifications to the schedule in writing. Do not move to the next stage until all work in the current stage is completed or as approved by the engineer.

Pre-Stage Construction:

Freeway and Ramp Construction

- Construct bridge B-40-1083 Pier 1 under existing B-40-513_5 superstructure
- Begin retaining wall R-40-761 excavation
- Begin grading for I-94 eastbound bypass and interim ramp LC pavement

Local Road Construction

- None

Stage 1A Construction:

Freeway and Ramp Construction

- Support existing bridge B-40-513_5 girders on B-40-1083 Pier 1
- Remove existing bridge B-40-513_5 deck and superstructure north of B-40-1083 Pier 1
- Remove existing bridge B-40-043 deck and superstructure over I-94
- Remove existing bridge B-40-513_5 Pier 17 and Pier 18
- Begin construction of bridge B-40-1083 Pier 2
- Begin construction of storm sewer within I-94 eastbound bypass pavement and interim ramp LC pavement limits
- Install cover plates temporary over future Ramp LC inlets
- Begin construction of retaining wall R-40-761
- Continue grading for I-94 eastbound bypass pavement and interim ramp LC

Local Road Construction

- None

Stage 1B Construction:

Freeway and Ramp Construction

- Construct bridge B-40-1083 Pier 3
- Complete construction of bridge B-40-1083 Pier 2
- Remove existing bridge B-40-057 southwest wingwall
- Remove existing retaining wall R-40-33
- Install temporary shoring behind existing retaining wall
- Remove portion of retaining wall R-40-10
- Backfill area within wall removal limits and remove temporary shoring
- Construct shoring southwest of B-40-057
- Complete grading for I-94 eastbound bypass pavement and interim ramp LC
- Construct I-94 eastbound bypass pavement and interim ramp LC pavement
- Construct storm MH 1060 and 2008 and make connection to existing manhole
- Continue construction of retaining wall R-40-761

Local Road Construction

- None

Stage 2 Construction:

Freeway and Ramp Construction

- Remove existing bridge B-40-043 median pier

- Remove existing median barrier
- Construct storm sewer in existing median
- Construct full depth median pavement
- Mill and overlay existing eastbound pavement with temporary asphalt pavement
- Continue construction of retaining wall R-40-761

Local Road Construction

- None

Stage 3A Construction:

Freeway and Ramp Construction

- Construct bridge B-40-1083 north abutment drilled shaft foundations
- Continue construction of retaining wall R-40-761

Local Road Construction

- Begin Construction of W. St. Paul Avenue, N. 28th Street, and N. 27th Street (South of St. Paul Avenue)

Stage 3B Construction:

Freeway and Ramp Construction

- Construct bridge B-40-1083 north abutment
- Construct storm sewer in westbound pavement
- Construct permanent barrier in westbound pavement
- Construct Ramp JD pavement
- Continue construction of retaining wall R-40-761

Local Road Construction

- Continue construction of W. St. Paul Avenue, N. 28th Street, and N. 27th Street (South of St. Paul Avenue)

Stage 3C Construction:

Freeway and Ramp Construction

- Complete construction of bridge B-40-1083 north abutment
- Complete construction of storm sewer in westbound pavement
- Complete construction of permanent barrier in westbound pavement
- Complete construction of Ramp JD pavement
- Continue construction of retaining wall R-40-761

Local Road Construction

- Construct north leg of intersection of W. St. Paul Avenue and N. 27th Street

Stage 4 Construction:

Freeway and Ramp Construction

- Construct bridge B-40-1083 superstructure and deck
- Construct bridge B-40-513_5 deck replacement
- Construct I-94 eastbound mainline pavement
- Remove cover plates temporary from Ramp LC inlets
- Continue construction of retaining wall R-40-761
- Begin construction of retaining wall R-40-767

Local Road Construction

- Complete construction of N. 27th Street (South of St. Paul Avenue)

Stage 5 Construction (2027 Construction Year):

Freeway and Ramp Construction

- Mill and overlay IH 94 EB and IH 94 WB mainline pavement between the Stadium Interchange structures and the Marquette Interchange west pavement limits.
- Complete construction of retaining wall R-40-761 and R-40-767

Local Road Construction

- None

Contractor Coordination

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

Notify the engineer, businesses and residents that live along St. Paul Avenue, Greves Street, 25th Street (Lower), 27th Street, 28th Street five business days in advance of restricting access to their houses or business.

Notify the engineer if there are any changes in the schedule, early completions, or cancellations of scheduled work. Coordinate the locations of messages of portable changeable message sign with the engineer and WisDOT TMC. Notify the engineer of proposed changes for alternate routes and detours and provide a revised signing plan for the review by and approval of the engineer.

Obtain prior acceptance from the engineer and the WisDOT Traffic Management Center for Full Freeway Closures. Notify local emergency and police agencies seven calendar days prior to freeway closure.

Demolition Contracts (By Others)

There are three properties within the project limits that will be razed and removed concurrently with the project. The demolition contractor is anticipated to be on site until the anticipated completion dates.

Plat I.D.	Parcel Number	Site Address	Anticipated Completion Date
1060-27-21	3 & 7	2640 W. Greves Street	October 15, 2025
1060-27-21	N/A	2401 W. St. Paul Avenue	December 31, 2025
1060-27-21	2	2620 W. St. Paul Avenue	June 7, 2026

Mill and HMA Overlay Phased Paving Requirements

Place HMA pavement on milled surfaces prior to opening to traffic. Driving on milled surface is not permitted on the freeway or ramps. Lane closures shall not be reopened to traffic without the lanes being paved.

Pave the outside lane and adjacent shoulder in one operation to eliminate construction joint.

Where placing new HMA pavement adjacent to existing HMA pavement or previously placed HMA pavement, mill the existing mat, or mill back up to 2 inches of previously placed HMA pavement, to create a full-depth joint.

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.

- B-40-43
- B-40-513

Protection of Endangered Bats (Tree Clearing)

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

Ensure all operators, employees, and subcontractors working in areas of known or presumed bat habitat are aware of environmental commitments and avoidance and minimization measures (AMMs) to protect both bats and their habitat.

Direct temporary lighting, if used, away from wooded areas during the bat active season April 15 to October 31, both dates inclusive.

To avoid adverse impacts upon protected bats, no tree clearing is allowed between April 15 and October 31, both dates inclusive. If the required tree clearing is not completed by April 14, the department will suspend all tree clearing and associated work directly impacted by clearing.

Tree clearing is limited to that which is specified in the plans. Contractor means and methods to remove additional trees will not be allowed. If it is determined that additional trees with a 3-inch or greater diameter at breast height (dbh) need to be removed beyond contractor means and methods, notify the engineer to coordinate with the WisDOT REC to determine if consultation with United States Fish and Wildlife Service (USFWS) is required. The contractor must be aware that the WisDOT REC and/or USFWS may not permit modifications.

Due to potential for erosion, do not perform grubbing operations at the time of tree clearing unless grading activities will commence in those areas immediately following the tree clearing, or as otherwise approved by the engineer. Provide information for the grubbing and grading activities, including the schedule of operations, in the Erosion Control Implementation Plan (ECIP).

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

Threatened and Endangered Species – Rusty Patched Bumble Bee

The Rusty patched bumble bee (*Bombus affinis*) may be present within the project limits. The project includes disturbing low-quality Rusty patched bumble bee feeding habitat and woodlands potentially suitable for Rusty patched bumble bee nesting or overwintering habitat. To minimize impacts to the Rusty patched bumble bee, trees cleared between November 1 and April 14 will be left in place until the Rusty

patched bumble bee active season (April 15 to October 10) to avoid disturbing the overwintering habitat of the Rusty patched bumble bee.

Human Remains Discovery

If human remains are inadvertently/accidentally discovered during implementation of the Project, all ground disturbing activities in the immediate area of the discovery shall halt until the following actions have been carried out, in accordance with Wisconsin Statute §157.70 and the Native American Graves Protection and Repatriation Act, as required. WisDOT Cultural Resource Team will be contacted immediately if human remains are discovered. WisDOT shall immediately implement measures to protect the human remains from inclement weather and vandalism and notify appropriate law enforcement officials to determine whether or not the remains are subject to a criminal investigation by local or federal authorities.

WisDOT shall provide sufficient information to allow law enforcement to determine if the remains are or are not subject to a criminal investigation by local or federal authorities.

1. If it is determined the human remains are not subject to a criminal investigation by local or federal authorities, FHWA/WisDOT shall obtain the services of qualified cultural resource professionals to comply with all applicable federal (Native American Graves Protection and Repatriation Act when relevant), state (Wisconsin Statute 157.70), and local laws governing the discovery and disposition of human remains.
2. If it is determined Native American human remains or funerary objects have been discovered in a parcel/land owned by the federal government, FHWA/WisDOT shall immediately notify the appropriate federal land manager, affected Indian tribes, and consulting parties of this PA (within 24 to 48 hours; not including a holiday).
3. If it is determined human remains have been discovered on state, state sub-division, or private lands FHWA/WisDOT shall immediately notify the SHPO, and the consulting parties of this PA (within 24 to 48 hours; not including a holiday).

Before making any final decision regarding the treatment of human remains, FHWA/WisDOT shall within five (5) business days (not including a federal holiday) after discovery of such remains initiate consultation with the Council, SHPO, Indian tribes (if applicable), and Consulting Parties to prepare and implement treatment measures and treatment plans in accordance with applicable federal, state (Wisconsin Statute 157.70) and local laws.

Maintenance

Provide the Wisconsin State Patrol, Milwaukee County Highway Maintenance, the City of Milwaukee Police Department, and Milwaukee County Sheriff's Department with a 24-hour emergency contact number for when maintenance is required.

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

Winter Maintenance

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

General Prosecution

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

For base patching operations, where the existing concrete pavement has an asphalt overlay, the base patch shall be constructed from top of asphalt surface to bottom of existing concrete pavement.

5. Lane Rental Fee Assessment.

A General

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

The contractor will not incur Lane Rental Fee Assessment for closing lanes, system ramps or service ramps necessary for full freeway closures while the IH 94 Full Freeway Closure Fee application is in effect. All Lane Rental Fee Assessments may be applied when one or more freeway lanes are open to traffic.

The allowable lane closure times are shown in the Traffic article.

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

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

B Lane Rental Fee Assessment

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

- IH 94 Nighttime Lane Closure Extending into Weekday Peak Hours
 - 4 lanes to 3 lanes (WB): \$6,000 per lane, per direction of travel, per hour broken into 15-minute increments
 - 3 lanes to 2 lanes: \$10,000 per lane, per direction of travel, per hour broken into 15-minute increments
 - 2 lanes to 1 lane: \$16,000 per lane, per direction of travel, per hour broken into 15-minute increments
- IH 94 Nighttime Lane Closure Extending into Weekend Peak Hours
 - \$8,000 per lane, per direction of travel, per hour broken into 15-minute increments
- IH 794 Off-Peak/Nighttime Lane Closure extending in Peak Hours *
 - \$4,000 per lane, per direction of travel, per hour broken into 15-minute increments
- WIS 175 Off-Peak/Nighttime Lane Closure extending in Peak Hours *
 - \$3,000 per lane, per direction of travel, per hour broken into 15-minute increments
- Local Road Off-Peak/ Full Closure extending in Peak Hours
 - \$1,000 per lane, per direction of travel, per hour broken into 15-minute increments
- Marquette IC N-W System Ramp Full Closure *
 - \$6,000 per ramp, per direction of travel, per hour broken into 15-minute increments
- Marquette IC S-W System Ramp Full Closure *
 - \$5,000 per ramp, per direction of travel, per hour broken into 15-minute increments
- IH 94/WIS 175 System Ramp Full Closure *
 - \$4,000 per ramp, per direction of travel, per hour broken into 15-minute increments
- IH 94 Service Ramp Full Closure *
 - \$3,000 per ramp, per direction of travel, per hour broken into 15-minute increments

- IH 94 Full Freeway Closure Extending into Weekday Peak Hours
 - 4:30 AM to 5:30 AM: \$4,000 per lane, per direction of travel, per hour broken into 15-minute increments
 - After 5:30 AM: \$10,000 per lane, per direction of travel, per hour broken into 15-minute increments
- IH 94 Full Freeway Closure Extending into Weekend Peak Hours
 - 6:00 AM to 8:00 AM: \$4,000 per lane, per direction of travel, per hour broken into 15-minute increments
 - After 8:00 AM: \$8,000 per lane, per direction of travel, per hour broken into 15-minute increments

**Not Applicable during IH 94 Full Freeway Closures*

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

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

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

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

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

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6. Traffic.

Keep IH 94, IH 43, IH 794, all system ramps and all service ramps open to through traffic at all times for the duration of this project except as noted below and in the Prosecution and Progress article in these special provisions.

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

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

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

Do not stage vehicles, equipment, or materials within 10 feet of the existing fence at the 28th Street Substation or the existing Greves Street Substation.

Maintain emergency vehicle access at all times.

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

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

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

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

Except for railroad crossings DOT # 386506F, 386505Y, 386510V, 386511C where STSP 107-034 applies: Do not place any items within 50-feet of the railroad right-of-way, including items that could foul the same area. Including but not limited to signing, equipment, or material. This includes at-grade crossings and structures with RR under or over. If this is not adhered to, additional Railroad Protective Liability Insurance will be required of the contractor and incidental to the project. Crossing of the railroad tracks at W. Greves Street (DOT #386506F) is prohibited.

Residential and Business Property Access

Maintain access to properties along St. Paul Avenue, Greves Street, 25th Street, 27th Street, 28th Street, and all adjacent side streets, and any other local road effected by construction for local residents, businesses, and emergency vehicles. Maintain and keep open the access to all driveways and parking lots where alternative access is not available at all times by closing one driveway at a time, building half the driveway at a time and/or plating concrete work. Plating of concrete work, as directed by the engineer, is included in the item that is being plated. In parking lots that are being reconstructed, stage operations so that parking and access is maintained on existing or proposed base aggregate or pavement.

Inform engineer, property owners and tenants at least 48 hours prior to removing a driveway approach that serves that property. Schedule sidewalk and driveway approach removal and replacement so that the time lapse between removal and replacement is minimal.

Do not close residential approaches or remove from service without giving sufficient notice to the occupants of the premises to remove their vehicles prior to driveway removal or closing of the driveway approach access. If necessary, make other access arrangements, agreed to in writing and signed by the contractor and the property owner serviced by the driveway. Obtain approval from the engineer prior to alternating construction sequencing.

Pedestrian Access

Keep pedestrian facilities open unless otherwise shown on the plans, or to facilitate the removal of structures and erection of girders or as approved by the engineer. Maintain pedestrian access to adjacent properties, businesses, schools, and at bus stops or provide where necessary, as directed by the engineer. Protect pedestrians from falling debris at all times when pedestrian facilities are open.

Provide adequate temporary pedestrian facilities as required under Section 444 of the standard specifications and bridging between the curb and right-of-way line over freshly paved concrete or other obstructions in the sidewalk area, as directed by the engineer.

Construct the temporary surface to meet Americans with Disabilities Act Accessibility Guidelines (ADAAG) requirements. Gravel or base course material is not acceptable. The Temporary Pedestrian Surface bid items are payment for maintaining crosswalks and sidewalks through the construction zone.

Maintain pedestrian movements crossing the construction zone at all intersections at all times, unless otherwise directed by the engineer. At all times, ADAAG accessible pedestrian walkways shall be maintained free from mud, sand, construction debris, and construction equipment. Closures of sidewalk must be approved by the engineer and conform to signing shown on the traffic control plan. At locations where crosswalks exist on both sides of the intersection, closure of one of the two crosswalks is permitted as long as all other crossings are completely open. At intersections where only one crosswalk exists, stage work to maintain a crosswalk at all times.

Traffic Staging

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

Pre-Stage Traffic:

Freeway and Ramp Traffic

- Maintain existing traffic pattern

Local Road Traffic

- Close Greves Street west of 27th Street

Stage 1A Traffic:

Freeway and Ramp Traffic

- Close IH 94 EB outside shoulder
- Close IH 94 EB exit to 26th Street (Ramp LC)
- Full freeway closures are anticipated for demolition of existing B-40-513_5 and B-40-043 deck and superstructures

Local Road Traffic

- Close 27th Street south of St. Paul Avenue
- Greves Street west of 27th Street remains closed
- Cover traffic signal heads at the intersection of 27th Street and St. Paul Avenue. Refer to Temporary Traffic Signal Plans for further instruction

Stage 1B Traffic:

Freeway and Ramp Traffic

- Reduce IH 94 EB to two lanes
- Close IH EB Entrance from 35th Street (Ramp GB)
- IH 94 EB exit to 26th Street (Ramp LC) remains closed

Local Road Traffic

- 27th Street south of St. Paul Avenue remains closed
- Greves Street west of 27th Street remains closed

Stage 2 Traffic:

Freeway and Ramp Traffic

- IH 94 EB remains two lanes and shifts outside to temporary bypass pavement
- Reduce IH 94 WB to three lanes
- Open Ramp LC
- Close IH 94 EB entrance ramp from STH 175 SB (Stadium Interchange Ramp N-E)
- Ramp GB remains closed
- A full WB freeway closure is anticipated for demolition of existing B-40-043 median pier.

Local Road Traffic

- 27th Street south of St. Paul Avenue remains closed
- Greves Street west of 27th Street remains closed

Stage 3A Traffic:

Freeway and Ramp Traffic

- IH 94 EB remains two lanes and maintain EB traffic on outside temporary bypass pavement
- Reduce IH 94 WB to two lanes and shift WB traffic to temporary median pavement
- Close IH 94 WB ramp from IH 43/IH 94 NB (Marquette Interchange Ramp S-W)
- Close IH 94 WB entrance ramp from Tory Hill Street
- Close IH 94 WB entrance from St. Paul Avenue (Ramp JD)
- Stadium Interchange Ramp N-E and Ramp GB remain closed

Local Road Traffic

- Close St. Paul Avenue between 29th Street and west of 27th Street
- Close south half of St. Paul between 27th Street and IH 94 and maintain EB traffic 27th Street to 26th Street
- Close 28th Street south of Clybourn Avenue
- Close intersection of St. Paul Avenue and 29th Street
- 27th Street south of St. Paul Avenue remains closed
- 27th Street is open to southbound traffic between Clybourn Avenue and St. Paul Avenue
- Greves Street west of 27th Street remains closed
- De-energize existing traffic signal at the intersection of 27th Street and St. Paul Avenue. Refer to Stage 3C Temporary Traffic Signal Plans for further instruction

Stage 3B Traffic:

Freeway and Ramp Traffic

- Open IH 94 WB to three lanes and remains on temporary median pavement
- IH 94 EB remains two lanes and maintain EB traffic on outside temporary bypass pavement
- Open Marquette Interchange Ramp S-W
- Open IH 94 WB entrance from Tory Hill Street
- Stadium Interchange Ramp N-E, Ramp GB and Ramp JD remain closed
- Off peak lane closures or a full WB closure may be required for tie back anchor installation

Local Road Traffic

- Same as 3A

Stage 3C Traffic:

Freeway and Ramp Traffic

- Same as Stage 3B

Local Road Traffic

- Close north half of St. Paul between immediately west of 27th Street and IH 94
- Close 27th Street north of St. Paul Avenue
- Open intersection of St. Paul Avenue and 29th Street
- Open St. Paul Avenue to EB traffic only, WB closed 26th Street to immediately west of 27th Street
- Open 28th Street – access to St. Paul Avenue is permanently removed
- 27th Street south of St. Paul Avenue remains closed
- Install temporary traffic signal at the intersection of 27th Street and St. Paul Avenue. Refer to Temporary Traffic Signal Plans for further instruction. Temporary signal to be operational by the end of Stage 3

Stage 4 Traffic:

Freeway and Ramp Traffic

- IH 94 EB remains two lanes and maintain EB traffic on outside temporary bypass pavement
- IH 94 WB remains three lanes and shifts off of temporary median pavement
- Stadium Interchange Ramp N-E and Ramp GB remain closed
- Open Ramp JD
- Full freeway closures are anticipated for construction of B-40-1083 superstructure, B-40-1083 and B-40-513_5 deck

Local Road Traffic

- Open 27th Street north of St. Paul Avenue
- Open St. Paul Avenue to WB traffic

- 27th Street south of St. Paul Avenue remains closed
- Greves Street west of 27th Street remains closed

Stage 5 Traffic (2027 Construction Year):

Freeway and Ramp Traffic

- IH 94 EB and WB to complete mill and overlay work using nighttime or off peak lane closures, as directed by the engineer

Local Road Traffic

- N/A

Wisconsin Lane Closure System Advance Notification

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

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

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

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

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Notify the engineer and TMP Team Lead, if there are any changes in the schedule, early completions, or cancellations of scheduled work.

Notify the engineer and SEF Construction Program Work Zone and Traffic Engineer, Stephanie Leraneth, (414) 750-1397, if there are any changes in the schedule, early completions, or cancellations of scheduled work. Coordinate the locations of messages of portable changeable message sign with engineer and WisDOT Traffic Management Center (414) 227-2142 (tmc@dot.wi.gov). Notify WisDOT Signal Operations, (414) 750-2605, and WisDOT electrical Field Unit, (414) 266-1170, regarding changes for alternate routes and detours.

Ramp Closures

All entrance and exit ramps shall be posted three business days in advance of their closure with dates and time of closure.

No two consecutive entrance ramps or consecutive exit ramps may be closed unless it is shown in the traffic control plans or approved by the engineer.

Portable Changeable Message Signs

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

1.1 Portable Changeable Message Signs with Cellular Communications

Portable changeable message signs with cellular communications provided under this contract will be used for incident management or as required by the engineer and are to be operated by the Wisconsin State Patrol and the Traffic Management Center (TMC). Place the required portable changeable message signs at the specified locations in the plan at least one week prior to construction. Contact the TMC at (414) 227-2142 (tmc@dot.wi.gov) for communications system integration and testing.

Freeway and Ramp Work Restrictions

Definitions

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

System Ramps	Freeway to freeway ramps
Service Ramps	Freeway to/from local road ramps
Weekday Peak Hours	
5:30 AM – 7:00 PM	Monday, Tuesday, Wednesday, Thursday
5:30 AM – 11:00 PM	Friday
Weekend Peak Hours	
8:00 AM – 7:00 PM	Saturday
8:00 AM – 7:00 PM	Sunday
Weekday Off-Peak Hours	
7:00 PM – 9:30 PM	Monday, Tuesday, Wednesday, Thursday
Weekend Off-Peak Hours	
7:00 PM – 11:00 PM	Saturday
7:00 PM – 9:30 PM	Sunday
Night Time Hours	
9:30 PM – 5:30 AM	(Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)
11:00 PM – 8:00 AM	(Friday PM to Saturday AM, Saturday PM to Sunday AM) (All Segments)
Full Freeway and System Ramp Closure Hours	
11:00 PM – 4:30 AM	(Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)
11:00 PM – 6:00 AM	(Friday PM to Saturday AM, Saturday PM to Sunday AM)
Service Ramp Closure Hours	
9:00 PM – 6:00 AM	(Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)
10:30 PM – 8:30 AM	(Friday PM to Saturday AM, Saturday PM to Sunday AM)

Enhanced coordination is anticipated with adjacent projects for lane closures and full freeway closures. See Article 9, Other Contracts for adjacent projects.

During Weekday Peak Hours and Weekend Peak Hours, do not close freeway lanes or shoulders (including auxiliary lanes, system ramps, service ramps, and CD roadway system), except as shown in the traffic control plans. The freeway must remain entirely clear for traffic during these periods.

During Weekday Off-Peak Hours and Weekend Off-Peak Hours, only one lane may be closed on the freeway in each direction, provided that at least two lanes remain open to traffic in the eastbound direction and at least three lanes remain open to traffic in the westbound direction, except as shown in the traffic control plans. Additional lane closures are not permitted unless approved by the engineer or as allowed during full freeway closures.

During Nighttime Hours, multiple lanes on the freeway may be closed in each direction, provided at least one lane remains open to traffic in the same direction as the closure, except as allowed during full freeway closures.

Close System Ramps only during designated System Ramp Closure Hours, unless otherwise specified in the plans or approved by the Engineer for safety or operational reasons related to adjacent closures.

Close Service Ramps only during designated Service Ramp Closure Hours, unless otherwise specified in the plans or approved by the Engineer for safety or operational reasons related to adjacent closures.

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

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

Rolling Closure

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

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

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Full Freeway Closure Restrictions

General

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

A full freeway closure is defined as one direction of the freeway. Closing both directions of the freeway constitutes using two full freeway closures. Bridge superstructure demolition activities will require a full freeway closure in both directions. Bridge substructure demolition may require full freeway closure in one or both directions, as directed by the engineer. Full Freeway and System Ramp Closures may not coincide with dates specified in the Holiday and Special Event Restrictions.

Full Freeway and System Ramp Closures must be coordinated with project 1060-27-71 and 1060-48-70 to ensure no conflicts with planned construction activities, lane reductions or freeway closures. Where feasible, Full Freeway and System Ramp Closures may align with like closures taken in the same direction by project 1060-27-71 and/or 1060-48-70. In the event of a scheduling conflict, the Contractor will work with the Project Engineer and representatives of Project 1060-27-71 and/or 1060-48-70 to resolve the conflict in a manner that minimizes impact on both projects and traveling public.

To minimize the total number of full freeway closures, the contractor is allowed extended full freeway closures for 27th Street bridge demolition, traffic control stage changes, north abutment drilled shaft foundation construction, north abutment tie-back anchor installation, girder erection, and deck pours only, or as approved by the engineer.

Extended Full Freeway and System Ramp Closure Hours (Weekday)

10:00 PM – 5:00 AM	(Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)
11:00 PM – 7:00 AM	(Friday PM to Saturday AM, Saturday PM to Sunday AM)

Extended Full Freeway and System Ramp Closure Hours (Weekend)

11:00 PM – 7:00 AM	(Friday PM to Sunday AM)

Submit requests for Full and/or Extended Full Freeway and System Ramp Closures 14 calendar days prior to the planned closure events. Submit requests for closures beyond extended hours up to 20 hours 30 calendar days prior to the closure event. For closures greater than 20 hours, submit requests 45 calendar days prior to the planned closure event. Request for Full and/or Extended Full Freeway and System Ramp Closures on more than one consecutive calendar day must be approved by the Engineer.

Obtain prior approval from the engineer and the TMP Team Lead for said closures. Notify local emergency and police agencies 7 calendar days prior to closures.

Bridge B-40-1083 steel erection operations of Span 2 is allowed a Onetime Only Continuous Closure of EB IH 94 within the weekend timeframe of 11:00 PM Friday night to 7:00 AM Sunday morning or 11:00 PM Saturday night to 5:00 AM Monday morning. This closure may be combined with the eastbound exit ramp to 26th Street onetime closure for B-40-1083 span 2 girder erection. IH 94 WB shall be open to traffic during this closure. This closure shall not be taken while WB traffic is on temporary median pavement as shown in stage 3.

Submit requests for Onetime Only Continuous Closures 45 calendar days prior to the planned closure event.

Freeway Lane Restrictions

Do not restrict lanes on IH 94 within the project limits when there is a full closure on project 1060-27-71 taken in the same direction, unless approved by the engineer.

Do not begin the demolition of existing median or existing 27th Street median pier until B-40-1083 pier 3 is complete and traffic is switched onto the temporary eastbound pavement shown in Stage 2, or as approved by the engineer.

Do not begin construction B-40-1083 north abutment until temporary median pavement is complete and traffic is switched as shown in stage 3A of the plans, or as approved by the engineer.

Long Term Closure Restrictions

The eastbound exit ramp to 26th Street may be closed for a onetime only period not to exceed 7 consecutive calendar days to construct B-40-1083 span 2 girders.

Do not close IH 94 eastbound or westbound lanes, eastbound entrance from STH 175, eastbound entrance from 35th Street, eastbound exit to 26th Street, westbound ramp from IH 43 or westbound entrance from 28th Street after the IH 94 Mainline or Ramps and Local Roads Interim Completion dates noted in article 4, unless approved by the engineer.

Submit requests for long-term lane closures on IH 94 shown in Stage 1B, Stage 2, Stage 3, and Stage 4 of the plans 30 days prior to lane closure. Obtain prior approval from the engineer and the SEF Construction WZ Engineer, (414) 750-1397, for said closures.

System Ramp Closure Restrictions

Do not close Marquette Interchange or Stadium Interchange system ramps unless shown in the traffic control or detour plans.

Do not close Stadium Interchange IH 94 EB entrance ramp from STH 175 SB until IH 94 mainline traffic is switched onto the temporary eastbound pavement shown in Stage 2, or as approved by the engineer.

Do not close Marquette Interchange IH WB entrance ramp from IH 94/43 NB until IH 94 WB mainline traffic is switched into the traffic pattern as shown in Stage 3A, or as approved by the engineer.

Service Ramp Closure Restrictions

Do not close the eastbound exit to 26th Street prior to March 1, 2026 unless otherwise approved by the engineer.

Do not close the westbound entrance from 28th Street until temporary median pavement is complete and traffic is switched as shown in stage 3 or as approved by the engineer.

Do not close westbound entrance ramp from 35th or eastbound exit ramp to 35th during overnight full freeway closures, lane closures, or extended weekend closures.

Do not close eastbound entrance ramp from 25th, or westbound exit ramp to 25th during overnight full freeway closures, lane closures, or extended weekend closures.

Local Street Closure Restrictions

The following restrictions apply to this contract for local street closures:

The following definitions apply to this contract for local street closure restrictions

Peak Hours

6:00 AM – 9:00 AM	Monday, Tuesday, Wednesday, Thursday, Friday
3:00 PM – 7:00 PM	Monday, Tuesday, Wednesday, Thursday, Friday
11:00 AM – 8:00 PM	Saturday
1:00 PM – 5:00 PM	Sunday

Off-Peak Hours

9:00 AM – 3:00 PM	Monday, Tuesday, Wednesday, Thursday, Friday
7:00 PM – 6:00 AM	Monday, Tuesday, Wednesday, Thursday
9:00 PM – 11:00 AM	Friday PM to Saturday AM
8:00 PM – 1:00 PM	Saturday PM to Sunday PM
5:00 PM – 6:00 AM	Sunday PM to Monday AM

Full Closure

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

Local Road Closure Restrictions

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

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

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

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

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

St. Paul Avenue

Do not close St. Paul Avenue prior to stage 3.

During stage 3, maintain one lane of traffic in the eastbound direction on St. Paul Avenue between 200 feet west of 27th Street to 26th Street, or as approved by the engineer.

Maintain access to properties and driveways along St. Paul Avenue.

The north half of St. Paul Avenue from 200 feet west of 27th Street to 200 feet east of 27th Street may close for a onetime only period not to exceed 30 consecutive calendar days for roadway and driveway apron paving.

Maintain access to existing 28th Street substation at all times.

Greves Street

Maintain access to properties and driveways along Greves Street south of St. Paul Avenue.

Do not restrict railroad crossing and access to properties south of railroad under 27th Street.

Maintain access to existing Greves Street Substation at all times.

All Other Local Streets

Maintain access along all local roads except as otherwise shown in the plans.

Work Zone Ingress/Egress

All locations of work zone egress or ingress for construction vehicles are subject to approval from the engineer. Submit to the engineer locations for freeway access into and out of the work zone for each stage and plans, for approval, that include signage and parallel deceleration and acceleration lanes for each freeway access into and out of the work zones. Submit the locations and plans 14 calendar days prior to each stage for approval by the engineer. This will be an official submittal as defined in standard spec 103. of the Contract Award and Execution located elsewhere in these Special Provisions.

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

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

Traffic Control Winter Maintenance

Re-install or adjust any traffic control devices that may be damaged, removed, or shifted as part of normal winter maintenance operations. Clean and maintain traffic control devices as necessary or as a result of winter maintenance operations.

Snow plowing, ice removal including any road salt which may be required, maintenance and cleaning of traffic control devices, and other winter maintenance activities are incidental to other items of work under this contract.

Traffic Meetings and Traffic Control Scheduling.

Every Wednesday by 8:00AM, submit a detailed proposed 2-week look-ahead traffic closure schedule to the engineer. Type the detailed proposed 2-week look-ahead closure schedule into an excel spreadsheet provided by the engineer. Enter information such as closure dates, duration, work causing the closure and detours to be used. Also enter information such as ongoing long-term closures, emergency contacts and general 2-month look-ahead closure information into the excel spreadsheet. Any closure schedules submitted after 8:00AM Wednesday morning is subject to being denied by the engineer.

Attend, in person, the 10:00am contractor/utility traffic coordination meeting every Wednesday at the project field office to discuss and answer questions on the proposed schedule. The prime contractor, traffic control subcontractor, and any other subcontractors that have work that requires should, lane, ramp, or full closures on the 2-week schedule is required to attend the 10:00 AM meeting. Edit, delete and add closures to the detailed proposed 2-week look-ahead schedule, as directed by the engineer, so that proposed closures meet specification. Other edits, deletions or additions unrelated to meeting specification requirements may also be agreed upon with the engineer during the 10:00 AM meeting.

Every Wednesday at 2:00 PM, there will be a stakeholder traffic meeting held at the project field office. The prime contractor is required to attend the weekly 2:00 PM traffic meeting. The meeting will bring local agencies, project stakeholders, owner managers, owner engineers, contractors, document control and construction engineering personnel together to discuss traffic staging, closures and general impacts. Upon obtaining feedback from the meeting attendees, edit, delete and add information to the detailed 2-week look-ahead closure schedule, as needed. Submit the revised 2-week look-ahead to the engineer.

For any mid-week changes, submit requests for additions or modifications in writing to the engineer for review and approval. Any cancellations also need to be communicated in writing including a reason for the cancellation. Any cancellations, additions, or modifications should be submitted by 4pm to allow for review, approval, and schedule updates. Any additions to the schedule need to adhere to the required advance notice requirements.

Smart Work Zone

An I-94 corridor Smart Work Zone is implemented for this project (by others). All portable changeable message signs, flashing beacon signs, and portable traffic control sensors required to implement the systems required for the Smart Work Zone are installed, operated and maintained under Project 1060-27-71. The prime contractor shall coordinate any adjustments to the Smart Work Zone as a result of traffic control changes.

7. Holiday and Special Event Restrictions.

The following Holiday Restrictions and Special Event Restrictions apply to the contract.

Holiday Restrictions

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

- From noon Wednesday, November 26, 2025 to 6:00 AM Monday, December 1, 2025 for Thanksgiving;
- From noon Tuesday, December 23, 2025 to 6:00 AM Friday, December 26, 2025 for Christmas;
- From noon Tuesday, December 30, 2025 to 6:00 AM Friday, January 2, 2026 for New Year's Day;
- From noon Friday, May 22, 2026 to 6:00 AM Tuesday, May 26, 2026 for Memorial Day;
- From noon Friday, July 3, 2026 to 6:00 AM Monday, July 6, 2026 for Independence Day;
- From noon Friday, September 4, 2026 to 6:00 AM Tuesday September 8, 2026 for Labor Day;
- From noon Wednesday, November 25, 2026 to 6:00 AM Monday, November 30, 2026 for Thanksgiving;
- From noon Wednesday, December 23, 2026 to 6:00 AM Monday, December 28, 2026 for Christmas;
- From noon Wednesday, December 30, 2026 to 6:00 AM Monday, January 4, 2027 for New Year's Day;

- From noon Friday, May 28, 2027 to 6:00 AM Tuesday, June 1, 2027 for Memorial Day;
- From noon Friday, July 2, 2027 to 6:00 AM Tuesday, July 6, 2027 for Independence Day;
- From noon Friday, September 3, 2027 to 6:00 AM Tuesday, September 7, 2027 for Labor Day;
- From noon Wednesday, November 24, 2027 to 6:00 AM Monday, November 29, 2027 for Thanksgiving;
- From noon Thursday, December 23, 2027 to 6:00 AM Monday, December 27, 2027 for Christmas;
- From noon Thursday, December 30, 2027 to 6:00 AM Monday, January 3, 2028 for New Years Day;
- From noon Friday, May 26, 2028 to 6:00 AM Tuesday, May 30, 2028 for Memorial Day;
- From noon Monday, July 3, 2028 to 6:00 AM Wednesday, July 5, 2028 for Independence Day;
- From noon Friday, September 1, 2028 to 6:00 AM Tuesday, September 5, 2028 for Labor Day;
- From noon Wednesday, November 22, 2028 to 6:00 AM Monday, November 27, 2028 for Thanksgiving;
- From noon Friday, December 22, 2028 to 6:00 AM Tuesday, December 26, 2028 for Christmas;
- From noon Friday, December 29, 2028 to 6:00 AM Tuesday, January 2, 2029 for New Years Day.

Freeway Special Event Restrictions

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

During Summerfest, scheduled for the years 2026, 2027, and 2028 keep open the following roadways until one hour after the event closes each night:

- Three open lanes on westbound IH 94
- Two open lanes on eastbound IH 94
- System and service interchange ramps

During Wisconsin State Fair, scheduled for August 6-16, 2026 and August 5-15, 2027, keep open the following roadways until one hour after the event closes each night:

- Two open lanes on IH 94 in both directions
- System and service interchange ramps

On days with a Milwaukee Brewer home game at American Family Field, keep open the following roadways until four hours after the event begins:

- Three open lanes on westbound IH 94
- Two open lanes on eastbound IH 94
- System ramps
- Service interchange ramps

On days during other special events at American Family Field, IH 94 restrictions will be determined by the engineer.

On days with a Milwaukee Bucks or Marquette University Men's Basketball home game at Fiserv Forum, keep open the following roadways until four hours after the event begins:

- Three open lanes on westbound IH 94
- Two open lanes on eastbound IH 94
- System ramps
- Service interchange ramps

On days during other special events at Fiserv Forum, IH 94 restrictions will be determined by the engineer.

On days during other special events at Potawatomi Casino, IH 94 restrictions will be determined by the engineer.

8. 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.

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

The following utilities will require work during construction:

AT&T Wisconsin has facilities located within the project limits. As part of this project, AT&T will relocate its existing fiber optic infrastructure using both aerial and underground methods, implemented in phases to maintain service continuity. Work will be performed in coordination with We Energies and may overlap with other utility relocation efforts.

- **TEMPORARY FACILITIES** (all work by AT&T Wisconsin will be completed prior to construction unless otherwise noted)
 - o Install new fiber optic cable from existing manhole near Evergreen Lane and S. Layton Blvd (WIS 57) to the south side of Pier 16 on existing Structure B-40-513_5 at approximately Station 20KS+00 north of Greves Street.
 - o Install lateral riser on north side of Pier 16 to a 4'x4'x6' manhole placed 10' north of existing Pier 16.
 - o Open cut and install conduit from proposed manhole to existing power pole on south side of Greves Street.
 - o Continue by placing aerial fiber optic cable along existing telecom poles on the south side of Greves Street easterly to N. 25th Street.
 - o Continue aerial fiber optic cable along existing power poles northerly on west side of N. 25th Street.
 - o Continue aerial fiber optic cable on existing power poles heading northwest from the intersection of W. St. Paul Avenue and N. 25th Street across IH 94 to N. 26th Street (approximately 175' north of W. St. Paul Avenue and N. 26th Street intersection).
 - o Continue aerial fiber optic cable on existing power poles on the east side of N. 26th Street to pole in the southwest corner of N. 26th Street and W. Clybourn Street intersection.
 - o Place a lateral on the last pole and enter manhole within the N. 26th Street and W. Clybourn Street intersection.
 - o Splice cables.
 - o Remove existing cables from conduits on the bridge prior to demolition.
 - o Construction of temporary facilities is anticipated to take approximately 60 working days. Anticipated Start Date for Temporary Relocation: August 1, 2025.
- **PERMANENT FACILITIES** (all work by AT&T Wisconsin unless otherwise noted)
 - o During construction, the contractor to install three 4-inch conduits and the necessary support system as shown on the plans for Structure B-40-1083.
 - o During construction, AT&T Wisconsin to install three 4-inch conduits as shown on the plans from Structure B-40-1083 under northbound N. 27th Street to the existing AT&T Wisconsin manhole MH 3D61 in the intersection of N. 27th Street and W. St. Paul Avenue. Conduit installation in the roadway is anticipated to take approximately 10 working days. Notify AT&T Wisconsin when the three 4-inch conduits attached to

structure B-40-1083 installation is complete and the roadway is ready for the utility to commence work.

- o During construction, open cut and install three 4" conduits from new manhole north of Pier 16 to a new manhole to be installed north of proposed Pier 1 of structure B-40-1083. Work is anticipated to take approximately 30 working days. Notify AT&T Wisconsin when proposed Pier 1 of structure B-40-1083 is complete and site is ready for them to begin this work.
- o Removal of temporary facilities and installation of cable will occur after construction is completed.
- o Prior to and during construction, AT&T Wisconsin will relocate from existing power poles in the We Energies corridor west of Greves Street into a joint trench with We Energies – Electric. Work is expected to begin in mid-October 2025 and is anticipated to take 30 working days.
- o During construction, AT&T Wisconsin will adjust manholes at approximately Station 17SP+86, 0' RT and Station 18SP+03, 12' RT, to final grades as provided by the contractor. Each adjustment is anticipated to take 1 working day.
- o After Early East Leg construction is complete, AT&T will pull permanent fiber through the new conduits and remove the temporary aerial facilities.

ATC Management, Inc. (ATC) has facilities within the project limits.

ATC will be performing work within the construction limits of this project concurrently and in coordination with this project to relocate existing electric transmission facilities from Zablocki Drive to the 28th Street Substation. A temporary transmission line structure will be installed south of IH 94 in overhead spans to the west of the crossing to the 28th Street substation as part of the relocation work. The location of this structure will be determined in the detailed design and will be coordinated with We Energies' facility relocations.

ATC will require a representative onsite during the installation of the retaining walls R-40-761 and R-40-767. Contact ATC Construction Manager Dale Hartung (262) 212-9449 to coordinate oversight. To facilitate WisDOT's construction of walls R-40-761 and R-40-767 in the Early East Leg contract, ATC's two existing 138kV lines into We Energies Greves Substation will be temporarily removed and require re-installation. ATC requires a two-month notice and uninterrupted and unimpeded access to the work area surrounding these lines, for a week to remove the lines and another week to restore these lines. This work affects We Energies facilities and will require joint ATC, WisDOT and We Energies coordination. For any additional outage requests, see the "Notice to Contractor - Coordination of Electric Outages with American Transmission Company (ATC)" section of the Special Provisions for information.

During construction, ATC will adjust manhole covers to the proposed final grade within construction limits at the following locations.

- Station 11J+04, 14' LT
- Station 11J+18, 14' LT

Contact Jeff Venderwerff at 262-206-4966 in advance of needing manhole adjustments.

ATC will install flowable thermal backfill and steel plates over their electric duct package crossing St. Paul Avenue at approximately Station 14SP+00. They will also install flowable thermal backfill at locations where the existing backfill is disturbed due to construction activities Contact Jeff Venderwerff at 262-206-4966 in advance of needing this work performed.

Coordinate with ATC for any open trenching or excavation that is planned in the vicinity of ATC facilities. ATC will support the pipe and furnish/install thermal backfill as required. Provide a vibration mitigation plan 10 working days in advance of using vibratory or impact equipment (e.g., pile hammers, drop hammers, hydraulic breakers).

City of Milwaukee - Communications has facilities within the project limits. City forces will remove existing fiber optic cabling along the 27th Street viaduct south of the project limits and east along W. St. Paul Avenue prior to the start of construction. No active City communications cables are present north and west of manhole EXMH3594. Anticipated Start Date: August 18, 2025. Estimated Duration for Removal Work: 10 working days

As part of the project, the contractor will install and restore fiber optic cable from the manhole located on the 27th Street viaduct above W. Greves Street to manhole 3594 at approximately station 25+24KS, 38.3'

LT. The contractor will also install and restore fiber from manhole 3594 to the intersection of N. 27th Street and W. Clybourn Street per the project plans and bid items. Upon completion of the project, the City will perform all required fiber splicing operations.

City of Milwaukee - Conduit has facilities within the project limits. All CUC-related work is incorporated into the construction plans and bid items.

City of Milwaukee – Sewer has facilities within the project limits. All sewer-related work, including manhole adjustments, removal of sewer infrastructure, and any modifications to existing facilities, is incorporated into the construction plans and bid items.

City of Milwaukee – Water has facilities within the project limits. All water-related work is incorporated into the construction plans and bid items.

Midwest Fiber Networks LLC (MWFN) has facilities within the project limits.

Prior to construction, MWFN will relocate one pole on the south side of W. St. Paul Avenue. The south pole at approximately STA 15SP+61, 33' RT will be relocated 2 feet north to avoid conflict with the proposed sidewalk, and the existing guy at approximately STA 15SP+61, 43' RT will be replaced with a sidewalk guy. Additionally, approximately 12 feet of conduit extending from the pole to the MWFN handhole at STA 15SP+54, 43' RT (along the fence line of the substation) will be lowered to a minimum depth of 36 inches. The handhole will be adjusted in place and downsized as needed.

Verizon Business has underground communications facilities within the project limits.

We Energies – Electricity has existing overhead and underground electric facilities within the project limits. We Energies will perform substantial underground conduit and manhole installation work, remove poles, and adjust manholes during construction. We Energies will also discontinue conduits and manholes during construction.

During construction, there will be relocation work which involves converting overhead feeders (3 circuits) from the 28th Street Substation to underground facilities extending from 28th Street to the Greves Substation. The route generally follows N. 29th Street, W. Mount Vernon Avenue, N. 32nd Street, W. Park Hill Avenue, and W. Canal Street. Three VFI (Vacuum Fault Interrupter) units and riser poles will be installed at the northwest corner of N. 32nd Street and W. Canal Street. The construction schedule includes:

- Conduit and Manhole Work: 140 working days, starting no later than 10/31/2025.
- Cable Construction: 60 working days, starting no later than 3/1/2026.
- Overhead/Direct Bury Work: 100 working days, starting no later than 4/1/2026.

Work will overlap among the above three types, and this work is scheduled to be completed by 9/1/2026.

During construction, We Energies will adjust approximately 17 existing manholes between STA 10SP+77 and STA 219SP+49. We Energies requires a minimum of 1 business day per adjustment. Contact Phil McDonnell (414-944-5620/ 414-550-3279) to coordinate adjustments.

During construction, steel plating (10ga, 18"–24" wide) will be installed in two locations (conduits running south from both MH 88-8011 and MH 88-8021) to protect the existing conduit found within the proposed subgrade prior to road construction.

Below is a summary of the locations with proposed work for We Energies' facilities.

Station No.	Pole No.	Work Proposed
409EW+24 129'RT	04-13288	Remove Pole
411EW+4 147'RT	66-1029	Remove Pole
412EW +11 153'RT	17-03077	Remove Pole
413EW+30 143'RT	15-03105	Remove Pole
413EW+26 127'RT	15-14054	Remove Pole
413EW+65 119'RT	15-14055	Remove Pole

Station No.	Pole No.	Work Proposed
414EW+12 112'RT	15-14056	Remove Pole
414EW+13 142'RT	78-6601	Remove Pole
414EW+25 235'RT	78-6602	Remove Pole
414EW+54 107'RT	15-14057	Remove Pole
414EW+96 104'RT	15-14058	Remove Pole
415EW+00 131'RT	15-03104	Remove Pole
415EW+54 127'RT	79-08139	Remove Pole
417EW+33 96'RT	99-05639	Remove Pole
418EW+70 61'RT	57-2904	Remove Pole
418EW+93 73'RT	57-2949	Remove Pole
419EW+52 49'RT	57-2892	Remove Pole
419EW+55 66'RT	57-2891	Remove Pole
420EW+7 44'RT	69-2612	Remove Guy Stub Pole
10SP+56 36'RT		MH88-8002, Cover adjustment
10SP+68 23'LT		MH88-8003, Cover adjustment
10SP+88 14'RT		MH88-8004, Cover adjustment
11SP+84 13'RT		MH88-8006, Roof will be 4" into base aggregate, cover adjustment
12SP+28 15'RT		MH88-8007, Roof will be 4" into base aggregate, cover adjustment
12SP+28 15'RT To 102TJD+80 38'RT		New Conduit from MH88-8007 to MH88-8009
102TJD+78 24'RT		MH88-8008 to be Discontinued (roof removed, top of wall removed, floor broken up, backfill slurry)
12SP+28 15'RT To 102TJD+78 24'RT		Conduit from MH88-8007 to MH88-8008 to be discontinued in place
102TJD+78 24'RT To 102TJD+10 40'RT		Conduit from MH88-8008 into the Substation to be discontinued in place
102TJD+80 38'RT To 102TJD+10 40'RT		New Conduit from new MH88-8009 into Substation
12SP+53 21'LT		MH88-8011, Cover adjustment
12SP+53 21'LT To 102TJD+80 38'RT		Steel plate over existing conduit from MH88-8011 to MH88-8009
102TJD+80 38'RT		MH88-8009 to remain
102TJD+73 112'LT to 102TJD+73 50'RT		New Conduit crossing ramp between MH88-8005 and MH88- 8022 (into SS)

Station No.	Pole No.	Work Proposed
102TJD+70 112'LT to 102TJD+70 50'RT		Existing conduit to be discontinued in place
13SP+18 19'LT		MH88-8019, Roof to be lowered. Cover to move 2'N to avoid the proposed curb
13SP+31 20'RT		MH88-8020, Cover adjustment
12SP+66 51'RT		MH88-8012, Cover adjustment
12SP+66 51'RT To 15SP+65 42'RT		Conduit replaced from MH88-8012 to MH88-8026, in the same location.
13SP+88 23'LT		MH88-8021, Cover adjustment
13SP+88 23'LT To 13SP+81 36'RT		Steel Plate over existing conduit from MH88-8021 to SS entrance
13SP+90 44'LT		MH88-8023, Cover adjustment
15SP+65 42'RT		MH88-8026, Possible Relocation, further investigation needed
16SP+92 7'RT		MH8322, Roof needs to be replaced, Cover adjustment
17SP+57 22'LT		MH88-8030, Cover adjustment
17SP+50 22'RT		MH88-8028, Cover adjustment
25KS+78 22'LT		MH88-8029, Cover adjustment
16SP+92 7'RT To 219TSP+03 11'RT		New Conduit from MH8322 to MH6384 in place of the existing conduit to be discontinued
219TSP+03 11'RT		MH6384, Cover adjustment
11J+29 44'LT		MH94-8006, Cover adjustment
11+14SP 59'RT to 12+61SP 54'RT		New Conduit Span from MH88-8012 to N 29th ST
N 29th ST From W ST Paul to W MT Vernon Ave 2' to 5' E of ELL		New Conduit Span on N 29th ST
New MH in N 29th ST		5' E OF ELL N 29TH ST, 5' S OF SLL W MT VERNON
W MT Vernon Ave from N 29th ST to N 32nd ST 30' N of SLL		New Conduit Span on W MT Vernon Ave
New MH in MT Vernon Ave		86' W OF WLL N 30TH ST, 30' N OF SLL W MT VERNON
New MH in MT Vernon Ave		78' E OF ELL N 32ND ST, 30' N OF SLL W MT VERNON
N 32nd ST From W MT Vernon to W Park Hill Ave 23' W of ELL To W Canal ST Varies East Side		New Conduit Span on N 32nd ST
New MH in N 32nd ST		New MH in Intersection of N 32nd ST and W Park Hill Ave

Station No.	Pole No.	Work Proposed
W Park Hill Ave from N 32nd ST To Alley N 31st St 25' S of NLL		New Conduit Span on W Park Hill ave for New Riser
New MH in N 32nd ST		New MH in Intersection of N 32nd ST and W Canal ST, North Side
W Canal ST from N 32nd ST To Greves SS Varies North Side		New Conduit Span North of W Canal St to Greves SS
NW Corner of W Canal ST and N 32nd ST		3 VFI Units and 3 Riser Poles (Gazebo Needs to be relocated)

It should be noted all the poles and guy wires/anchors not listed above will remain in the project area during contractor's work. These remaining poles and their associated circuits, which will not be relocated until after this contract work is complete, will be energized during contractor's work.

We Energies requires that grading north and east of existing Greves Substation, including the entire area between Greves Substation and the new ATC Ballpark Substation, be near final grade and ready for substation construction. We Energies will complete substation modifications from approximately May 2027 through March 2028, concurrent with extensive other relocation efforts in this area.

Coordinate with We Energies and ATC on outages required to perform as noted in the "Prosecution and Progress" and "Notice to Contractor - Coordination of Electric Outages with American Transmission Company (ATC)" articles. Notify We Energies a minimum of 60 calendar days in advance of any operations that require an outage of We Energies facilities.

We Energies – Gas has facilities within the project limits.

Prior to construction, gas services at the following addresses will be replaced from the existing main:

- 2734 W. St. Paul Avenue
- 2818 W. St. Paul Avenue
- 402 N. 28th Street
- 412 N. 28th Street

Additionally, the gas service stub at 2724 W. St. Paul Avenue will be discontinued.

Anticipated Start Date: July 15, 2025. Anticipated duration of work: 25 working days.

Valve box adjustments may be required, including but not limited to:

- Station 10+36, 15' RT
- Station 16+82, 33' LT

Contractor to notify We Energies to coordinate gas valve box adjustments. We Energies requires a minimum of 1 business day per valve box adjustment.

The following utilities have facilities within the construction limits; however, no adjustments are anticipated:

AT&T Legacy

Level 3 Communications LLC

Milwaukee Metropolitan Sewerage District

Spectrum

Windstream KDL, LLC

9. Other Contracts.

Coordinate work according to standard spec 105.5.

Modifications to the traffic control plan may be required by the engineer to be safe and consistent with the adjacent work by others.

The following projects may be under construction concurrently with the work under this contract. Coordinate activities, detours, work zone traffic control, roadway and lane closures, and other work items as required with other contracts.

Modifications to the traffic control plan may be required by the engineer to be safe and consistent with the adjacent work by others.

Project 1060-27-71

I-94 East West, West Leg

70th Street to Zablocki Drive

WisDOT contact: Evan Limberatos; (262) 548-8797

Project 1060-48-70

IH 794 East West Freeway

Marquette I/C to Lake I/C

WisDOT contact: James Schumacher, (262) 521-4428

Project 1090-32-70

IH-43 Airport Freeway

92nd Street Bridge B-40-1110

WisDOT contact: Christine Hanna (414) 750-1555

Project 1100-35-71

IH-41 Zoo Freeway

Howard Ave to UPRR

WisDOT contact: Christine Hanna (414) 750-1555

Project 2410-10-70

C Milwaukee, W National Ave

39th St to 1st St

WisDOT contact: Deb Tarnow; (262) 548-6768

Project 1100-16-71

C Milwaukee, Kearney Street

76th St to 72nd St

WisDOT contact: James Schumacher; (262) 521-4428

Project 1100-16-72

C Milwaukee, O'Connor Street

Honey Creek Dr to 72nd St

WisDOT contact: James Schumacher; (262) 521-4428

Project 2100-05-71 (City of Milwaukee)

C Milwaukee, 35th Street Viaduct

Over Menomonee River, P-40-847

WisDot Contact: Gregory Hafeman, (262) 548-8677

Project 2615-15-73 (City of Milwaukee)

C Milwaukee, 16th Street Bridge

Over Menomonee River, B40-0550-14

City of Milwaukee contact (Consultant): Darrell Berry, (414) 935-4254

Project 2984-25-76 (City of Milwaukee)

C Milwaukee, 25th Street Bridge

Over Menomonee River, P-40-0654

WisDot Contact: Gregory Hafeman, (262) 548-8677

ATC Substation Construction

ATC Contact: Christine Rawson, (262) 832-8732

We Energies Substation Expansion

We Energies Contact: Nicholas Welch (262) 502-6882

Demolition Contract – 2640 W. Greves Street

WisDOT Contact: Scott Dellenbach (414) 327-2607

Demolition Contract – 2401 W. St. Paul Avenue

WisDOT Contact: Scott Dellenbach (414) 327-2607

Demolition Contract – 2620 W. St. Paul Avenue

WisDOT Contact: Scott Dellenbach (414) 327-2607

10. Work By Others.

Prior to construction, contact the WisDOT Southeast Region Electrical Field Unit (EFU) at (414) 266-1170 to schedule removal of the ramp gate solar power supply, including electrical components and power supply pole. Concrete bases and ramp gates will be removed under this contract.

City of Milwaukee – Street Lighting has facilities within the project limits. During construction and in conjunction with grading, paving, and structures operations, install, remove, discontinue, adjust, and reconstruct street lighting facilities as shown in the plans and bid items.

Prior to construction, City of Milwaukee personnel will install and energize lighting spans inside and just outside the project limits to keep area lighting in proper working conditions. Contact field operation manager Neal Karweik at 414-286-5943 (office) or 414-708-4245 (cell) to coordinate street lighting work.

City of Milwaukee – Signals has facilities within the project limits at the intersection of S. 27th Street and W. St. Paul Avenue. During construction and in conjunction with grading, paving, and structures operations, install, remove, discontinue, adjust, and reconstruct traffic signal facilities as shown in the plans and bid items.

City of Milwaukee will provide electrical service for the traffic signals. Contact signals field contact Rudy Gutierrez at (414) 286-5941 at least 10 working days prior to start for temporary electric service. Work is anticipated to take approximately 10 working days. The City of Milwaukee will salvage the existing signal cabinet and controller after temporary traffic signals are installed and active. City of Milwaukee will remove signal cables from City Underground Conduit (CUC) ducts.

11. Railroad Insurance and Coordination - Soo Line Railroad Company (CP)

A. Description

Comply with standard spec 107.17 for all work affecting Soo Line Railroad Company (CP) property and any existing tracks.

A.1 Railroad Insurance Requirements

In addition to standard spec 107.26, provide railroad protective liability insurance coverage as specified in standard spec 107.17.3. Insurance is filed in the name of Soo Line Railroad Company d/b/a Canadian Pacific.

Notify evidence of the required coverage, and duration to Brian Osborne, Manager Public Works; Canadian Pacific Plaza, 120 South 6th Street, Suite 700, Minneapolis, MN 55402; Telephone (612) 760-2945; E-mail: Brian.Osborne@cpkcr.com

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

Include the following information on the insurance document:

- Project ID: 1060-27-74
- Work Performed on or within 50' of RR ROW:
 - 1 & 2)** The 27th Street bridge will be reconstructed (limits of reconstruction do not fall within 50' offset from railroad R/W). 27th Street will be closed to public traffic during construction (closed at St Paul Avenue to the north and Evergreen Lane to the south). Grading operations north of Greves Street will extend from the interstate's retaining walls to the back of the sidewalk on the north side of Greves Street. Traffic control.
 - 3 & 4)** Traffic control.

#	Route Name	City/County	Crossing ID	RR Subdivision	RR Milepost
1	Greves Street	Milwaukee/Milwaukee	386506F	C&M Sub	86.84
2	27th Street	Milwaukee/Milwaukee	386505Y	C&M Sub	86.84
3	35th Street	Milwaukee/Milwaukee	386510V	Watertown Sub	87.31
4	I-94	Milwaukee/Milwaukee	386511C	Watertown Sub	87.83

A.1 Railroad Insurance Requirements

In addition to 107.26 of the standard specifications, provide railroad protective liability insurance coverage as specified in subsection 107.17.3 of the standard specifications. Requirements of the standard specifications are changed as follows:¹

Before the state issues its notice to proceed to the contractor or contractors (collectively, the contractor) awarded the contract for construction involving the project described in this stipulation (the project), the state shall require the contractor to provide certain insurance coverage to protect the railroad (as defined in this section) from loss for property and liability exposures relating to the construction activities on the project. The manner and process in which this will be accomplished is as detailed below.

TYPE OF INSURANCE	MINIMUM LIMITS REQUIRED
1. Commercial general liability insurance; shall be endorsed to include blanket contractual liability coverage; shall cover bodily injury and property damage, personal and advertising injury, and fire legal liability. There shall be no endorsements limiting coverage for the work to be performed pursuant to this Stipulation.	\$5,000,000 combined single limits per occurrence with an annual aggregate limit of not less than \$10,000,000.
2. Workers' compensation and employer's liability coverage.	Workers' compensation limits: statutory limits. Employers' liability limits: Bodily injury by accident \$100,000 each accident Bodily injury by disease \$500,000 each accident \$100,000 each employee

3. Commercial automobile liability insurance; shall cover all owned, non-owned, and hired vehicles used by the CONTRACTOR in carrying out the contract, and shall include coverage for bodily	\$1,000,000 combined single limit per occurrence.
4. Railroad Protective Liability Insurance, issued on a standard ISO form 00 35 10 93 or its equivalent and endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93) and the Limited Seepage and Pollution Endorsement. No endorsements restricting FELA coverage may be added.	\$5,000,000 per occurrence \$10,000,000 in the aggregate

¹ As used in this section, "state" and "company" have the meanings assigned to them in the stipulation to which this exhibit is attached, "FELA" means the Federal Employment Liability Act, and "this stipulation" means the stipulation to which this exhibit is attached.

² The contractor may satisfy the requirements for insurance types 1, 2 and 3 through primary insurance coverage or through excess/umbrella policies.

A.2 Train Operation

#	Passenger Train Volume	Passenger Train Speed	Freight Train Volume	Freight Train Speed	Frequency	Switch Train Comment*
1	2	40	21	40	Daily	There are switch trains in addition to through trains
2	2	40	21	40	Daily	There are switch trains in addition to through trains
3	2	40	21	40	Daily	There are switch trains in addition to through trains
4	2	40	21	40	Daily	There are switch trains in addition to through trains

* Switch trains are in addition to freight and passenger trains.

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

Construction Contact

Brian Osborne, Manager Public Works; Canadian Pacific Plaza, 120 South 6th Street, Suite 700, Minneapolis, MN 55402; Telephone (612) 760-2945; E-mail brian_osborne@cpkcr.com for consultation on railroad requirements during construction.

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

Flagging Contact

Greda Lynn, Grade Crossing Coordinator; Canadian Pacific Plaza, 120 South 6th Street, Suite 700, Minneapolis, MN 55402; Telephone (612) 258-6619; E-mail greda_lynn@cpkcr.com a minimum of 40 working days in advance to arrange for a railroad flagger. Reference the Crossing ID, Wisconsin Milepost and Subdivision found in A.1.

* Contact SOO Line (CPKC) prior to letting for flagman work hour availability.

Cable Locate Contact

In addition to contacting Diggers Hotline, contact CPKC Call Before You Dig line at (866) 291-0741, five working days before the locate is needed. Reference the Crossing ID, Wisconsin Milepost and Subdivision found in A.1.

SOO Line (CPKC) will only locate railroad owned facilities located in the railroad right-of-way. The railroad does not locate any other utilities.

A.4 Work by Railroad

The railroad will perform the work described in this section, except for work described in other special provisions and will be accomplished without cost to the contractor. None.

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

A.5 Temporary Grade Crossing

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

B Railroad Flagging

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

Projects with concurrent activity may require more than one flagger.

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

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

C Flagging by Railroad– Railroad Does Not Pay Flagging Costs

C.1 General

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

- (1) Coordinate with the railroad for all work performed within 25 feet of the track centerline including equipment or extensions of equipment that can fall within 25 feet of the track centerline or adjacent facilities or when working on railroad right-of-way. Include the following on all submittals and other written communications with the railroad:
 - WisDOT crossing number.
 - Railroad milepost.
 - Railroad subdivision.
- (3) Perform all work within 25 feet of the track centerline including equipment or extensions of equipment that can fall within 25 feet of the track centerline or adjacent facilities or when working on railroad right-of-way in a way that does not interfere with the safe and uninterrupted operation of railroad traffic. Maintain clearances during construction as follows:
 1. Do not operate equipment closer than 25 feet horizontally from a track centerline or 22 feet vertically above the top of a rail, except under the protection of railroad flaggers.
 2. Do not store materials or equipment closer than 25 feet horizontally from a track centerline.
 3. Provide an obstruction-free work zone adjacent to a track extending 12 feet or more horizontally on both sides of the track centerline. Keep this work zone free of construction debris.
 4. Unless the railroad's chief engineering officer approves otherwise in writing, maintain minimum clearances from falsework, forms, shoring, and other temporary fixed objects as follows:
 - 4.1 Provide 12 feet, plus 1.5 inches per degree of track curvature, measured horizontally from the track centerline.
 - 4.2 Provide 21 feet, plus compensation for super-elevated track, measured vertically above the top of the highest rail.
- (4) Comply with the railroad's rules and regulations when work is within 25 feet of the track centerline including equipment or extensions of equipment that can fall within 25 feet of the track centerline or

adjacent facilities or when working on railroad right-of-way. If the railroad's chief engineering officer requires, arrange with the railroad to obtain the services of qualified railroad employees to protect railroad traffic through the work area. Bear the cost of these services and make payment directly to the railroad. Notify the appropriate railroad representative as listed in section A.3 above, in writing, at least 40 business days before starting work near a track. Provide the specific time planned to start the operations.

C.2 Rates - Soo Line Railroad Company (CP)

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

- \$1,250 daily rate for an eight-hour day (including wages, labor surcharges, meals, lodging, vehicle and mileage expenses),
- \$1,550 daily rate for an eight-hour day on Saturdays, Sundays or holidays (including wages, labor surcharges, meals, lodging, vehicle and mileage expenses),
- \$175 per hour overtime rate for all time worked before or after the regular assigned eight hours on any day, or for a minimum three hour call on Saturdays, Sundays, or Holidays.

If a flagger must be relieved due to hours-of-service requirements, arrangements will be made for a relief flagger.

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

C.3 Reimbursement Provisions

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

C.4 Excluded Conditions

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

1. Additional flagging requirements imposed by the railroad beyond the flagging requirements provided in subsection B above due to violations by the contractor.
2. Temporary construction crossings arranged for by the contractor.

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

C.5 Payment for Flagging

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

ITEM NUMBER	DESCRIPTION	UNIT
801.0117	Railroad Flagging Reimbursement	DOL

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

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

12. Hauling Restrictions.

Replace standard spec 107.2 with the following:

- (1) Approved local street haul routes are shown on the Local Road Haul Routes Overview Plan.

- (2) Present to the department, five business days before proposed hauling, a proposed haul route plan detailing additional haul routes if additional haul routes are needed that are not shown on the Local Road Haul Routes Overview Plan or part of the state trunk highway system. Include the months, days of the week, time of day, number of trucks, types of trucks and maximum loads of trucks anticipated to accomplish the project work in the additional haul route submittal.
- (3) The department will review the submittal and either approve or provide a letter with comments and proposed revisions to the contractor within five business days of its receipt. If approved, 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.
- (4) At all times, conduct operations in a manner that will cause a minimum of disruption to traffic on existing roadways.

sef-107-015 (20170310)

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

The calculated land disturbance for the project site is 14.7 acres.

The department has obtained permit coverage through the Wisconsin Department of Natural Resources to discharge storm water associated with land disturbing construction activities under this contract. Conform to all permit requirements for the project.

This permit is 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>

A "Certificate of Permit Coverage" is available from the regional office by contacting Eric Hanson, (414) 840-9341. Post the "Certificate of Permit Coverage" in a conspicuous place at the construction site.

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 of the following:

- Must meet the permit's applicability criteria.
- Must be for the exclusive use of a WisDOT project.
- Land 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.

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)

14. Erosion Control.

Add the following to standard spec 107.20 as paragraphs nine through fifteen:

- (9) Erosion control best management practices (BMP's) the plans show are at suggested locations. The actual locations shall be determined by the contractor's ECIP and by the engineer. Include each dewatering (mechanical pumping) operation in the ECIP submittal. The ECIP shall supplement information the plans show and not reproduce it. The ECIP shall identify how to implement the project's erosion control plan. ECIP shall demonstrate timely and diligently staged operations, continuing all construction operations methodically from the initial removals and topsoil stripping operations through the subsequent grading, paving, and re-application of topsoil to minimize the exposure to possible erosion.
- (10) Provide the ECIP 14 days before the pre-construction conference. A 'staged' ECIP may be required for this project, as new areas are disturbed. Each new 'stage' of the ECIP needs to be submitted to the project staff and WDNR liaison for review as an amendment to the ECIP with a standard 14-day review period. Provide 1 copy of the ECIP to the department and 1 copy of the ECIP to the WDNR Liaison Ryan Pappas Ryan.pappas@wisconsin.gov. Do not implement the ECIP until department approval and perform all work conforming to the approved ECIP.

- (11) Maintain Erosion Control BMPs until permanent vegetation is established or until the engineer determines that the BMP is no longer required.
- (12) Stockpile excess materials or spoils on upland areas away from wetlands, floodplains, and waterways. Install perimeter silt fence protection around stockpiles within a timeframe acceptable to the engineer. If stockpiled materials will be left for more than 14 days, install temporary seed and mulch or other temporary erosion control measures the engineer orders.
- (13) Re-apply topsoil on graded areas, as designated by the engineer, within a timeframe acceptable to the engineer after grading is completed within those areas. Seed, fertilize, and mulch/erosion mat top-soiled areas, as designated by the engineer, within 5 days after placement of topsoil. If graded areas are left not completed and exposed for more than 14 days, seed those areas with temporary seed and mulch.
- (14) Do not allow excavation for; structures, utilities, grading, maintaining drainage that requires dewatering (mechanical pumping) of water containing sediments (sand, silt, and clay particles) to leave the work site or discharge to a storm water conveyance system without sediment removal treatment. The water must be pumped into a properly selected and sized dewatering basin before the clean/filtered water is allowed to enter any waterway or wetland. The basin must remove suspended solids and contaminants to the maximum extent practicable. A properly designed and constructed dewatering basin must take into consideration maximum pumping volume (gpm or cfs) and the sedimentation rate for soils to be encountered. The project team identify 'sensitive' areas in the field that require additional temporary stabilization to protect resources from being contaminated by sediment laden water discharging from the work site. Any 'release' of sediment-laden water from the work site that enters a wetland or waterway should be reported to the WDNR liaison within 24 hours. Before each dewatering operation, submit to the department a separate ECIP amendment describing in words and pictorial format an appropriate BMP for sediment removal, conforming to WisDNR Storm Water Construction Technical Standard, Code 1061, Dewatering. Include reasoning, location, and schedule duration proposed for each operation. Per Code 1061, include all selection criteria: site assessment, dewatering practice selection, calculations, plans, specifications, operations, maintenance, and location of proposed treated water discharge. Provide a stabilized discharge area. If directing discharge towards or into an inlet structure, provide additional inlet protection for back-up protection.
- (15) Dewatering is incidental.

~~sef 107-010 (20180104)~~

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

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

Contaminated materials leaving the site need to adhere to the Hazardous Material Management Plan.

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

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

15. Environmental Protection – Waste.

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

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

Management of Material Excavated During Highway Construction		
Classification	Characterization of Material	Material Management
1. Common Excavation (NR 500.08(2) Unregulated or Exempt Material)	- Native soil - Fill soils that have no obvious visual or olfactory contamination and may not have been analyzed for contaminants. - Clean unpainted or untreated wood, brick, concrete, cured asphalt, and trace amounts of glass.	Contractor-selected sites approved through Erosion Control Implementation Plan (ECIP) review process, or on-site reuse
2. Special Excavation (NR 500.08(4) Solid Waste Low Hazard Exemption)	- Soil with low levels of petroleum contamination or contaminant metals within the site fill plan criteria. - Trace amounts (<25% volume of the excavation equipment's bucket load) of foundry sand, cinders, and fly ash.	WisDOT selected site or on-site reuse with WDNR concurrence. Sites must meet the location criteria of 504.04 (3) (c) and http://folio.legis.state.wi.us/cgi-bin/om_isapi.dll?clientID=48040580&nfobase=code.nfo&jump=NR%20504.04%284%29%28a%29&softpage=Document - JUMPDEST_NR 504.04(4)(a)(4) (a) to http://folio.legis.state.wi.us/cgi-bin/om_isapi.dll?clientID=48040580&nfobase=code.nfo&jump=NR%20504.04%284%29%28f%29&softpage=Document - JUMPDEST_NR 504.04(4)(f)(f). Fill plans are also approved through ECIP review process.
3. Contaminated Soil and Fill Material	- Lead painted or treated wood - Petroleum contaminated soil - Significant amounts (>25% volume of the excavation equipment's bucket load) of foundry sand, cinders, or fly ash.	Contaminated material disposed at a WDNR-licensed solid waste disposal facility. Petroleum contaminated material shall be treated at a bioremediation facility (biopile) prior to disposal at the landfill. Direct disposal of contaminated material at landfills without such pre-treatment must be pre-authorized by the WisDOT.
4. Asbestos-containing Waste	Asbestos-containing material	Landfill at a WDNR-licensed solid waste landfill with approval to accept asbestos-containing material.
5. Hazardous Waste	RCRA Subtitle C (NR 600) contaminated media (hazardous waste)	Disposed or treatment under State's hazardous waste disposal contract with Veolia. Significant quantities should be evaluated for potential treatment to render non-hazardous to reduce disposal costs.

Management of Material Excavated During Highway Construction		
Classification	Characterization of Material	Material Management
6. Potentially contaminated material	Potentially contaminated material with unusual visual, olfactory, or other characteristics	Temporary stockpile with appropriate environmental controls constructed per NR 718.05. Temporary stockpiling at solid waste landfill may be alternative with WDNR & Landfill's approvals.

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

Add the following to standard spec 107.1(2):

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

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

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

stp-107-115 (20150630)

17. Notice to Contractor – Segment of R-40-761 Under Existing Greves Street Substation Feeder Lines

Existing overhead utility lines spanning between the We Energies Greves Street substation and the adjacent ATC transmission tower cross proposed retaining wall R-40-761. Construction of the wall segment at the crossing location will require the utilities to temporarily remove the overhead utility lines. Both We Energies and ATC will require outages to their facilities to execute the temporary removal of the overhead utility lines.

Following completion of wall construction at the crossing location, We Energies and ATC will require additional outages to their facilities to restore the overhead utility lines to their original state.

The contractor is responsible for planning their work such that the time necessary for the utilities to remove the overhead utility lines, to construct the wall segment at the crossing location, and for the utilities to restore the overhead utility lines is completed wholly within the We Energies/ATC outage restrictions as documented in the Prosecution and Progress. This work is anticipated to be completed during the Fall of 2027.

18. Notice to Contractor - Coordination of Electric Outages with American Transmission Company (ATC).

American Transmission Company (ATC) has 138 kV overhead transmission lines located along the south side of IH 94 within the project limits, which will remain energized throughout the duration of construction. The contractor is required to maintain OSHA-specified Minimum Approach Distances (MADs) from these energized lines at all times. It is the contractor's responsibility to determine the appropriate clearance for the equipment being used and to ensure that these minimum distances are strictly adhered to during all operations near ATC facilities.

Contractors are not permitted to enter any ATC switchyard without prior coordination and approval. Any work planned inside an ATC switchyard must first be coordinated with and approved by ATC. All work in the vicinity of ATC transmission facilities must be conducted with extreme caution. Transmission structures may include multiple ground rods that could extend significant distances from the base of the structure. These rods are connected via ground wires and may be buried up to 18 inches or deeper. If ground rods or any other ATC facilities are disturbed during construction, their locations must be documented and promptly reported to ATC.

No temporary or permanent stockpiling or staging of equipment, materials, or earthwork is allowed within the ATC wire zone or easements at any time. Unobstructed access to ATC facilities must be maintained throughout the project, including access points such as the ATC driveway at Hawley Road. Blocking or restricting access is not permitted unless coordinated and approved by ATC in advance. If thermal sand around an ATC underground cable is disturbed during construction, it must be replaced in accordance with ATC's specifications.

For construction activities expected to cause excessive vibration—such as blasting, pile driving, vibratory hammers, hydraulic breakers, or drop hammers—the contractor must notify ATC at least ten (10) working days in advance. A vibration mitigation plan must be provided for ATC's review, including the anticipated peak particle velocity (PPV) and frequencies at ATC structures, substations, and underground facilities.

Outage requests must be submitted to ATC with at least 150 calendar days' notice and must include sufficient justification. ATC retains the right to deny any outage request based on real-time system conditions, operational constraints, or load demands. The availability of any outage is not guaranteed. Single- or double-circuit outages may be requested year-round, but full triple-circuit outages are only permitted from October 1 through December 31 unless specifically approved in writing by ATC. No full circuit outages are allowed between January 1 and September 30 unless prior written approval is granted by ATC.

All outages and coordination for the temporary removal and reinstallation of overhead lines into the Greves Substation must be coordinated jointly with WisDOT, We Energies, and ATC. The contractor must contact ATC Construction Manager Dale Hartung at (262) 212-9449 to initiate the outage agreement process. An executed outage agreement is required for any planned outages. All costs associated with ATC outages requested for WisDOT project work will be the responsibility of WisDOT.

Electric fields under transmission lines can cause induced voltages on ungrounded equipment and vehicles working near transmission lines. It is the contractor's responsibility to ensure that all equipment used in proximity to ATC lines is properly grounded to mitigate the risks associated with induced voltages.

19. Notice to Contractor – Notification of Demolition and/or Renovation No Asbestos Found.

B-40-43

John Roelke, License Number All-119523, inspected Structure B-40-43 for asbestos on March 28, 2024. No Regulated Asbestos Containing Material (RACM) was found on this structure.

B-40-57

John Roelke, License Number All-119523, inspected Structure B-40-57 for asbestos on April 24, 2024. No Regulated Asbestos Containing Material (RACM) was found on this structure.

B-40-513-5

John Roelke, License Number All-119523, inspected Structure B-40-513-5 for asbestos on March 28, 2024. No Regulated Asbestos Containing Material (RACM) was found on this structure.

R-40-10

Tom Perkins, License Number All-252595, inspected Structure R-40-10 for asbestos on April 10 2024. No Regulated Asbestos Containing Material (RACM) was found on this structure.

R-40-33

Tom Perkins, License Number All-252595, inspected Structure R-40-33 for asbestos on April 10 2024. No Regulated Asbestos Containing Material (RACM) was found on this structure.

Unknown 4

John Roelke, License Number All-119523, inspected Structure Unknown 4 for asbestos on April 10, 2024. No Regulated Asbestos Containing Material (RACM) was found on this structure.

Copies of the inspection reports are available from Chris Zacharias, WisDOT SE Region Project Manager, Christopher.zacharias@dot.wi.gov, (262) 548-6716.

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 Andrew Malsom, WisDOT SE Region Hazmat Program Environmental Engineer, andrew.malsom@dot.wi.gov, (262) 548-6705 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:

B-40-43

- Site Name: Structure B-40-43, STH 57-27th Street over IH 94 E-W Freeway
- Site Address: 0.8 miles north junction USH 41
- Ownership Information: WisDOT Transportation SE Region, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Eric Hanson
- Phone: (414) 840-9341
- Age: 64 years old. This structure was constructed in 1960
- Area: 12,693 SF of deck

B-40-57

- Site Name: Structure B-40-57, W St Paul Avenue-N 26th Street over IH 94 E-W Freeway
- Site Address: 0.5 miles east of IH94/35th Street
- Ownership Information: WisDOT Transportation SE Region, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Eric Hanson
- Phone: (414) 840-9341
- Age: 64 years old. This structure was constructed in 1960
- Area: 11,520 SF of deck

B-40-513-5

- Site Name: Structure R-40-10, STH 57-27th Street over CMSTPP RR
- Site Address: 0.7 miles north junction STH 59
- Ownership Information: WisDOT Transportation SE Region, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Eric Hanson
- Phone: (414) 840-9341
- Age: 43 years old. This structure was constructed in 1981
- Area: 44,344 SF of deck

R-40-10

- Site Name: Structure R-40-10
- Site Address: 0.07 miles northwest junction 27th Street
- Ownership Information: WisDOT Transportation SE Region, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Eric Hanson
- Phone: (414) 840-9341
- Age: 58 years old. This structure was constructed in 1967
- Area: N/A SF of deck

R-40-33

- Site Name: Structure R-40-33
- Site Address: Off ramp to W. St. Paul Avenue, 150' south junction W. St. Paul Avenue
- Ownership Information: WisDOT Transportation SE Region, 141 NW Barstow St., PO Box 798, Waukesha, WI 53187-0798
- Contact: Eric Hanson

- Phone: (414) 840-9341
- Age: 63 years old. This structure was constructed in 1962
- Area: N/A SF of deck

Unknown 4

- Site Name: IH 94 EB EW Freeway/27th St
- Site Address: City of Milwaukee, Milwaukee County, Lat/Long Coordinates: 430159.70 / 875658.30
- Ownership Information: Unknown
- Contact: Eric Hanson
- Phone: (414) 840-9341
- Age: Unknown years old. This structure was constructed in Unknown
- Area: N/A SF of deck

Insert the following paragraph in Section 6.g.:

If asbestos not previously identified is found or previously non-friable asbestos becomes crumbled, pulverized, or reduced to a powder, stop work immediately, notify the engineer, and the engineer will notify the department's Bureau of Technical Services at (608) 266-1476 for an emergency response as specified in standard spec 107.24. Keep material wet until it is abated or until it is determined to be non-asbestos containing material.

stp-107-125 (20220628)

20. Notice to Contractor – Personnel Identification Program.

All contractor personnel will be required to register in the program prior to performing work. To register, contractor personnel must present a valid photo ID and signature at the time of registration confirming adherence to the safety requirements of the contract and their Company Safety Plan. Valid photo identification includes unexpired driver's license, government issued identification cards, military identification, passport, or other identification approved by the department. All personnel registered will be issued a hard hat sticker with an identification number by the department. Stickers shall be placed in a visible location on the hard hat.

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

21. Notice to Contractor – Safety.

All workers shall wear OSHA and ANSI compliant safety head protection, safety glasses, safety-toe protective footwear, and an ANSI 107-2015 Type R, Class 2 safety vest and at all times while within the project footprint. Ensure workers wear a high visibility Class 3 top and pants ensemble that meets or exceeds ANSI/ISEA 107-2015 Type R during hours of darkness, including 1/2 hour before sunset through 1/2 hour after sunrise, and during times of low visibility while in the project footprint.

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

Noncompliance with this contract provision may result in removal of contractor personnel from the project or suspension of work according to Wisconsin Department of Transportation standard spec 108.6 applicable under the contract. The department may request amendments to safety plans or follow up action reports for any safety incidents occurring on the project.

22. Notice to Contractor – Media Relations.

⁽¹⁾ The contractor shall not disseminate or publicize this Agreement, information relating to this Agreement, their work responsibilities, or generally comment about the entire project without prior written

consent from one of the department's designated Project Communications Leaders listed under Section 4.

(2) The contractor shall refer all information requests or interview requests made by external parties, including media sources, to all of the department's designated Project Communications Leaders listed under Section 4.

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

(4) The Project Communications Leaders for the department shall be:

1. I-94 East West, Early East Leg Project Manager

Eric Hanson

141 NW Barstow Street

P.O. Box 798

Waukesha, WI 53188

Phone: (414) 840-9341

Email: ericd.hanson@dot.wi.gov

2. Steven Theisen

4802 Sheboygan Avenue

Madison, WI 53705

Phone: (608) 267-9284

Email: steven.thiesen@dot.wi.gov

3. Dan Sellers

141 NW Barstow Street

P.O. Box 798

Waukesha, WI 53188

Phone: (262) 548-6702

Email: daniel.sellers@dot.wi.gov

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

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

23. Notice to Contractor – Milwaukee County Transit System.

The Milwaukee County Transit System (MCTS) operates the following bus routes within and/or directly adjacent to the construction limits: Purple Route, Route 18, Route 35, and Connect 1.

Impacts to MCTS Routing

Invite MCTS to all coordination meetings between the contractor, the department, local officials and business stakeholders to discuss the project schedule of operations including vehicular and pedestrian access during construction operations. Notify MCTS at least ten (10) business days prior to beginning project work to provide advance notice of potential service impacts.

Impacts to MCTS Signs and Posts

Notify MCTS of work impacting MCTS signs and posts in advance five (5) or more business days. MCTS signs include "Bus Stop" and turn disc signs. MCTS signs are mounted on MCTS posts; and on assets owned by others including streetlights, traffic regulators, crosswalk and street signposts. MCTS shall be responsible for MCTS sign and post removal and installation, with the contractor granting access to MCTS personnel to perform such work. Signs stating "No Parking Bus Stop" are the under the ownership and responsibility of City of Milwaukee.

Impacts to Bus Shelters

Contractor work may require bus shelter(s) to be temporarily removed. MCTS will be responsible for the removal and reinstallation of bus shelters, with the contractor granting access to MCTS personnel for the purposes of reinstallation before new pavement opens to vehicular traffic. Notify MCTS in advance ten (10) business days for each site-specific bus shelter location.

Non-detour Service Suspension at MCTS Bus Stops and Temporary Bus Stops

Occasions may arise when work requires neither a detour nor the physical alteration of MCTS bus stop assets, but (for passenger safety) those occasions involved require MCTS to temporarily suspend service at a bus stop location. Notify MCTS in advance five (5) business days of the site-specific occasion, and MCTS will sign appropriately to instruct passengers to board at a temporary bus stop. Notify MCTS upon completion of work. MCTS will resume service to any suspended bus stop locations when it is safe to do so.

Temporary Bus Stops

MCTS will designate temporary bus stop boarding locations using MCTS temporary signs. Temporary bus stops will be in existing right-of-way at ADA-accessible locations outside the project's construction zone. MCTS is not requesting this project to provide temporary boarding pads.

MCTS contacts:

Dan Adams (primarily construction planning & design)
Milwaukee County Transit System
1942 N. 17th St.
(414) 937-3273
dadams@mcts.org

Armond Sensabaugh (primarily staging & detours)
Milwaukee County Transit System
1942 N. 17th St.
Milwaukee, WI 53205
Phone: (414) 343-1728
asensabaugh@mcts.org

David Locher
Milwaukee County Transit System
1942 N. 17th St.
Milwaukee, WI 53205
Phone: (414) 343-1727
dlocher@mcts.org

SER-107-004 (20180413)

24. Notice to Contractor – Damage Claims.

Supplement standard spec 107 with the following:

Provide documentation for all damage claims received on the project. Provide written updates to the engineer at each Weekly Progress Meeting until damage claims are resolved.

Documentation shall include:

1. Written communication with property owner and/or owner's insurance.
2. Settlement amounts, if applicable.
3. Basis for rejection of damage claim, if applicable.

Contractor shall provide written documentation of conclusions for all claims, actions, or suits.

The department will retain payments due to the contractor in amounts the engineer deems sufficient until documentation is provided.

25. Notice to Contractor – Crack and Damage Survey.

The department will perform pre and post construction crack and damage surveys for properties identified in this article. Completion of surveys is limited to property owner participation and may not include all properties identified. The department may also survey additional properties if determined necessary through the course of the construction project. The results of the surveys that were able to be completed will be available to the contractor upon request.

The completion of the crack and damage surveys by the department does not relieve the contractor of responsibilities required under Section 107 of the Standard Specifications.

The completion of these surveys does not preclude the contractor from performing independent surveys. The cost of additional surveys performed by the contractor is incidental to the contract.

Address	Type
423 N 28TH ST	RESIDENTIAL
427 N 28TH ST	RESIDENTIAL
437 & 439 N 28TH ST	DOUBLE UNIT RESIDENTIAL
443 N 28TH ST	RESIDENTIAL
436 N 28TH ST	RESIDENTIAL
426 N 28TH ST	RESIDENTIAL
418 N 28TH ST	RESIDENTIAL
412 N 28TH ST	RESIDENTIAL
402 N 28TH ST	RESIDENTIAL
337 N 29TH ST	RESIDENTIAL
343 N 29TH ST	RESIDENTIAL
403 N 29TH ST	RESIDENTIAL
2830 W ST PAUL AVE	RESIDENTIAL
2820 & 2826 W ST PAUL AVE	DOUBLE UNIT RESIDENTIAL
2818 W ST PAUL AVE	RESIDENTIAL
2732 & 2734 W ST PAUL AVE	DOUBLE UNIT RESIDENTIAL
2724 W ST PAUL AVE	COMMERCIAL DREAMLAND PETROLEUM COMPANY
2710 W ST PAUL AVE	COMMERCIAL DREAMLAND PETROLEUM COMPANY
405 N 27TH ST	COMMERCIAL DREAMLAND PETROLEUM COMPANY
418 N 27TH ST	COMMERCIAL RVS 2-0 LLC
321 N 25TH ST	COMMERCIAL ALMACEN DEVELOPMENT LLC

26. Notice to Contractor – Electronic Load Tickets.

Replace standard spec 109.1.4.3 (1) with the following:

(1) Submit an electronic ticket for each load of material for the following bid items:

- 502.0100 – Concrete Masonry Bridges
- 504.0500 – Concrete Masonry Retaining Wall
- SPV.0035.4000 – HPC Masonry Structures

Include the information as specified in 109.1.4.2 on each electronic ticket. If there is a failure in the electronic ticket system, provide a printed ticket for each load of material as a substitute for electronic tickets.

stp-107-230 (20250108)

27. Notice to Contractor – Containment System.

Add the following to standard spec 203.3.3:

- (6) 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. 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. 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.

28. Notice to Contractor – Contamination Beyond Construction Limits.

The department completed testing for soil and ground water contamination for locations within this project where excavation is required. Testing indicated that petroleum- and metals-contaminated soil is present at the following location:

1. Station 23TLC+10 to 23TLC+24 from 147 feet right of reference line to 173 feet right of reference line, from 0.5 to 2.5 feet below grade.

The contaminated soil at the above location is expected to be beyond the excavation limits necessary to complete the work under this project. Control construction operations at this location to ensure that they do not extend beyond the excavation limits indicated in the plans. If contaminated soils are encountered at this location or elsewhere on the project during excavation, terminate excavation in the area and notify the engineer.

The Hazardous Materials Report is available by contacting: Andrew Malsom, WisDOT, 141 NW Barstow St., Waukesha, WI 53187, (262) 548-6705.

stp-107-100 (20230113)

29. Notice to Contractor – Saw Cut Slurry.

Saw cut slurry that may be generated as part of this contract shall be collected and actively managed. Take appropriate measures to prevent saw cut slurry from entering inlets, wetlands, waterways, and other natural areas.

30. Notice to Contractor – Concrete Washout Containment.

All concrete trucks shall washout into a containment system located sufficiently away from the work area to prevent runoff into wetlands, waterways, inlets, and drainage courses. The contractor shall provide a construction detail and location of the containment system with the ECIP and reviewed by the engineer prior to use.

31. Public Involvement Meetings.

Participate in department-sponsored public involvement meetings as the engineer requests. Ensure that representatives of subcontractors also participate in those meetings if the engineer requests. Participation in public involvement meetings is considered incidental and no separate payment will be made for participating in public involvement meetings.

~~ref 999-040 (20160915)~~

32. Public Convenience and Safety.

Revise standard spec 107.8(6) as follows:

Check for and comply with local ordinances governing the hours of operation of construction equipment. Do not operate motorized construction equipment from 9:00 PM until the following 7:00 AM, unless prior written approval is obtained from the engineer.

stp-107-001 (20060512)

Comply with all local ordinances that apply to local street work operations, including those pertaining to working during nighttime hours. Furnish any ordinance variance issued by the municipality or required permits to the engineer in writing 3 business days prior to performing such work.

33. Contract Award and Execution.

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

103.9 Bid Escrow Documentation

- (1) The department will require the lowest responsible bidder to submit documentation to be placed in escrow at a document storage facility. Bid Escrow Documentation (BED) consists of writings, working papers, computer printouts, charts, and data compilations that contain or reflect information, data, calculations, or assumptions used by the bidder to determine the proposal submitted. If the apparent low bid is withdrawn or rejected, the second low bidder will provide the required documents as specified in this special provision within 72 hours of written notification by the department.
- (2) The BED shall clearly itemize the contractor's estimated costs of performing the scope of work defined in the contract.
- (3) The BED shall include, but not be limited to, all quantity takeoffs, rate schedules for the direct costs of craft labor, construction (expendable materials), construction equipment ownership costs, construction equipment operating costs, permanent materials subcontractors and insurance. Also include development of rates of production including, where appropriate: estimate of crews, construction materials, construction equipment, and construction sequence and duration. Submit the BED for each subcontractor whose total subcontract costs exceed \$2,000,000.
- (4) Identify the allocation of construction plant and equipment, time and non-time related indirect costs (including if applicable joint venture fees), home office overhead, contingencies and margin applicable to each bid item. Further, documentation shall include consultant's reports, final estimate adjustment calculations, and all other information used by bidders to arrive at the estimate.
- (5) All manuals standard to the industry used by the bidder in determining the proposal are also considered part of the BED. These manuals may be included in the proposal documentation by reference and shall show the name and date of the publication and the publisher.
- (6) It is not necessary to include documents provided by the department for the bidder's use in the preparation of the proposal.
- (7) The low bidder shall present authentic copies of their BED at the department's office, located at WisDOT Southeast Region Office, 141 NW Barstow Street, Waukesha WI, 53188 by 3 days after Let, at 10:00 AM.
- (8) At the time of submittal, only designated representatives of the apparent low bidder and the department will jointly examine the apparent low bidder's bid documentation to determine if it is authentic, legible, and generally meets the requirements of this special provision. The department will not share the BED information with, or in any other way divulge the contents of, the apparent low bidder's BED to, their subcontractors or any other party.
- (9) The department, if requested by apparent low-bidder subcontractors, will also independently examine the BED submitted by the apparent low bidder's subcontractors in the same manner as the apparent low bidder's BED was examined. Only designated representatives of the individual subcontractor and the department will be present during this examination. The department will not share the BED information with, or in any other way divulge the contents of, a subcontractor's BED to, the apparent low bidder or any other party.
- (10) The department's examination of the BED will not include review of, nor will it constitute approval of, proposed construction methods, estimating assumptions, or interpretation of the contract. The examination will not alter any conditions or terms of the contract. The department will determine if the

BED complies with this special provision. If the BED does not meet the requirements of this special provision, the department may reject the bid.

- (11) If the BED of the apparent low bidder meets the requirements of this special provision, the department and bidder will jointly deposit the BED at an agreed document storage facility. Place the BED in a sealed envelope or container clearly marked with the bidder's name and address, date of submittal, project name and identification number. Representatives of the department and the bidder will deliver all bid escrow documentation and the original affidavit directly to a document storage facility, to be placed in escrow.
- (12) If the apparent low bid is withdrawn or rejected, the designated representative of the second low bidder and the department will examine and inventory the bid documentation of the second low bidder and their subcontractors in the manner specified in this section, then seal and deposit in escrow. If a subcontractor with a subcontract exceeding \$2,000,000 is replaced, the contractor shall submit new BED for examination and escrow before the engineer will authorize the substitution.
- (13) The department will pay for the costs of the escrow document storage facility and will provide escrow instructions to the document facility consistent with this special provision.
- (14) The department acknowledges that the bidder considers that the BED constitutes trade secrets or proprietary information. This acknowledgment is based upon department's understanding that the information contained in the BED is not known outside each bidder's business, is known only to a limited extent and by a limited number of employees of bidder, is safeguarded while in bidder's possession, and may be valuable to bidder's construction strategies, assumptions and intended means, methods and techniques of design and construction. Except as set forth in the contract or as required by applicable Law, the department acknowledges that the BED will always remain in the possession of the Escrow Agent and will at no time be received by, or become the property of, the department.
- (15) Submit a copy of the affidavit in this special provision, signed under oath before a Notary Public by a representative of the bidder authorized to execute proposals. Department representatives will sign the affidavit after reviewing the BED.
- (16) The BED will remain in escrow until one or more of the following occurs:
 1. The bidder and the department mutually agree to release of the BED;
 2. A court orders the department to provide the BED;
 3. A claim is submitted under standard specification 105.13; or
 4. Either party seeks judicial review of a dispute.
- (17) If any of the events numbered 1-4 in this section occurs, the department will take possession of all relevant portions of the BED, as determined by the department, until complete resolution of the issue for which the request was made or the court order was issued. In absence of these actions, and provided the bidder signs an appropriate release, the unopened BED will be released to the bidder upon final acceptance and the expiration of all warranty periods provided by this contract.

BID ESCROW DOCUMENTATION CERTIFICATION

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

BIDDER

WITNESS

(Name of Bidder)

(Name of Witness)

By: _____
(Signature*)

By: _____
(Signature*)

Title _____

Date: _____

Date _____

WISCONSIN DOT

WISCONSIN DOT

(Name of Department Representative)

(Name of Department Representative)

By: _____
(Signature*)

By: _____
(Signature*)

Title _____

Title: _____

(END OF BID ESCROW DOCUMENTS)

103.10 Mobilization Workshops

103.10.1 Workshop Schedule

- (1) After contract award, attend the following workshops. Each workshop is described within this special provision and will include the following topics:
 1. Project Kickoff and Initial Work Plan
 2. Cost Reduction Incentives
 3. Utility Coordination
 4. Submittals
 5. CPM Scheduling
 6. Leadership Partnering (Initial Session)
 7. Drilled Foundation Shaft Construction
 8. ~~Storm Sewer Tunneling~~ (Vacant)
 9. Incident Crisis Communications Plan
 10. Notice to Proceed
 11. Safety Workshop
- (2) The workshop dates will be scheduled after contract award.
- (3) If necessary, the engineer may modify the workshop schedule to ensure attendance by the necessary department and contractor personnel; however, all workshops will be completed before issuing the Notice to Proceed.

103.10.2 Workshops

103.10.2.1 Project Kickoff and Initial Work Plan

103.10.2.1.1 General

- (1) The Project Kickoff and Initial Work Plan Workshop will provide a forum to discuss and answer questions relative to the proposal, bid schedule, and other questions in the Project Questionnaire described in section 103.10.2.1.2. The Initial Work Plan Workshop will include:
 1. Contractor responses to the attached Project Questionnaire.
 2. Department presentation of the use of CPM scheduling on the project and presentation of the department's Master Schedule to the contractor.
 3. Contractor presentation of its conceptual work plan for the project.
 4. Department and contractor discussion of the level of detail and features in the Initial Work Plan and the Baseline CPM Progress Schedule.

103.10.2.1.2 Project Questionnaire

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

General Information

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

Provide the following information about the company:

Firm Name

Address

Telephone and facsimile numbers; e-mail address

Contracting Specialties

Years performing work in contracting specialties

Geographic areas served

Total Management Employees and years of service

Project Managers

General Superintendents

Craft Superintendents

Engineers

Estimators
CPM Schedulers

Construction Engineering

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

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

Provide plan for Construction surveying

Subcontractors

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

Permanent Material Suppliers

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

Quality Control (where applicable)

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

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

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

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

Organization Chart

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

Work Rules

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

Maintenance of Traffic

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

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

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

Construction

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

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

103.10.2.2 Cost Reduction Incentives

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

Service life
Economy of operation
Ease of maintenance
Benefits to the traveling public
Desired appearance

Design and safety standards

- (2) Submit recommendations resulting from the workshop for approval by the engineer as cost reduction incentive proposals in conformance with standard spec 104.10 "Cost Reduction Incentive".
- (3) The department and the contractor may be able to complete the CRI Concept process, as specified in 104.10.2, during the CRI workshop.
- (4) Submit CRIs after the CRI workshop that were not introduced at the CRI workshop.

103.10.2.3 Utility Coordination

- (1) The Utility Coordination Workshop will define the scope and schedule of utility relocation work and the corresponding roles and responsibilities of the project team.
 - 1. At a minimum, the following key personnel will attend the Utility Coordination Meeting.
 - 1.1. Department's Utility Coordinator.
 - 1.2. Contractor's Utility Coordinator.
 - 1.3. Designer Team's Utility Coordinator.
 - 1.4. Key Utility Company Representative(s)
 - 2. At a minimum, the Utility Coordination Meeting will include a review of the following:
 - 2.1. Summary of all required utility relocations on the project.
 - 2.2. Special provisions addressing utility work.
 - 2.3. Sharing of contact information.
 - 2.4. Scheduling of work for utility relocation including critical milestones and staging for the work.

103.10.2.4 Submittals

- (1) The Submittal Workshop will identify the key required submittals for the project, categorize submittals into functional areas, and develop a schedule for submittals and submittal reviews. The Workshop participants will at a minimum:
 - 1. Review the project special provisions.
 - 2. Categorize submittals into functional areas including:
 - 2.1 MSE Retaining Walls
 - 2.2 Temporary Shoring
 - 2.3 Falsework and Formwork
 - 2.4 Girder Shop Drawings
 - 2.5 Steel Transportation, Delivery and Erection
 - 2.6 Structure Demolition Plans
 - 2.7 Pile Hammers and High Capacity Piling
 - 2.8 Concrete/ Asphalt
 - 2.9 Materials
 - 2.10 ITS / Lighting
 - 2.11 Traffic Signals
 - 2.12 Sanitary Sewer and Water
 - 2.13 Permits
 - 2.14 Emergency Work Zone Plan
 - 2.15 Signage
 - 3. Develop a schedule for submittals.

103.10.2.5 CPM Schedule

See specification Baseline CPM Progress Schedule.

103.10.2.6 Leadership Partnering Meetings Bi-Weekly

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

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

- (2) This meeting will facilitate a cooperative team environment that clearly defines roles and responsibilities, determines common goals and objectives, and provides a platform to build trust and accountability.

Meeting topics may include:

- Issue and risk management
- Dispute resolution procedures
- Safety
- Public outreach
- Traffic management
- Cost reducing incentives
- Claim resolution
- Scheduling issues
- Quality control

All mobilization workshop costs are incidental to the contract work.

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103.10.2.7 Drilled Foundation Shaft Construction

- (1) The Drilled Foundation Shaft Construction workshop will serve as a pre-construction kickoff meeting specifically for the Drilled Foundation Shaft work and occur before all Drilled Foundation Shaft work being performed on the job, including the installation of the Trial Drilled Foundation Shaft. The workshop must be attended by representatives of the prime contractor and key members of the prequalified drilling shaft subcontractor performing the soldier pile installation. At minimum, key members of the drilling subcontractor includes on-site principal in charge, on-site construction supervisor and crew foremen.
- (2) The workshop agenda will include review and discussion of the drilling subcontractors submitted drilled shaft installation plan; scheduling and coordination of the soldier pile drilled shaft installation work; mobilization and preparation; and subsequent work operations associated with the construction.

103.10.2.8 Storm Sewer Tunneling (Vacant)

103.10.2.9 Incident Crisis Communications Plan

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

103.10.2.10 Notice to Proceed

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

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103.10.2.11 Safety Workshop

- (1) The Safety Workshop will provide a forum to discuss, review, and answer questions regarding pertinent safety topics of the project.

1. At a minimum, the following key personnel will attend the Safety Workshop:

- 1.1. Contractor's project management

- 1.2. Contractor's foremen and safety representatives
 - 1.3. Subcontractor's project management and foremen
 - 1.4. Department's construction project management
 - 1.5. Department's construction team project leaders
2. At a minimum, the Safety Workshop will include a review of the following:
 - 2.1. Prime contractor's presentation of site safety plan
 - 2.2. Subcontractor's presentations of site safety plans
 - 2.3. Contractor incident report process
 - 2.4. Review of safety special provisions
 - 2.5. Damage claims process
 - 2.6. Recurring safety meeting schedule
- (2) The department will implement mandatory Bi-annual Safety Workshops. Unless the department and contractor agree otherwise, the personnel listed in 103.10.11(1)1 will attend the Bi-annual Safety Workshops from project start until the project is sustainably complete. The contractor or department may also invite additional attendees, including the department's risk and safety personnel. The meeting will facilitate a cooperative team environment and open discussion regarding project safety.
1. Bi-annual Safety Workshop agenda topics may include:
 - 1.1. Review of previous and ongoing project activities and associated safety topics
 - 1.2. Review of upcoming project activity and safety strategies
 - 1.3. Incident and damage claim status updates
 2. The department reserves the right to adjust or increase the frequency of the recurring Safety Workshop meetings.

34. BIM for Infrastructure Model.

Abbreviations

WisDOT SE Region (Department) defines terms within this special provision as follows:

BIM	Building Information Model
CAD	Computer-aided Design
GIS	Geographic Information Systems
PMM	Project Modeling Matrix
LOA	Level of Accuracy
LOD	Level of Development (2D/3D)
PS&E	Plans, Specifications, and Estimates
AMG	Automated Machine Guidance
PMM	Project Modeling Matrix
RD	Radio Detection
GPR	Ground Penetrating Radar
SPAR	Subsurface Signal Location Coupled with GNSS Survey
EMI	Electromagnetic Induction
ASC	ASCII Text File Format
CSV	Comma Separated Value File Format for Microsoft Excel Spreadsheet for Survey Layout
DWG	Autodesk Proprietary File Format for CAD Data
XML	Non-Proprietary File Format for Exchanging Geometry-centric 3D Data
IFC	Industry Foundation Class File Format
GNSS	Global Navigation Satellite System used to pinpoint geographic locations worldwide
ROW	Right of Way

DTM	Digital Terrain Model
DSM	Digital Surface Model
TIN	Triangulated Irregular Network
CD	Contract Documents
2D	2D Model X,Y
3D	3D Model X,Y,Z

General Content

By agreement with the Contractor, the Department will provide electronically stored BIM model deliverables. These are provided for informational purposes only, and not as an end product or as a record document, to augment project Plans, Specifications, and Estimates (PS&E). Reliance thereon is deemed to be unreasonable and unenforceable. Engineer will maintain and update as needed BIM model project deliverables consisting of proposed comprehensive 2D/3D model data or portions of data which may include final states for the following when available:

- Roadways
- Grading
- Drainage
- Structures
- FTMS-Freeway Traffic Management System
- Signals
- Lighting

Deliverables and Format

Engineer will maintain and update the data or portions of the BIM model electronically consisting of electronic 2D/3D files containing the following:

- Features
- Points
- Reference lines
- Break lines
- Area extents lines
- Profiles

The Department will provide updated 2D/3D model information from design (including plans, specifications, and estimates, addendums, and all plan revisions).

Project deliverables include electronic digital BIM model data and CAD data provided in Autodesk Civil 3D/Autocad 2024 and LandXML 1.2 file format and additionally construction stakeout data in ACSII format and CSV format. The BIM model data will contain:

- Features
- Points
- Mass points
- Lines
- Reference lines
- Break lines
- Area extents lines
- Profiles
- 3D TIN DTM surfaces
- LandXML surfaces

All data will be georeferenced to horizontal datum - NAD-83 (2007), vertical datum - NAVD-1988 (2007), and coordinate projection - Wisconsin County Coordinate System in U.S. survey feet. Specific datum/adjustment will be maintained for each WisDOT project to maintain accuracy and consistency. Horizontal and vertical datums will be provided on the Title Sheet of the WisDOT plan sets.

If you have any questions as to Project Datum/Adjustment, confirm with:

Thomas Lipsky, RLS Wisconsin DOT
SE Region Survey
thomas.lipsky@dot.wi.gov
(262) 548-6737

If you have any questions as to Model Content, confirm with either of the following:

Chris Zacharias, Project Manager Wisconsin DOT
SE Freeways/Region Design
christopher.zacharias@dot.wi.gov [mailto:](mailto:christopher.zacharias@dot.wi.gov)
(262) 548-6716

Delivery Schedule

The BIM is for informational purposes only, and not a contract document. The department will make the BIM model data available with the contractor data packet according to the following schedule dates:

- AMG Roadway elements (Roadways/Surfaces-Proposed) and Roadway features by the project advertisement date;
- Remaining LOD-CD elements at the project advertisement date.

BIM MODEL REQUIREMENTS: PROJECT I-94 East West, Early East Leg, 1060-27-74

Element / P-Proposed	Format	Data Type	LOA	LOD	Temp
RD-Roadways/Surfaces-Proposed					
Road Pavement-Top Surfaces-P	DWG/XML	DTM/DSM	0.02'+/-	3D	3D
Road Pavement-Base Course Surfs-P	DWG/XML	DTM/DSM	0.06'+/-	3D	3D
Road Pavement-Subgrade Surfs-P	DWG/XML	DTM/DSM	0.06'+/-	3D	3D
Road Curb & Gutter-P	DWG/XML	DSM/Line	0.02'+/-	2D/3D	N/A
Road Barriers-P	DWG/XML	DSM/Line	0.06'+/-	2D/3D	N/A
Road Alignments/Ref Lines/EOP-P	DWG/XML	Line	0.02'+/-	2D/3D	2D/3D
Road Stationing-P	DWG	Text	0.10'+/-	2D	N/A
Road Superelevation Transition Stations-P	CSV	Point	0.02'+/-	2D	N/A
ST-Storm Sewer/Drainage – Proposed					
Inlets/MHs/OFs/Pipes/Culverts-E	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
Inlets/MHs/OFs/Pipes/Culverts-P	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	2D/3D
Ponds-E	DWG	DSM/Line	0.06'+/-	2D/3D	N/A
Ponds-P	DWG	DSM/Line	0.06'+/-	2D/3D	N/A
BR-Bridges-Proposed					
Stone Base	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Piles	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Footings	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Abutments	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Piers	DWG/DGN/XML	Line/Solid	0.02'+/-	2D/3D	N/A
CI Beams	DWG/DGN/XML	Line/Solid	0.02'+/-	2D/3D	N/A

Seats	DWG/DGN/XML	Line/Solid	0.02'+/-	2D/3D	N/A
Deck Including Fillets	DWG/DGN/XML	Line/Solid	0.02'+/-	2D/3D	N/A
Light Blisters	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Parapet Walls	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
RW-Retaining Walls-Proposed					
MSE-Proposed					
Straps	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Footings	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Top	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Coping	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
CIP-Cast-in-Place-Proposed					
Stone	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Piles	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Top of Footings	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Face of Wall	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Coping	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
PAL-Pile & Lagging-Proposed					
CI Piles at Top & Bottom	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Face of Wall/Face of Piles	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Bottom of Wall	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Top of Wall/Coping	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Face of Piles	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Top and Toe of Sheets	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
SB-Sign Bridges-Proposed					
Footings	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Piles	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Structure	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Other Structures-Proposed					
NW-Noise Walls	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
TU-Tunnels-Utility	DWG/DGN/XML	Line/Solid	0.02'+/-	2D/3D	N/A
SF-Special Foundations-Proposed					
Drilled Shafts	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Driven Piles	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Bored Piles	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A

Caissons	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
SF-Special Foundation Walls-Proposed					
Foundation Anchors	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Underpinning	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Pile Caps	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Grade Beams	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
Tiebacks	DWG/DGN/XML	Line/Solid	0.06'+/-	2D/3D	N/A
LI-Lighting-Proposed					
Poles/Masts/Bases	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
Conduit/Cabinets/Pull Boxes	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
IT-ITS/FTMS Proposed					
DMS/CMS	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
FTMS Fiber Optic lines	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
FTMS Huts/Cabinets	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
SG-Signals-Proposed					
Poles/Heads/Bases	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
Conduit/Pull Boxes	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
WM-Water Main Proposed					
Pipes	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
Hydrants/Valves/Fittings/ Standpipes	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
SS-Sanitary Sewer-Proposed					
Pipes	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A
Manholes	DWG/DGN	Line/Solid	0.06'+/-	2D/3D	N/A

35. Available Documents.

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

- Design Study Report
- Interstate Access Justification Report
- Pavement Type Selection Report
- Environmental Document
- As-Built Drawings
- Traffic Management Plan

These documents are available from Chris Zacharias at 141 NW Barstow Street, Waukesha, WI 53187 (414) 548-6716.

Reproduction costs will be applied to all copies requested.

sef-102-005 (20170310)

36. Geotechnical Investigation Information.

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

Available information relative to subsurface exploration, borings, soundings, water levels, elevations, or profiles are available for review at the department's Regions office. Contact Chris Zacharias, 141 NW Barstow Street, Waukesha, WI 53187, (262) 548-6716. Christopher.Zacharias@dot.wi.gov

- Geotechnical Exploration and Bridge Foundation Evaluation Report, Bridge B-40-1083, May 1, 2025
- Geotechnical Exploration and Retaining Wall Evaluation Report Retaining Walls R-40-761 and R-40-767, May 1, 2025
- Geotechnical Exploration and Retaining Wall Data Report Temporary Shoring Left In Place B-40-57, May 1, 2025
- Additional reports anticipated for other structures.

Additional geotechnical information is available from studies and analyses that have been performed by Jacobs for the department for other aspects of this project. Review the available information to determine if it is of use. The use or not of the geotechnical information does not relieve performing the work conforming to the plans and specifications.

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37. Eliminated Work

Replace standard spec 104.2.2.5 with the following:

104.2.2.5 Change Orders for Eliminated Work

- (1) The department has the right to partially eliminate or completely eliminate work the engineer finds to be unnecessary for the project. If the department eliminates work, the engineer will send a Work Authorization Form (WAF) directing the contractor to eliminate the work. If the engineer partially eliminates or completely eliminates work, the engineer will issue a contract change order for a fair and equitable amount as specified in 109.5.
- (2) If the department executes an equalizing change order for the purpose of matching the authorized quantity to the amount of units measured and paid for any bid item, this shall not be considered eliminated work.

38. Contractor Notification.

Replace standard spec 104.2.2.2(2) with the following:

- (2) If the contractor discovers the differing condition, provide a written notice, as specified in standard spec 104.3.2, of the specific differing condition before further disturbing the site and before further performing the affected work.

Replace standard spec 104.3.2 with the following:

104.3.2 Contractor Initial Written Notice

- (1) If required by standard spec 104.2, or if the contractor believes that the department's action, the department's lack of action, or some other situation results in or necessitates a contract revision, promptly provide a written notice to the engineer. At a minimum, provide the following:
 1. A written description of the nature of the issue.
 2. The time and date of discovering the problem or issue.
 3. If appropriate, the location of the issue.
- (2) Provide the additional information specified in 104.3.3 as early as possible to assist the engineer in the timely resolution of an identified issue. The engineer will not require, in subsequent submissions, duplication of information already provided.

39. Contractor Document Submittals.

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

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

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

Submit electronic copies in PDF format to the engineer-designated folder within the department's SharePoint site. Send alerts with a link to the document via email to accounts the engineer determines. If possible, create PDFs from original documents in their native format (e.g. Word, Excel, AutoCAD, etc.). Scan other documents to PDF format with a minimum resolution of 600 dpi.

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

sef-105-010 (20150619)

40. Dust Control Implementation Plan.

A Description

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

B (Vacant)

C Construction

C.1 General

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

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

C.2 DCIP Contents

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

Include all of the following:

1. A single contact person with overall responsibility for the DCIP development as well as surveillance and remediation of job related dust. Provide:
 - Name, firm, address, and working-hours phone number.
 - Non-working-hours phone number.
 - Email address.
2. A site map locating project features, the job site boundaries, all ingress and egress points, air intakes and other dust-sensitive areas, and all public and private paved surfaces within and adjacent to the job site. Show where specific land disturbing, dust generating activities will occur and, to the extent possible, where employing various dust control or prevention strategies.
3. A matrix, or plan, for each anticipated land disturbing, dust generating activity, showing the following:
 - Preventive measures that shall be employed.
 - The applicable contact person.
 - The contractor's timetable and surveillance measures used to determine when remediation is required.

- The specific dust control and remediation measures that shall be employed. Identify the specific contract bid items that shall be used for payment. Indicate costs and practices that are incidental to the contract.
 - Both maintenance and cleanup schedules and procedures.
 - Excess and waste materials disposal strategy.
4. A description of monitoring and resolving off-site impacts.

C.3 Updating the DCIP

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

C.4 Dust Control Deficiencies

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

D Measurement

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

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

- 623.0200 Dust Control Surface Treatment
- 624.0100 Water
- 628.7560 Tracking Pads
- SPV.0075. 0203 Pavement Cleanup Project 1060-27-74

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

E Payment

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

sef-107-005 (20170323)

41. Project Site Air Quality.

Because fine particulate matter levels for Milwaukee County are typically close to PM_{2.5} limits and the project is in a non-attainment area for the federal 8-hour ozone standard, contributions from construction activities can have a major impact well beyond the project limits. Take practical measures to mitigate the impact of operating construction equipment on the air quality in and around the project site.

Voluntarily establishing the staging zones for trucks waiting to load and unload is encouraged by the department. Locate staging zones where idling of diesel powered equipment will have minimal impact on abutting properties and the general public. The department will make signs available to help identify these zones. Have truckers queue up in these zones whenever it is practical. The department further encourages drivers to shut down diesel trucks as soon as it appears likely that they will be queued up for more than ten minutes. Notify employees and sub-contractors about fueling and engine idling.

Portable Concrete Crusher Plants

Portable concrete crusher plants may need a NR 440 Concrete Crusher Plant Air Permit for air emissions. Please contact Wisconsin Department of Natural Resources to request additional information and permit application materials. Complete permit applications may take 3 months to process.

sef-999-039 (20160929)

42. Maintaining Drainage.

Maintain drainage at and through worksite during construction conforming to standard spec 107.20, 204, 205 and 520.

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

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

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

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

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

sef-107-016 (20170310)

43. Subletting the Contract.

Replace standard spec 108.1.1 (3) with the following:

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

sef-108-035 (20171004)

44. Removing Old Bridges and Retaining Walls.

Add the following to standard spec 203.3.1:

203.3.1.1 Structure Removal Site Safety Plan

- (1) Prepare a Structure Removal Site Safety Plan covering all structure removal work included in the contract. Maintain posted copies of the Structure Removal Site Safety Plan at the site in the project field office. Provide two copies of the Structure Removal Site Safety Plan to the engineer at least four weeks before beginning removal work.

203.3.1.2 Structure Removal Plans

- (1) Prepare a structure specific removal plan for each of the following existing structures indicating the methods and sequence of demolition:

Existing Structure	Structure Type	Feature On	Feature Under
B-40-0043	2-Span Continuous Steel Deck Girder	27 th Street	IH-94
B-40-057	2-Span Continuous Steel Deck Girder	St. Paul Avenue / 26 th Street	IH-94
B-40-0513_005	4-Span Continuous Steel Deck Girder	27 th Street	Greves Street/Land

Existing Structure	Structure Type	Feature On	Feature Under
CIP Concrete Retaining Wall 415EW+60 – 415EW+83	Approximately 270' Long Cast-in-place Concrete Retaining Wall	IH 94 EB	Land (Former Red Star Yeast Property)
R-40-10	451' Long Cast-in-place Concrete Retaining Wall	Retaining IH-94 EB	Land (Former Red Star Yeast Property)
R-40-33	260' Long Cast-in-place Concrete Retaining Wall	Retaining IH-94 EB off-ramp to 26 th Street	Land

This table does not include all the structure removals included in the contract. It is a list of existing structure removals included in the contract for which a structure specific detailed removal plan is required to be submitted.

Examine the existing structure plans and visit the site before preparing and submitting the structure removal plan(s). The contractor is responsible for the methods and sequence of demolition, including effects on the overall stability of each structure being removed. At a minimum, each removal plan shall include:

1. The name of the professional engineer, registered in the state of Wisconsin who will be on site and monitoring the removal of existing structures as required in this specification.
2. The name of the contractor's on-site-employee designated in responsible charge of all removal operations.
3. The removal method and sequence of removal for each individual structure, including the staging of bridge removals.
4. Analysis of the stability of the structure based on the methods and sequence of demolition proposed, to ensure that the structure is demolished in a safe and controlled manner. The analysis computations shall be prepared, signed and sealed by a professional engineer registered in the State of Wisconsin.
5. Design and details of temporary supports, shoring or temporary bracing, if required to stabilize portions of partially remaining structures during the removal sequence or support partially remaining structures after staged removals. Include design computations and detail drawings for all temporary supports, shoring and bracing that indicate the exact placement of the temporary supports, shoring or bracing; verification of design loads; attachment details; and methods for the safe transfer of loads from existing structural elements to be removed to the temporary supports, shoring, or bracing. Temporary support, shoring, or bracing design computations and drawings details are to be prepared, signed and sealed by a professional engineer registered in the State of Wisconsin.
6. Design and details of temporary support foundations. Include in the foundation design the evaluation of expected foundation settlement and the effect that this will have on the structure being supported. Temporary support foundation design computations and drawing details are to be prepared, signed and sealed by a professional engineer registered in the State of Wisconsin.
7. Equipment type and locations of equipment on the structure(s) or adjacent roadways during the removal operations
8. Locations and type of work to be performed directly adjacent to traffic.
9. Details and locations of protective covers and other measures to ensure that people, property and improvements will not be endangered or damaged as a result of the removal operations. Include methods for protecting any pavement surfaces including shoulders, concrete barriers, and other highway features.
10. Methods of removal, hauling and disposal, including haul routes and disposal destination.
11. A schedule of anticipated roadway and lane closures to accommodate removal operations. Include the timing of individual lane or temporary roadway closures and the nature of removal operations that will be performed during the lane or roadway closures.

12. Acknowledgement that the contractor and removal design engineer responsible for preparing the removal plan have visited the site and reviewed the existing structure plans in preparing the removal plan.

Structure Pre-Removal Meetings

After submission of the Structure Removal Site Safety Plan and required Structure Removal Plan(s), schedule and conduct structure pre-removal meetings at a time agreed to by the engineer. Hold structure pre-removal meetings at least three working days before beginning structure removal activities. If the engineer agrees before, multiple structure removals can be combined and discussed at one structure pre-removal meeting. Otherwise, schedule and conduct a separate structure pre-removal meeting for each structure to be removed.

Supplement standard spec 203.3.2.1 with the following:

Perform structure removals conforming to the submitted Structure Removal Site Safety Plan and applicable Structure Removal Plan(s).

Supplement standard spec 203.5.1(2) with the following:

Payment includes preparation and submittal of a Structure Removal Site Safety Plan; preparation and submittal of Structure Removal Plan(s) and performing all structure removal work conforming to the submitted plans.

45. Removing Concrete Barrier.

Add the following to standard spec 204.3.2.2.1 as paragraph fifteen:

- (15) Under the Removing Concrete Barrier bid item, remove barrier and footing, unless specified in the plans, at the locations the plans show. Removal includes all required sawing conforming to standard spec 690.

Add the following to standard spec 204.5.1(2) as paragraph two:

- (2) Payment for Removing Concrete Barrier is full compensation for all required sawing and removal of existing barrier and footing, and sludge removal.

sef-204-025 (20180104)

46. Pavement Breaking Equipment.

Use only hydraulic pavement breaking equipment for breaking pavement within 300 feet of any structure. Do not use guillotine, drop hammer, falling weight, gravity impact breakers or equivalent equipment. A multi-head hydraulic drop hammer is allowed unless a structure is within 50 feet of the roadway.

47. Removing Asphaltic Surface Milling.

Removing Asphaltic Surface Milling includes the concrete base patch areas installed under this contract and previous projects. This will not be a separate item and the contractor must mill these areas.

48. Excavation For Structures Retaining Walls.

Add the following to standard spec 206.2:

- (3) If the plan details call for Controlled Low Strength Material (CLSM), provide CLSM for backfill consisting of a designed cementitious mixture of natural or processed materials. Allowable materials include natural sand, natural gravel, produced sand, foundry sand, produced gravel, fly ash, Portland cement, and other broken or fragmented mineral materials. The designed mixture shall have a consistent texture and flow characteristics, be self-leveling and not exhibit shrinkage after hardening. Design the mixture to reach a state of hardening such that it can support foot traffic in no more than 24 hours. Provide a mixture that also meets the following requirements:

Test	Method	Value
Flow	ASTM D-6103	9-inches minimum
Compressive Strength	ASTM D-6024	20 - 40 psi @ 14 days 40 - 80 psi @ 28 days 80 - 120 psi @ 90 days

Chemical admixtures to control air content and setting time are allowable. Ten days prior to placement, furnish the engineer with a design mix detailing all components and their proportions in the mix. Also, provide documentation from the supplier of the industrial byproducts that the foundry sand and fly ash used in the mixture meet the requirements for Industrial Byproducts Categories 1, 2, 3, or 4 in NR 538 of the Wisconsin Administrative Code for use as a confined geotechnical fill.

- (4) If the plan details call for flowable backfill, provide backfill material consisting of aggregates that conform to standard spec 501 for Grade A Concrete and do not add any cementitious material; cement or fly ash, to the flowable fill mix. Weigh aggregates at a batch plant suitable for batching concrete masonry. Mix and deliver to the project site using a truck mixer. Add enough water to enable the mixture to flow readily.

Add the following to standard spec 206.3.13.1:

- (13) For soldier pile retaining walls, when called for in the plans, backfill around soldier piles above the soldier pile foundations with CLSM as shown on the plans. If the official Weather Bureau forecast for the construction site predicts temperatures at or below freezing within the next 24 hours after placement of controlled low strength backfill, protect the placed materials from freezing during that time period. If the temperature is not forecast to rise above 40° F for 72 hours after placement, the engineer may require protection from freezing for up to 72 hours. No controlled low strength backfill shall be allowed to enter any stream, lake, or sewer system. The contractor shall be responsible for any clean up or remediation costs resulting from such occurrences.
- (14) For soldier pile retaining walls, when called for on the plans, fill all voids behind timber lagging and excavated soil with flowable backfill. Prior to placement of flowable backfill, provide for positive drainage of the area to be backfilled. Discharge from the truck in a manner to prevent segregation. Completely fill excavation in a single operation. Consolidation or compaction effort is not required.

Add the following to standard spec 206.5.2:

- (8) Payment for Structure Excavation Retaining Walls includes providing and placing CLSM as backfill when CLSM as backfill is called for on the plans.
- (9) Payment for Structure Excavation Retaining Walls includes providing and placing flowable backfill when flowable backfill is called for on the plans.
- (10) Payment for hauling and disposal of contaminated material will be measured and paid for separately under the bid items, "Excavation, Hauling, and Disposal of Petroleum Contaminated Soil", "Excavation, Hauling, and Reuse of Low-Level Petroleum Contaminated Soil", "Management of Solid Waste – Greves St, West of 27th St", or "Management of Solid Waste – Greves St, West of 27th St".

49. Backfill Slurry.

This special provision describes furnishing and placing backfill slurry for, but not limited to, removing and abandoning storm/combined sewer structures and installing storm/combined sewer pipes and structures as shown on the plans.

Use well-graded fine and coarse aggregate conforming to the standard combined aggregate gradation specified in Table 501-4. Weigh aggregates at a batch plant suitable for batching concrete masonry. Mix and deliver to the project site using a truck mixer. Add enough water to meet the requirements of 501.2.6 of the standard specs to enable the mixture to flow readily.

Backfill Slurry is considered a class III concrete mix. Follow the procedure in 716.2.2 of the standard specs for mix design certification and submittal.

Before placing backfill slurry, provide for positive drainage of the area to be backfilled. Discharge from the truck in a manner to prevent segregation. Consolidation or compaction effort will not be required. Twelve hours shall elapse before paving over the backfill.

Include backfill slurry used for, but not limited to, removing and abandoning storm/combined sewer structures, installation of storm/combined sewer structures, and structures under appropriate bid items. No separate payment will be made for the area to be backfilled; for providing a mix design; for furnishing, mixing, transporting, and placing backfill slurry; and for QMP certification.

50. QMP Subgrade.

A Description

- (1) This special provision describes requirements for subgrade materials within the roadway foundation as defined in standard spec 101.3 and as modified in the plan and special provisions. Follow standard spec 207 with the following additional requirements specified in this special provision for all work within the roadway foundation for permanent fill and mainline temporary pavement support at the locations the plans show.
- (2) Provide and maintain a quality control program. A quality control program is defined as all activities, including process control inspection, sampling and testing, and necessary adjustments in the process that are related to the construction of subgrade which meets all the requirements of this provision.
- (3) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work, and along with the Manual of Test Procedures (MOTP), describes sampling and testing procedures. The CMM and MOTP may be obtained at:

[Wisconsin Department of Transportation Quality management program \(wisconsin.gov\)](http://wisconsin.gov/wisconsin-dot.gov)

B Materials

B.1 Quality Control Plan

- (1) Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform grading work before the engineer reviews and approves the plan. Construct the project as the plan provides.
- (2) Do not change the quality control plan without the engineer's approval. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. The quality control plan shall provide the following elements:
 1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC, QV, and IA personnel.
 2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
 3. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
 4. Location of the QC laboratory, retained sample storage, and control charts and other documentation.
 5. A summary of the locations and calculated quantities to be tested under this provision.
 6. An explanation regarding the basis of acceptance for material that cannot be tested by nuclear methods due to a high percentage of oversized particles.

B.2 Personnel

Perform the quality control and quality verification sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING) present at each grading site during all subgrade fill placement, compaction and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

If an Assistant Certified Technician (ACT) is performing sampling or testing, a certified technician must coordinate and take responsibility for the work an ACT performs. Have a certified technician ensure that

all sampling and testing is performed correctly, analyze test results, and post resulting data. No more than one ACT can work under a single certified technician.

B.3 Laboratory

- (1) Perform quality control testing in a department-qualified laboratory. Obtain information on the Wisconsin laboratory qualification program from:

Materials Management Section

3502 Kinsman Blvd.

Madison, Wisconsin 53704

Telephone: 608-246-5388

<https://wisconsin.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/qual-lab-req.aspx>

B.4 Equipment

- (1) Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM Chapter 8 and MOTP and maintain a calibration record at the laboratory.
- (2) Furnish nuclear gauges from the department's approved product list at <http://www.atwoodsystems.com/materials>. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge within 12 months before using it on the project. Retain a copy of the calibration certificate with the gauge.
- (3) Conform to CMM Chapter 8 for density testing and gauge monitoring methods. Perform nuclear gauge measurements according to Wisconsin Test Modified (WTM) T310.

B.5 Soil Source Study

- (1) Conduct and submit a soil source study before beginning of grading operations. Ensure that this study identifies each distinct soil type on the project within the top 15 feet of cut areas and all borrow material. Provide the in-bank natural moisture content for each soil. Develop moisture-density curves for each identified soil type by utilizing WTM T99 with a minimum of 5 individual points, and a zero air voids curve at a specific gravity of 2.65 (or as measured on sample material). Determine the maximum dry density and corresponding optimum moisture content for each soil type.
- (2) Perform characterization tests on each of the soil types selected for the soil source study. The tests include WTM T89, AASHTO T90, WTM T27, and WTM T11. Classify each soil type selected according to the AASHTO soil classification system (AASHTO M145) based on the characterization tests. Do not begin grading operations until the engineer accepts the soil source study.
- (3) Use the soil types identified in the soil source study with corresponding maximum dry densities and optimum moisture contents to determine the compaction compliance on the project. Continue the soil source study in those areas of cuts or borrow sites greater than 15 feet in depth that were not accessible during the initial study. Include data on additional soil types identified throughout the duration of subgrade fill placement. Ensure that tests of additional soil types are complete, and the engineer approves the results before incorporating the material into the roadway foundation.
- (4) Split each Proctor sample and identify to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department's split samples to the department at:

Southeast Region Materials Lab

935 South 60th Street

West Allis, WI 53214

Jeff Bruesewitz Jeffrey.Bruesewitz@dot.wi.gov

Cell Phone (414) 750-2324

- (5) Retain and identify two representative samples of each Proctor. Submit one sample to the engineer. Retain one sample on site for use when performing textural identification.

B.6 Quality Control Documentation

B.6.1 Control Charts

- (1) Maintain separate control charts for the field density and field moisture content of each grading category. Designate grading categories within the project as follows:
 1. Embankment portions of the project, except within 200 feet of bridge abutments.
 2. Embankment within 200 feet of bridge abutments.
 3. Subgrade cut portions of the project.
 4. Embankment (backfill) in utility and culvert pipe installations and removal trenches.
 5. Structure and granular backfill placed at bridge abutments and box culverts.
 6. Enhanced Compaction Areas: These areas include embankments taller than 20 ft and taller retaining walls supported on new embankment identified in the geotechnical report and require higher compaction levels than general QMP Subgrade categories due to unique requirements.
- (2) Ensure that all tests are recorded and become part of the project records. Enter QC data into the applicable materials reporting system (MRS) software within five business days after results are available. Plot required test results on the control charts. Include random QV and engineer-requested testing, but only include the contractor's randomly selected QC test results in the 4-point running average. The contractor may plot other contractor-performed process control or informational tests on the control charts, but do not include them in 4-point running averages.
- (3) Post control charts in an engineer-approved location and update daily. Ensure that the control charts include the project number, test number, each test element, applicable control limits, contractor's individual test results, running average of the last four (4) QC data points, and engineer's quality verification test data points. Use the control charts as part of a process control system for identifying potential problems and assignable causes. Format control charts according to CMM Chapter 8, Section 832.
- (4) Submit control charts to the engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

B.6.2 Records

- (1) Document all observations, inspection records, adjustments to fill placement procedures, soil changes, and test results daily. Provide load count records to the engineer for each borrow source and common source, including tracking of unsuitable material. Note the results of the observations and inspection records as they occur in a permanent field record.
- (2) Provide copies of the field density and field moisture running average calculation sheets, Proctor tests, records of procedure adjustments, and soil changes to the engineer daily.
- (3) Submit original testing records to the engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

B.7 Contractor Testing

B.7.1 General

- (1) Personnel completing contractor quality control testing must meet the certification level requirements specified in B.2.
- (2) During subgrade construction, use sampling and testing methods identified in the CMM Chapter 8 and MOTP to perform the required tests at randomly selected locations at the indicated minimum frequency in B.7.4 for each grading category.
- (3) Determine the cubic yards for testing based on a total load count system as agreed upon by the engineer and contractor.
- (4) For each test, provide the cubic yards represented and the test location to within 2 feet horizontally and 0.5 feet vertically.
- (5) Test areas of suspect compaction or which appear to be nonconforming as determined by engineer.

B.7.2 Field Density and Field Moisture

- (1) Perform the field density and field moisture tests using the nuclear density method according to WTM T310. Ensure that each field density test material is related to one of the specific soil types identified in

the soil source study in determining the percent compaction. Use textural identification as the primary method of establishing this relationship. Utilize the representative samples retained from the soil source study when performing the textural identification. Use a coarse particle correction according to WTM T99.

- (2) If field density and field moisture tests cannot be performed by the nuclear density method due to a high percentage of oversized particles as determined according to WTM T99, observe the placement of the embankment and document the basis of acceptance. Document daily quantities of untested embankment and locations where untested embankment is placed, and keep a cumulative quantity of untested embankment material for the duration of the project. Include the daily documentation and a summary of the cumulative quantity of untested embankment material with the project records.

B.7.3 Proctor Testing

- (1) When source material changes, obtain a representative sample of the fill material and test according to WTM T99 to determine the maximum dry density and optimum moisture content. Compare the sample results to the curves developed in the soils source study. Additional Proctor tests beyond the testing frequencies listed in B.7.4 may be required if source material changes between sampling intervals. Where apparent material changes occur at a field density/moisture test location, collect Proctor sample from below test location.
- (2) To satisfy minimum testing frequencies in B.7.4.1, obtain a representative sample of the fill material below field density/moisture test location and test according to AASHTO T272. Compare the sample to the curves developed in the soil source study to determine the maximum dry density and optimum moisture. Use the appendix in AASHTO T272 as a guide for this determination.

B.7.4 Testing Frequency

B.7.4.1 Subgrade Embankment:

Area 1: Subgrade Embankment – except within 200 feet of bridge abutments.

Area 2: Subgrade Embankment - within 200 Feet of bridge abutments.

- (1) Perform the required tests at the following frequencies:

Test		Minimum Frequency
Area 1	Field Density and Moisture (WTM T310)	One test per 2,000 cubic yards of fill, one test per 2 feet of vertical fill height, or one test per day, whichever yields the most tests.
Area 2	Field Density and Moisture (WTM T310)	One test per 1,000 cubic yards of fill, one test per 2 feet of vertical fill height, or one test per day, whichever yields the most tests.
Subgrade Embankment	Proctor (WTM T99) or One-Point Proctor (AASHTO T272)	One test per 20,000 cubic yards or portion thereof.

B.7.4.2 Subgrade Cut

- (1) Perform the required tests at the following frequencies:

Test	Minimum Frequency
Field Density and Moisture (WTM T310)	One test per 1,000 linear feet or one test per cut area, whichever yields the most tests.

B.7.4.3 Subgrade Embankment (Backfill) in Utility and Culvert Pipe Installations and Removal Trenches

- (1) Perform the required tests at the following minimum frequencies per trench run between structures. Test trenches individually at the frequency listed in this section, including utility removal trenches. For example, lateral lines and trunk lines are to be considered individual trenches:

Test	Minimum Frequency
Field Density and Moisture ^(a) (WTM T310)	One test per 100 cubic yards of backfill placed, one test per 2 feet of vertical fill height, or one test per day, whichever yields the most tests.
Proctor (WTM T99) or One-Point Proctor (AASHTO T272)	One test per 3,000 cubic yards cumulative or portion thereof.

- (a) Density tests will be conducted in trenches shallower than 5 ft and in trenches with sloped or benched protective systems in accordance with OSHA guidance (29 CFR 1926, OSHA subpart P).

B.7.4.4 Structure and Granular Backfill at Bridge Abutments and Box Culverts

- (1) Perform the required tests at the following minimum frequencies:

Test	Minimum Frequency
Field Density and Moisture (WTM T310)	One test per 2 feet of vertical backfill height per abutment.
Proctor (WTM T99) or One-Point Proctor (AASHTO T272)	One test per 3,000 cubic yards cumulative or portion thereof.

B.7.4.5 Embankment Enhanced Compaction Area:

- (1) Perform the required tests at the following minimum frequencies but exclude MSE wall backfill:

Test	Minimum Frequency
Field Density and Moisture (WTM T310)	One test per 2,000 cubic yards of fill, one test per 2 feet of vertical fill height, or one test per day, whichever yields the most tests.
Proctor (WTM T99) or One-Point Proctor (AASHTO T272)	One test per 20,000 cubic yards or portion thereof.

B.7.5 Control Limits

B.7.5.1 Field Density

B.7.5.1.1 General Conditions

- (1) The lower control limit for field density measurements is a minimum of 95% of the maximum dry density as determined by WTM T99 for the 4-point running average and a minimum of 92% of the maximum dry density for any individual test.

B.7.5.1.2 Embankment Enhanced Compaction Area

- (1) The lower control limit for field density measurements is a minimum of 98% of the maximum dry density as determined by WTM T99 for the 4-point running average and a minimum of 95% of the maximum dry density for any individual test.

B.7.5.2 Field Moisture Content

- (1) The upper control limit for the field moisture content is 110% of the optimum moisture as determined by WTM T99 for the 4-point running average and a maximum of 115% of the optimum moisture content for any individual test.
- (2) The lower control limit for the field moisture content is 65% of the determined optimum moisture for the 4-point running average. There is no lower control limit for the field moisture of material having less than 5% passing the No. 200 sieve.

B.7.6 Corrective Action

- (1) Notify the engineer if an individual field density test or moisture content test falls outside the individual test control limit. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to

the engineer, to improve the density of the subgrade material. After corrective action, perform a randomly located retest within the represented quantity to ensure that the material is acceptable.

- (2) Notify the engineer if the field density or field moisture running average point falls below the running average control limit for field density or outside the control limits for field moisture. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer, to improve the quality of the material represented by the running average point. Retest each corrected area at a new random location within its represented quantity and determine a new 4-point running average. If the new running average is not acceptable, perform further corrective actions and retest at new random locations.
- (2) If the contractor's control data is proven incorrect resulting in a field density or field moisture point falling below the control limit for field density or outside the control limits for field moisture, the subgrade is unacceptable. Employ the methods described above for unacceptable material.

B.8 Department Testing

B.8.1 General

- (1) The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all verification and independent assurance personnel for the project.
- (2) The department will provide field density and field moisture test results to the contractor on the day of testing. Test results from Proctor split samples will be provided to the contractor within seven business days after the sample has been received by the department.

B.8.2 Verification Testing

- (1) Department verification testing personnel must meet the certification level requirements specified in B.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.
- (2) The department will test field density and field moisture randomly at locations independent of the contractor's QC work. The department will use split samples for verification of Proctor testing. In all cases, the department will conduct the verification tests in a separate laboratory and with separate equipment from the contractor's QC tests.
- (3) The department will perform verification testing as follows:

1. The department will conduct verification tests on Proctor split samples taken by the contractor.

Soil Source Study

- One for each soil type identified in the Soil Source Study

Production/Construction Work

- One Proctor per 5 QC Proctor tests.
 - Other locations chosen by the engineer.
2. The department will conduct at least one verification test for field density and field moisture per 5 QC tests.
 3. The department will conduct at least one verification test for field density and field moisture in failing areas after corrective action is taken.
- (4) Plot verification tests on the contractor's quality control charts as specified in B.6.1. Do not include verification tests in the 4-point running average.
 - (5) Compare Proctor QC and QV results. If Proctor QC and QV values are within 4.5 pcf of the maximum dry density, and the optimum moisture content is within 85% to 115% of the mean optimum moisture content, the test results will be deemed satisfactory, and no further action is necessary. Proctor QC and QV values differing by more than 4.5 pcf of the maximum density or outside the range of 85% to 115% of the mean optimum moisture content will be investigated and resolved. Document the findings of the investigation and resolution.
 - (6) If verification tests are within specified control limits, no further action is required. If verification tests are not within specified control limits, the engineer and contractor will jointly investigate any testing

discrepancies. The investigation may include additional testing as well as review and observation of both the department's and contractor's sampling and testing procedures and equipment. Both parties will document all investigative work. If the investigation reveals that deficiencies exist, refer to (7).

- (7) Correct all deficiencies. If the contractor does not respond to an engineer request to correct a deficiency or resolve a testing discrepancy, the engineer may suspend grading work until action is taken. Resolve disputes as specified in B.9.

B.9 Dispute Resolution

- (1) Follow 106.3.4.3.5 of the standard specifications.

B.10 Acceptance

- (1) The department will accept the material tested under this provision based on the contractor QC tests unless it is shown through verification testing or the dispute resolution process that the contractor's test results are in error.

C (Vacant)

D (Vacant)

E Payment

- (1) Costs for all sampling, testing, and documentation required under this special provision are incidental to the work. If the contractor fails to perform the work required under this special provision, the department may reduce the contractor's pay. The department will administer pay reduction under the Non-performance of QMP administrative item.

51. Select Crushed Material.

Replace standard spec 312.2(6) with the following:

The department will assess Select Crushed Material acceptability based primarily on the engineer's visual inspection. The department may require the contractor to sample, test, and report gradation or the fracture results to show conformance of the material. One test per source, production process, or change of production process may be required.

Replace standard spec 312.5(2) with the following:

Payment for Select Crushed Material is full compensation for providing and compacting Select Crushed Material and all work necessary to provide gradation or fracture test results.

SER-321-001 (20160831)

52. Asphaltic Surface Temporary.

Replace standard spec 465.2 (1) with the following:

Under the Asphaltic Surface Temporary bid item; submit a mix design. Furnish asphaltic mixture meeting the requirements specified for HT under standard spec 460.2; except the engineer will not require the contractor to conform to the quality management program (QMP) specified under standard spec 460.2.8.

sef-465-005 (20170310)

53. Concrete Curing Materials.

Supplement standard spec 501.2.9 with the following:

The liquid curing compound shall have a color equal to or lighter than Gardner Color Standard No. 2 when tested according to ASTM C 1315 8.7.6 Yellowing Resistance.

54. Concrete Masonry Structures.

A Description

A.1 General

Work under this item applies to cast in place concrete for structures. Conform to standard spec 501, 502, 504, 701, 710 and 715 and as modified in this special provision. Apply this special provision to all cast in place concrete placed under the following bid items:

- 502.0100 Concrete Masonry Bridges
- 504.0500 Concrete Masonry Retaining Walls
- 502.0110.S Concrete Masonry Soldier Pile Footings

A.2 Concrete Masonry Bridges

Work under the item Concrete Masonry Bridges applies to cast in place concrete for bridge substructures, which includes abutments and piers. Cast in place concrete for bridge superstructures, which includes bridge decks, raised medians, sidewalks, and parapets, is covered under the special provision item HPC Masonry Structures.

B (Vacant)

C Construction

Replace standard spec 501.3.8.2 with the following:

The contractor is responsible for the quality of the concrete placed in hot weather. Submit a written temperature control plan at or before the pre-pour meeting. In that plan, outline the actions taken to control concrete temperature if the concrete temperature at the point of placement exceeds 80 F. Do not place concrete without the engineer's written acceptance of that temperature control plan. Perform the work as outlined in the temperature control plan.

If the concrete temperature at the point of placement exceeds 90 F, do not place concrete under the following bid items:

- Concrete Masonry Bridges
- Concrete Masonry Retaining Walls
- Concrete Masonry Soldier Pile Footings

Notify the engineer whenever conditions exist that might cause the temperature at the point of placement to exceed 80 F. If project information is not available, obtain information from similar mixes placed for other nearby work.

Any additive or action taken to control the temperature of the Concrete Masonry to within the limits of this special provision, excluding the addition of ice to the concrete mix, is considered incidental to the work and will not be measured or paid for separately.

Add the following to standard spec 501.3 as subsection eleven:

55. QMP Drilled Shafts.

A General

Perform this work according to the requirements of standard specs 501, 502, 701, 710 and 715 (conform to QMP Concrete Structures) except as deleted or additionally stipulated herein. This specification applies to all drilled shaft concrete placed under the following bid items:

- SPV.0090.4100 Drilled Foundation Shaft 34.65-Inch
- SPV.0090.4110 Drilled Foundation Shaft 59.06-Inch

B Materials

B.1 Concrete Mix Physical Requirements

For drilled shaft construction, use high compressive strength concrete, and relatively high cement content in the concrete mix with 590 to 675 pounds of cement per cubic yard. Limit fly ash to 15% of cementitious material. Additives or admixtures, when they are used, shall be clearly indicated. The concrete shall be a flowable, non-segregating concrete mix that does not exhibit rapid slump loss.

Unit Weight of Concrete, AASHTO T 121: Weight must be between 140 to 160 lb/ft³.

Fine and coarse aggregate shall conform to the requirements of standard spec 501.2.5 except as modified herein.

Fine aggregate shall conform to the following gradation requirements:

Sieve Size	Percent Passing (by weight)
3/8"	100
No. 4	90 – 100
No. 16	45 – 85
No. 50	5 – 30
No. 100	0 – 10
No. 200	0 – 3.5

Coarse aggregates shall conform to the following gradation requirements:

Sieve Size	Percent Passing (by weight)
1/2"	100
3/8"	85 – 100
No. 4	10 – 30
No. 8	0 – 10
No. 16	0 – 5
No. 200	0 – 1.5

Any chemical admixture(s) to be used, other than air-entraining agents or water reducers from the department approved list, must be approved in advance by the engineer and the UPRR engineer and meet the requirements of AASHTO M 194, as documented by independent laboratory test reports.

The adjustment of dosage rates of concrete admixtures will be permitted without requiring a new mix design.

B.2 Slump

The trial mix design for drilled shaft concrete shall include a Slump Loss Graph, or Slump versus Time after Batching. The Slump Loss Graph of a proposed drilled shaft mix design shall illustrate the slump reducing slowly and still exceeding a 5-inch slump two hours after batching. Careful attention to concrete mix designs made with retarders must be exercised. Monitor slump to assure that all concrete placement is completed before any mix begins setting. Operations may need to be adjusted to reduce the number of shafts that are completed during a single pour event.

Adding water to a ready-mix truck is prohibited. In cases in which part of the water of the concrete mix is added at the batch plant and the remaining water is added at the job site, the amount of water to be added at the job site shall be stated on the mix design sheet carried by the ready-mix truck driver. Testing of concrete will then be conducted on the resulting mix, and further water cannot be added at any time to increase the mix slump or to bring the mix to a specific slump. If after all the water permitted in the mix design has been added and the slump is still out of these specifications, the contractor must reject the mix. Repair or replace drilled shafts of questionable concrete design mixes at no additional cost to the department.

The following table presents the ranges for the slump.

	Slump Range in Inches		
	Concrete Placed by Free Falling	Concrete Placed by Tremie	Concrete Placed by Pump
Dry Installation Method			
Uncased or Cased Excavations	7 to 9	8 to 9½	7 to 9½
Wet Installation Method			
Uncased or Cased Excavations	N/A	8 to 9½	7 to 9½

B.3 Slurry

B.3.1 General

Slurry shall be a stable suspension of mineral in potable water or polymer slurry. Maintain a stable suspension at all times. Bentonite slurry shall be mineral slurry of powdered Wyoming or Dakota bentonite, with density, viscosity, and pH as specified in the table below. Polymer slurry shall be a suspension of powdered polyacrylamide or vinyl polymer with the following characteristics:

Property at 60°F Units	Mineral Slurry	Polymer Slurry	Test Method
Density in Fresh Water (lb/ft ³) (a)	85 max (no end bearing) 70 max (w/end bearing)	64 max	ASTM D4380
Viscosity (sec/quart)	26 to 50	40 to 90 (c)	Marsh Funnel API-RPI3B-1, Sect. 2
pH	7 to 12	7 to 12	ASTM D4972
Sand Content (%) (b)	20 max (no end bearing) 4 max (w/end bearing)	1 max	200 Sieve Retain

- (a) Test for sand content as determined by the American Petroleum Institute.
- (b) Bentonite slurry shall be disposed of offsite in an approved manner as accepted by the WDNR.
- (c) Or per manufacturers recommendations and approved by the engineer and the UPRR engineer.

The contractor may adjust the range of slurry properties when field trials and field tests show that modifications are necessary to bring the slurry to specifications.

Obtain slurry samples from the midpoint and bottom of each drilled shaft prior to the placement of the reinforcing steel. Correct the slurry as necessary to meet the specification requirements.

B.3.2 Tests

To ensure that the results are within the ranges stated in the table above, perform the following tests on the mineral slurry supplied to the drilled shaft excavation at different depths within the drilled shaft using a slurry sampler.

B.3.2.1 Wisconsin Method of Test for Density of Slurry (Mud Weight)

Density shall be measured at 68°F. This test is identical to ASTM D 4380 except that the mineral slurry to be tested shall consist of processed attapulgite or bentonite clays, and the temperature of the slurry (using a 0-105°C thermometer) shall be measured and recorded on the drilling Mud Report form.

B.3.2.2 Wisconsin Method of Test for Viscosity of Slurry

The viscosity shall be measured at 68°F or a constant temperature with the Marsh Cone Method.

B.3.2.2.1 Scope

The Marsh Funnel or Marsh Cone is used to measure viscosity of drilling fluids. This test method has been adapted from Section 2 of the American Petroleum Institute (API) Recommended Practice FM8-RP13B-1: Standard Procedure for Field Testing Water-Based Drilling Fluids (FM 8-RP13B-1). Use of a direct-reading viscometer has been eliminated.

B.3.2.2.2 Equipment

Marsh Funnel: A Marsh Funnel is calibrated to out-flow 946 mL (one quart) of fresh water at a temperature of 21 ±3°C (70 ±5°F) in 26 ±0.5 seconds. A graduated cup is used as a receiver.

Specifications:

Funnel Cone Length	305 mm (12.0 in.)
Diameter	152 mm (6.0 in.)
Capacity to bottom of screen	1500 mL
Orifice Length	50.8 mm (2.0 in.)
Inside Diameter	4.7mm (3/16 in.)
Screen	12 mesh
Has 1.6 mm (1/16 in.) openings and is fixed at a level 19.0 mm (3/4 in.)	

B.3.2.3 Wisconsin Method of Test for Sand Content of Slurry

B.3.2.3.1 Scope

The sand content of mud is the volume percent of particles larger than 74 microns. It is measured by a sand-screen set. This test method has been adapted from Section 5 of the American Petroleum Institute (API) Recommended Practice 13B-1: standard Procedure for Field Testing Water-Based Drilling Fluids (RP13B-1).

B.3.2.3.2 Equipment

200-mesh sieve, 63.5 mm (2.5 in.) in diameter.

Funnel to fit sieve.

Glass measuring tube marked for the volume of mud to be added. The tube is graduated from 0 to 20 percent in order to read directly the percentage of sand.

B.3.2.3.3 Procedure

Fill the glass measuring tube with mud to the "mud" mark. Add water to the next mark. Close the mouth of the tube and shake vigorously. Pour the mixture onto the clean, wet screen. Discard the liquid passing through the screen. Add more water to the tube, shake, and again pour onto the screen. Repeat until the tube is clean. Wash the sand retained on the screen to free it of any remaining mud.

Put the funnel upside down over the top of the sieve invert. Slowly tip the assembly and insert the tip of the funnel into the mouth of the glass tube. Wash the sand into the tube by playing a fine spray of water through the screen. Allow the sand to settle. From the graduations on the tube, read the volume percent of the sand.

Report the sand content of the mud by percent volume. Report the source of the mud sample, i.e. above shaker, suction pit, etc. Coarse solids other than sand will be retained on the screen (e.g., lost circulation material) and the presence of such solids should be noted.

B.3.2.4 Wisconsin Method of Test for pH of Slurry

pH shall be measured by the Electric pH meter or pH indicator paper strips.

B.3.2.4.1 Scope

Field measurement of drilling fluid (or filtrate) pH and adjustments to the pH are fundamental to drilling fluid control. This test method has been adapted from Section 7 of the American Petroleum Institute (API) Recommended Practice 13B-1: Standard Procedure for Field Testing Water-Based Drilling Fluids (RP 13B-1).

The recommended method for pH measurement of drilling fluid is with a glass electrode pH meter. This method is accurate and gives reliable pH values, being free of interference if a high-quality electrode system is used with a properly designed instrument. Rugged pH instruments are available that automatically temperature compensate the slope and are preferred over the manually adjusted instruments.

NOTE: Color matching pH paper and sticks are used for field pH measurements but are not the methods recommended. These methods are reliable only in very simple water muds. Mud solids, dissolved salts and chemicals, and dark-colored liquids cause serious errors in pH paper values. Readability is normally about 0.5 pH unit.

B.3.2.4.2 Equipment

pH meter: millivolt range potentiometer calibrated to show pH units for measuring the potential between a glass-membrane electrode and a standard "reference" electrode. The instrument is (preferred) to be water, shock, and corrosion-resistant and portable. Specifications are:

- pH range: 0 to 14.
- Electronics type: solid state (preferred).
- Power source: batteries (preferred).
- Operating temperature range: 0-66°C (32-150°F).
- Readout: digital (preferred).
- Resolution: 0.1 pH unit.

- Accuracy: ± 0.1 pH unit.
- Repeatability: 0.1 pH unit.
- Adjustments.
- "Temperature" compensation of electrode system.
- "Slope" of electrode system (preferred).
- "Calibration" setting of readout. (Instrument with the above internal temperature compensation is preferred.)

Electrode system: A combination system of a glass electrode for sensing H^+ ions and a standard voltage reference electrode, constructed as a single electrode (preferred). Body of this probe should be constructed of durable material. A flat-end probe is preferred for better protection and easier cleaning of the electrode. Waterproof connection to the meter is recommended. Specifications are:

- Glass pH electrode response range: 0 to 14 pH unit.
- Electrodes: a glass electrode and a silver/silver chloride electrode in combination, having a ceramic or a plastic single or double junction.
- Electrolyte in reference electrode: KCl gel.
- Glass composition: suitable for low sodium ion error.
- Sodium ion error: at pH = 13 or at 0.1 mole Na^+ ion, an error less than 0.1 pH unit.
- Buffer solutions: three solutions to calibrate and set slope of pH meter prior to sample measurement.
- pH = 4.0: potassium hydrogen phthalate at 0.05 molar in water. Gives 4.01 pH at 24°C (75°F).
- pH = 7.0: potassium dihydrogen phosphate at 0.02066 molar and disodium hydrogen phosphate at 0.02934 molar in water. Gives 7.00 pH at 24°C (75°F).
- pH = 10.0: sodium carbonate at 0.025 molar and sodium bicarbonate at 0.025 molar in water. Gives 10.01 pH at 24°C (75°F).

NOTE: Buffers may be obtained from supply houses as pre-made solution, dry-powder packages, or a given formula, but must duplicate National Bureau of Standards primary or secondary buffers. Shelf life of all buffers not to exceed six months. Date of preparation of buffer should be shown on bottles used in the field. Bottles should be kept tightly stoppered.

Distilled or deionized water: in spray bottle.

Soft tissues: to blot electrodes.

Thermometer: glass, 0-150°C (32-220°F).

Accessory equipment: Soft-bristle test tube brush: to clean electrode.

Mild liquid detergent: Ivory, or equivalent.

Electrode storage vial: to keep electrode moist.

Sodium hydroxide: 0.1 molar (approximately); to recondition electrode.

Hydrochloric acid: 0.1 molar (approximately); to recondition electrode.

Ammonium bifluoride: 10% solution (approximately); to recondition electrode.

CAUTION: This is a strong and toxic acid.

Hydrofluoric acid: ACS reagent grade.

CAUTION: This is a strong acid.

B.3.2.4.3 Procedure – pH Measurement

Obtain sample of fluid to be tested. Allow it to reach $24 \pm 3^\circ C$ ($75 \pm 5^\circ F$). Allow buffer solution to also reach the same temperature as the fluid to be tested.

NOTE: For accurate pH measurement; the test fluid, buffer solution, and reference electrode must all be at the sample temperature. The pH of the buffer solution indicated on the container label is the correct pH only at 24°C (75°F). If attempting to calibrate at another temperature, the actual pH of the buffer at this

temperature must be used. Tables of buffer pH values at various temperatures are available from the suppliers and should be used in the calibration procedure.

Clean electrodes by washing with distilled water and blot dry. Place probe into pH 7.0 buffer.

Turn on meter; wait 60 seconds for reading to stabilize. Measure temperature of pH 7 buffer solution. Set this temperature on "temperature" knob. Set meter reading to "7.0" using "calibration" knob. Rinse probe with distilled water and blot dry.

Repeat operations using either pH 4.0 or pH 10.0 buffer. Use pH 4.0 if "acidic" sample, or pH 10.0 if "alkaline" sample is to be tested. Set meter to number "4.0" or "10.0" respectively, using "slope" adjustment knob. (If no "slope" knob exists, use the "temperature" knob to set "4.0" or "10.0" on meter). Check the meter with pH 7 buffer again. If it has changed, reset to "7.0" with "calibration" knob. Repeat procedures to ensure equipment is properly calibrated.

NOTE: Discard and do not reuse the sample of buffer solutions used in calibration. Meter should be fully calibrated every day using two buffers. Check with pH 7 buffer every three hours. If meter calibrates properly, rinse electrode with distilled water and blot dry. Place electrode in sample to be tested and stir gently. Allow 60 to 90 seconds for reading to stabilize.

Record sample pH to nearest 0.1 pH unit and the temperature of sample tested. Carefully clean the electrode in preparation for next usage. Store in vial of pH 4 buffer. NEVER let the probe tip become dry. Turn meter off and close cover to protect instrument. Avoid storing instrument at extreme temperatures (below 0°C (32°F) or above 49°C (120°F)).

Care of Electrode: Cleaning the electrode will be necessary periodically, especially if oil or clay particles coat the face of the glass electrode or the porous frit of the reference electrode. Clean electrode with a soft-bristle brush and a mild detergent. Reconditioning the electrode may be necessary if plugging becomes severe, as indicated by slow response, drifting of readings, or if "slope" and "calibration" cannot be mutually set. Recondition by soaking electrode for 10 minutes in 0.1 M HCl followed by rinsing in water and soaking for 10 minutes in 0.1 M NaOH and rinsing again. Check electrode for response by performing calibration. If electrode continues to perform poorly, soak electrode for two minutes only in 10% NH₄F · HF solution. (CAUTION: This is strong and toxic acid). Replace electrode system if above steps fail to recondition it.

C (Vacant)

D (Vacant)

E Payment

E.1 QMP Drilled Shafts

Costs for all sampling, testing, and documentation required under this special provision and all other associated work are incidental to the work. If the contractor fails to perform the work required under this special provision, the department may reduce the contractor's pay.

56. Structure Repainting General.

A General

A.1 Inspection

On all structures in this contract, notify the engineer of any missing or broken bolts or nuts, any missing or broken rivets, or of any cracks or flaws in the steel members while cleaning or painting.

A.2 Date Painted

At the completion of all painting work, stencil in black paint or contrasting color paint the date of painting the bridge. The numbers shall be 3 inches (75 mm) in height and shall show the month and year in which the painting was completed: e.g., 11-95 (November 1995). On each bridge painted, stencil the date at two locations. On truss bridges, stencil the date on the cover plates of end posts near and above the top of the railings at the oncoming traffic end. On steel girder bridges, stencil the date on the inside of the outside stringers at the abutments. The date on grade separation bridges shall be readable when going under the structure or at some equally visible surface near the ends of the bridge, as designated by the engineer.

A.3 Graffiti Removal

Remove any graffiti on concrete abutments, piers, pier caps, parapet railings, slope paving or any other location at the direction of the engineer. Use a brush sandblast to remove graffiti.

The above work will not be measured and paid for separately but will be considered incidental to other items in the contract.

B (Vacant)

C Construction

C.1 Repainting Methods

Do not perform blasting, cleaning and painting on days of high winds. Prevailing winds in excess of 15 mph (25 km/hr) shall be considered high winds.

Place the final field coat of paint on the exterior of the exterior beams as a continuous painting operation. Stop at splices, vertical stiffeners or other appropriate locations so that lap marks are not evident or noticeable.

Completely clean and remove spent abrasive and other waste materials resulting from the contractor's operation from bridge deck surfaces, gutter lines, drains, curbs, bridge seats, pier caps, slope paving, roadway below, and all structural members and assemblies.

C.2 Inspection

Add the following to standard spec 105.9:

Furnish, erect and move scaffolding and other equipment to allow the inspector to closely observe all affected surfaces. The scaffolding, with appropriate safety devices, shall meet the approval of the engineer.

stp-517-005 (20150630)

57. Labeling and Disposal of Waste Material.

The EPA ID number for Structure B-40-513_5 is WIR000187849.

The state has an exclusive mandatory use contract with a private waste management contractor to transport and dispose of hazardous waste.

The state's waste management contractor shall furnish and deliver appropriate hazardous waste containers and site-specific labels to each bridge site. The provided containers shall be placed at pre-selected drop-off and pick-up points at each bridge site, and these locations shall be determined at the preconstruction conference. The custody of the containers and labels shall be the responsibility of the painting contractor while they are at the job site.

Fill out form DT 1231, <https://wisconsindot.gov/Documents/formdocs/dt1231.docx> and email it to the waste management contractor, the region environmental coordinator, and the DOT Hazmat unit mailbox (dothazmatunit@dot.wi.gov) a minimum of 10 working days in advance to request container drop-off or pickup. Using the form, provide the waste management contractor with the project ID, structure number, EPA ID, and the agreed-upon location for container staging. Contact information for the waste management contractor is located on the WisDOT Internet site at:

<https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrcs/environment/hazwaste-contacts.pdf>

Report all reportable spills and discharges according to the contingency plan.

Labels are site-specific. Check the labels to ensure that the project ID, structure number, and EPA ID match the structure generating the waste. Apply a label to each drum when it is opened for the first time. Fill in the date on the label the first day material is accumulated in the drum. The following page is an example of a properly filled-in label.

During paint removal operations, continuously monitor and notify the project inspector of the status of waste generation and quantity stored so that timely disposal can be arranged.

stp-517-055 (20230113)

HAZARDOUS WASTE

WW-5257580999-001-01-0

STORAGE LABEL

RQ, HAZARDOUS WASTE, SOLID, n.o.s.,
(LEAD), 9, NA3077, III, (D008)

Enter the date that waste
materials were first placed into
the container

EPA CODE: E/D008 STATE: S

WIP#: 391498

WIP DESC: BRIDGE SAND WITH LEAD

DATE ACCUMULATED: 07/01/2005

HAZARDOUS WASTE – FEDERAL LAW PROHIBITS IMPROPER DISPOSAL IF FOUND,
CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY OR THE U.S.
ENVIRONMENTAL PROTECTION AGENCY.

WISC DOT BRIDGE # B-29-53/54

I-94 OVER CTH H

PROJECT ID # 5882-03-70

CAMP DOUGLAS, WI 54618

(608) 963-0871

GENERATOR EPA ID

WIR000121103

Project ID Number on
label must match the
Project Number
assigned by the
WIDOT

Bridge Number and
Address on label must
match specific bridge
from which waste was
generated.

EPA ID Number on
label is specific to the
bridge from which the
waste is generated.

58. Steel Bridge Construction Plan.

A Description

A.1. General

This special provision describes the requirements for a Steel Bridge Construction Plan that is required to be prepared and submitted for each steel bridge structure on the project.

A.2 Structures

Submit a Steel Bridge Construction plan conforming to the requirements of this special provision for the following structures:

B-40-1083

Submit the Steel Bridge Construction Plan, signed and sealed by a professional engineer registered in the State of Wisconsin, at least 14 days before structural steel transport, delivery and erection or as otherwise agreed to by the engineer.

A.3 Standard Specifications

The requirements herein supplement and are in addition to, all applicable requirements in the standard specifications.

A.4 Fabrication Shop Drawings

The contractor's steel bridge construction plan is in addition to, and not in lieu of, fabrication shop drawings. Submit fabrication shop drawings per section 506 of the standard specifications. Provide additional information on fabrication shop drawings, if required, as hereinafter specified.

B (Vacant)

C Steel Bridge Construction Plan

C.1 General

The contractor's submitted steel bridge construction plan which provides details of fabrication, details of transportation and shipment, details of steel bridge erection, and details of concrete deck placement on steel bridge girders, shall be referred to hereinafter as the contractor's construction plan. This plan may be based on, in whole or in part, on any construction plan details shown in the contract documents or may be developed entirely by the contractor. In either event, it shall demonstrate the stability of the structure and individual components during each stage of construction, including while supported on temporary supports or jacks. Construction plan details shown in the contract documents shall not be taken as supplanting or implying any supplantation of the Contractor's responsibility for the fabrication, transportation, erection, or construction of any part of the bridge.

The contractor's construction plan shall include:

- Fabrication procedures, including camber values and method of cambering and curving horizontally curved girders. Fabrication procedures may be included and shown on the submitted fabrication shop drawings. If included in the submitted fabrication shop drawings, this should be noted in the submitted construction plan.
- A transportation plan including shipping weights, lengths, widths and heights of fabricated components and subassemblies and means of shipping.
- An erection plan, including details of storage and handling at the site; sequence of erection; crane placement and capacities; and the location, capacity, elevation, design and construction details of any temporary falsework supports.
- Deck placement details including design and construction details of deck formwork and cantilever brackets; concrete placement sequence, including the time between placements; and the magnitude and position of any temporary load required to prevent girder lift-off at bearings.

C.2 Transportation Plan

Provide a transportation plan as part of the submitted construction plan. The transportation plan shall show the type of girder supports required and their locations identified. The types, size, and locations of tie-downs shall be shown. A sufficient number of tie-downs shall be specified to provide adequate redundancy.

Girder stresses due to self-weight while being shipped shall be computed with a dynamic load allowance of 100 percent. The computed girder stresses shall satisfy the provision of Article 6.10.3.2 or 6.11.3.2 of the *AASHTO LRFD Bridge Design Specifications*, as applicable. Include these computations in the transportation plan.

Fatigue stresses shall not exceed the constant-amplitude fatigue threshold for the appropriate categories in table 6.6.1.2.5-3 of the *AASHTO LRFD Bridge Design Specifications*.

Wherever practical, submit design computations detailing the determination of the required vertical and lateral support loads during steel girder erection. Support girders in the same orientation as in the completed structure. Support girders in such a manner that their cross-section shape is maintained and through-thickness stresses are minimized.

Provide supports as required during transportation to ensure that dynamic lateral bending stresses are minimized.

Temporary stiffening trusses or beams, if required to meet the requirements of this section shall be specified and detailed in the transportation plan.

C.3 Erection Plan

C.3.1. General

An erection plan shall be included as part of the submitted construction plan. Submit drawings illustrating fully the proposed method of erection. The drawings shall show details of all falsework bents, bracing, guys, dead-men, lifting devices, and attachments to the bridge members, sequence of erection, location of cranes, crane capacities, location of lifting points on the bridge members, and weights of the members. The drawings shall be complete in detail for all anticipated phases and conditions during erection. Calculations are required to demonstrate that factored resistances are not exceeded, and that member capacities and final geometry will be correct.

The submitted erection plan shall consider and ensure the stability of girders and the cross-section shape of box girders are maintained throughout the erection process. The stage of completeness of bolted connections shall be considered when evaluating the strength and stability of the steel during erection.

The erection procedure shall conform to the submitted erection plan. Any modifications to or deviation from the submitted erection plan, shall require revised drawings and verification of stresses and geometry.

C.3.2 Camber Diagram

Include camber diagrams in the erection plan or submitted fabrication shop drawings showing the camber at location of field splices and fractions of span length (quarter points minimum).

Cambers shown in the contract drawings are based on the assumption that the deck concrete is placed uniformly and simultaneously on the whole bridge or unit. The contractor is required to investigate the geometric response of the bridge based on the proposed deck placement sequence. In calculating and evaluating cambers consider vertical, lateral, and twist deflections due to dead load. Carefully consider the sequence of load application and incremental curing of the deck concrete during staged placement of the deck on continuous span bridges. Address time dependent effects, including creep, shrinkage and load shedding effects where appropriate. If the contractor's engineer deems these effects to be insignificant, include a statement to this effect in the contractor's submitted Steel Bridge Construction Plan.

Adhere to cambers provided on the contract documents unless the steel erection or deck placement is to be performed in such a manner that will lead to deflections different from those used to determine the camber specified. If the contractor or the contractor's fabricator / detailer or erector intends other procedures or outcomes, the approach shall be confirmed with the engineer, prior to beginning fabrication. Provide any additional documentation or submissions required by the engineer at no additional cost to the Department.

C.3.3 Erection Falsework

Design falsework in accordance with Section 3, "Temporary Works," of the *AASHTO LRFD Bridge Construction Specifications* to carry the vertical and lateral loads specified in the submitted erection plan. Set the elevation of falsework as necessary to support the girders at the cambered no-load elevation. If used in conjunction with the falsework, use jacks that have a stroke adequate to permit full unloading. Provide means of unloading of temporary supports in a manner that all temporary supports at each cross-section are unloaded uniformly.

Submit design computations detailing the determination of the required vertical and lateral support loads during steel girder erection. Submit structural design computations for all falsework to the required capacity and construction details of all required falsework including falsework foundation support. The falsework calculations and construction detail drawings shall be signed and sealed by a professional engineer registered in the State of Wisconsin.

C.3.4 Handling and Storing Materials

Indicate means and methods of structural steel material handling and storage on site in the submitted erection plan. Materials to be stored at the job site shall be placed on skids above the ground. The storage area shall be kept clean and properly drained. Place girders and beams in upright positions held in place with adequate shoring and bracing. Long members shall be supported on skids placed near enough together to prevent injury and deformation from deflection.

C.3.5 Erection Stresses

Factored stresses due to self-weight of the steel and wind at each stage of erection shall not exceed those computed according to the provisions of the *AASHTO LRFD Bridge Design Specifications* and as hereinafter specified. Provide computations which show that the factored construction stresses satisfy the requirements of the Articles 6.10.3 and 6.11.3 "Constructability," of the *AASHTO LRFD Bridge Design Specifications*, as applicable.

Any erection stresses induced in the structure as a result of using a method of erection which differs from the assumptions given in the contract documents shall be accounted for by the contractor. Erection design calculations for such changed methods shall be prepared at the contractor's expense and submitted to the engineer as part of the submitted erection plan. The calculations shall indicate any change in stresses or change in behavior for the temporary and final structures. Additional material required to keep both the temporary and final stresses within the allowable limits used in design shall be provided at the contractor's expense.

The contractor is responsible for providing temporary bracing or stiffening devices to accommodate handling stresses in individual members or segments of the structure during erection.

C.3.6 Maintaining Alignment and Camber

During erection, the contractor is responsible for supporting segments of the structure in a manner that will produce the proper alignment and camber in the completed structure. Install cross frames and diagonal bracing as necessary during the erection process to provide stability and assure correct geometry. Temporary bracing if necessary, at any stage of erection, shall be provided by the contractor.

C.4 Concrete Deck Placement Plan

C.4.1 General

Submit a Concrete Deck Placement Plan indicating the sequence and methods of deck placement on the erected structural steel. Concrete placements shall be made in the sequence specified in the submitted steel bridge construction plan. The time between placements shall be such that the concrete in prior placement has reached an age or strength specified in the submitted concrete deck placement plan. Identify any admixture agents to be used in the deck concrete mix in the concrete deck placement plan. If used, admixtures must be permitted by and conform to the requirements of the standard specifications. The planned duration of each placement shall be specified in the construction plan.

C.4.2 Concrete Deck Formwork

Include details of cast-in-place deck formwork including overhang brackets and forms in the submitted concrete deck placement plan. Deck formwork shall conform to the requirements of the plans and standard specifications.

Attach overhang brackets to the top flange. If noted on the plans, overhang brackets must bear near the bottom flange within the limits noted on the plans. If the overhang brackets bear against the web, the contractor's engineer must ensure that precautions have been taken to prevent the permanent deformation of the web and excessive deflection of the wet slab and forms. Investigate the lateral force on the top flange due to overhang brackets to ensure that the flange is adequate as specified in Article 6.10.3.4 "Deck Placement" of the *AASHTO LRFD Bridge Design Specifications*.

Loads applied on the overhang brackets shall be considered in determining lateral flange bending stresses cross-frame forces, and associated web and top flange deformations. If the loads or their application are to be different than those provided in the contract documents, an additional analysis shall be made and supporting calculations submitted as part of the erection plan.

C.5 Plan Conformance

Perform all steel bridge fabrication, transportation, erection and concrete deck placement according to the submitted steel bridge construction plan. Submit a revised construction plan including revised drawings and re-verification of stresses and geometry prior to implementing any modifications to or deviations from the submitted steel erection plan.

D Measurement

The department will not measure Steel Bridge Construction Plan separately for payment.

E Payment

The department will not pay for Steel Bridge Construction Plan under a separate bid item. Include the cost of preparing and submitting the Steel Bridge Construction Plan which includes additional

requirements for steel fabrication shop drawings, a steel bridge transportation plan, a steel bridge erection plan, and a cast-in-place deck placement plan, all supporting drawings, design calculations and other specified documentation and conformance with the submitted plans in the bid item Structural Steel HS.

59. Concrete Sidewalk and Tactile Directional Indicators.

Where Tactile Directional Indicators will be placed in the concrete sidewalk, review the tactile directional indicator layout with the planned joint spacing and locations with the engineer prior to constructing the sidewalk and placing the tiles.

Locate the transverse concrete sidewalk joints so they are at the edge of the tactile directional indicators. Locate expansion joints a minimum of 3 inches from the edge of the detectable edge tiles. Do not cut joints through the tactile directional indicators.

Supplement standard spec 602.3.2.5.2 with the following:

For all sidewalk with Tactile Directional Indicators; plan and locate all points necessary to establish the horizontal position of the transverse and longitudinal joint in the sidewalk to prevent uncontrolled cracking. Submit a joint layout design plan to the engineer at least 7 calendar days before paving. Do not layout joints until the engineer has reviewed the joint layout design. Mark the location of the concrete joints in the field prior to or after paving. Follow the plan details for joints in the concrete, making adjustments as required to fit field conditions.

60. Concrete Sidewalk for Bike Lanes.

For concrete sidewalk constructed for bike lanes, construct the work in accordance to standard spec 602, except saw the contraction joints in accordance to standard spec 602.3.2.5.1(3)3. Confirm the sawcut depth and spacing with the engineer prior to placing the concrete sidewalk. Hand tooled contraction joints are not allowed.

61. Storm Sewer.

Supplement standard spec 204.5.2 with the following:

QMP sampling, testing and documentation if applicable is incidental to removing storm sewer bid item and no separate payment will be made.

Supplement standard spec 608.2 with the following:

Two weeks prior to start of storm sewer construction, provide a shoring design and installation sequence for each location where shoring is to be used. Have a professional engineer, currently registered in the State of Wisconsin and knowledgeable of the specific site conditions and requirements, verify the adequacy of the design. Submit one electronic copy in portable document format of each shoring design, signed and sealed by the same professional engineer verifying the design, to the engineer for incorporation into the permanent project record.

Supplement standard spec 608.3.1.1 with the following:

Incorporate excavated material in the work to the extent practicable. Use materials with suitable engineering properties for embankment.

Dispose of surplus or unsuitable material as specified in standard spec 205.3.12.

Supplement standard spec 608.3.3 with the following:

Place rubber gasket joints over the spigot end or tongue of the entering pipe for all round storm sewer pipes horizontal and elliptical pipes with a rise less than or equal to 40-inches. Clean the gasket and the ends of the pipe from sand and gravel. If the gasket provided is neither factory lubricated nor self-lubricating, lubricate the outside of the gasket and the inside of the bell or groove of the last pipe with an engineer - approved vegetable lubricant immediately before making the joint. Place the spigot or tongue of the pipe being laid with the gasket in place into the bell or groove end of the previously laid pipe. Set

pipe carefully to line and grade and push or jack home. The engineer may order the use of a jack or "come-along" if deemed necessary to ensure that the joints are completely tight.

For horizontal elliptical pipe rise greater than 40-inches use mastic joint compound. Where factory lubricated rubber gasket joints are not available, clean the ends of the pipe from sand and gravel. Place engineer-approved mastic joint sealer on both the spigot and bell ends of the pipe being laid. Apply additional mastic around each joint exterior and wrap each joint with Geotextile Fabric Type DF laid flat meeting requirements of standard spec 645. Wrap each joint so that the Geotextile Fabric overlaps each joint a distance of approximately $\frac{1}{2}$ of the pipe diameter.

Replace standard spec 608.5(2) with the following:

Payment for the Storm Sewer Pipe bid items is full compensation for providing all materials, including all special Y's, mitered sections, elbows and connections required; for all submittals; for excavating and wasting excess material, except rock excavation; for providing rubber gaskets; Lubrication of rubber gaskets; mastic joint sealer; for supporting utilities in storm sewer trench; for shoring design, providing a signed and sealed copy of the design; for installation, monitoring, and removal of shoring; for forming foundation; for laying pipe; for sealing joints and making connections to new or existing features, bedding material; for backfilling and granular backfill material; for QMP sampling, testing and documentation; for cleaning out; and absent the pertinent contract bid items, for restoring the work site.

62. Catch Basins, Manholes, and Inlets.

A Description

Provide Ductile Iron covers (lids) for Inlet Covers Type V and VV-B conforming to ASTM A536 Grade 80-55-06. If ductile iron frames are not available, provide cast iron frames conforming to AASHTO M105 Class 30.

Supplement standard spec 611.3.1 with the following:

Precast reinforced concrete sections shall be constructed in horizontal courses. The units shall be laid in mortar or sealed with preformed flexible joint sealant or mastic joint sealer. When mastic joint sealer is used, the material shall completely fill the joint after the units have been brought together.

Handling holes may utilize an integral preformed metal insert. If the handling hole is open to both the internal and external wall of the structure, plug the handling hole with either a precast concrete plug mortared in place or with a combination of brick, mortar and/or mastic. The plug shall not project beyond the inside surface after installation. When integral preformed metal lifting inserts are used, their sockets shall be filled with mastic or mortar.

Provide and install manhole steps meeting the requirements of Section 3.5.4 (g) of the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition.

Inlet and outlet pipes shall extend through walls a sufficient distance to allow for connections on the outside and the collar concrete or mortar carefully placed around them to prevent leakage around their outlet surfaces. Unless otherwise shown, the inside ends shall be flush with the inside walls.

Provide and install either a pre-formed integral or poured-in place bench at the structure invert unless Plans identify a sump below the lowest pipe invert. The surface of the bench shall be free of loose material and smooth trowel finished to avoid surface projections impeding flow. Form the bench at the lowest pipe invert. Bench sides shall rise a minimum of half the diameter of the lowest pipe.

Use a mortar for final adjustment of manhole cover. Provide a butyl rubber gasket or butyl rubber rope for joints of precast reinforced concrete manhole sections. Butyl Rubber gasket joint used for manholes conforms to 8.41.6 of the Standard Specifications for Sewer and Water Construction in Wisconsin, latest Edition. Provide non-rocking covers for all drainage structures subject to traffic loading.

Submit shop drawings for all drainage structures. For structures where WisDOT standard detail drawings are not available, provide shop drawings prepared, verified and stamped by a professional engineer currently registered in the State of Wisconsin. Submit one electronic copy of shop drawings in portable document format for engineer's review two weeks before fabrication. Show clearly on shop drawings information for all pipe connections to the structure. The contractor is responsible for all errors of detailing and fabrication. The omission from the shop drawings of any pipe connection shall not relieve contractor of the responsibility of providing such materials, even though the shop drawings may have been reviewed and accepted by the engineer.

Fasten existing and proposed storm sewer structure covers subject to traffic loading according to Fastening Sewer Access Covers spec.

Supplement standard spec 611.3.2 with the following:

Conform to storm sewer concrete collar detail for storm sewer pipes to structure connections as the plans show.

Supplement standard spec 611.3.3 with the following:

Use monolithic concrete shimming as the plans show for final adjustment of drainage structures located within the freeway concrete pavement, concrete shoulders, concrete curb & gutter and concrete barrier wall. If the adjustment is less than 4-inches, the engineer may choose to direct the contractor to use grade rings for adjustments for storm sewer structures outside the freeway concrete pavement and at other non-freeway locations.

All associated masonry work, including but not limited to adjustment ring installation, false bottoms, pipe connections, and other structural appurtenances shall be tuckpointed and back plastered with mortar conforming to 518.2 upon completion and as directed by the Engineer. When tuckpointing and back plastering work is performed and completed at temperatures below 32-degrees F, keep the mortar moist at a temperature above 32-degrees F and provide protection from the elements to prevent freezing for a period of not less than 48 hours.

All catch basins, manholes, inlets, and similar structures newly constructed, adjusted or reconstructed under the contract, shall be cleaned of any accumulation of silt, debris, or foreign matter of any kind, and shall be free from such accumulations at the time of final acceptance.

Supplement standard spec 611.3.6.2 with the following:

Place a manufacturer recommended anti-seize compound on the bolt threads prior to installing. Remove bolts after proposed paving is finished, prior to opening roadway for final traffic configuration, or as directed by the engineer.

Supplement standard spec 611.3.7 with the following:

Construct height adjustments of 4-inches or more with concrete grade rings. Never use grade rings less than 2-inches thick. *HDPE or rubber rings are not permitted.*

Replace standard spec 611.5.2 (1) with the following:

Payment for Catch Basins, Manholes, and Inlets bid items is full compensation for providing all submittals; materials, including all masonry, for mortar adjustments and monolithic concrete shimming; adjusting rings; conduit and sewer connections, steps, and other fittings; for providing and installing butyl rubber joints; for furnishing backfill, backfilling; all excavating, disposing of surplus material, and for cleaning out and restoring the work site; except that the department will pay for covers, including frames, grates and lids separately.

Cost of non-rocking covers for all drainage structures subject to traffic loading is incidental to new cover on proposed structure or reconstructing/adjusting manholes or inlets on existing structure.

Fastening sewer access covers and removing performed joint sealant as the engineer directs are paid under separate bid items.

Replace standard spec 611.5.4 with the following:

Payment for Inlet Covers VV-B also includes full compensation for providing required materials, including bolts; for installing the bolts; and for removing and disposing of the bolts when no longer required.

63. Topsoil and Salvaged Topsoil.

Replace 625.2 (1) with the following:

- (1) Topsoil consists of loam, sandy loam, silt loam, silty clay loam, or clay loam humus-bearing soils adapted to sustain plant life, and ensure the topsoil consists of the following:

Topsoil Requirements	Minimum Range	Maximum Range
pH	6.0	8.0

Topsoil Requirements	Minimum Range	Maximum Range
Organic Matter*	5%	20%
Clay	5%	30%
Silt	10%	70%
Sand	10%	70%

*Organic matter determined by loss on ignition test of samples oven dried to constant weight at 212 F (100 C).

Add the following to standard spec 625.2:

- (3) Furnish material that is free from large roots, sticks, weeds, brush, stones, litter, and waste products.
- (4) Do not furnish surface soils from ditch bottoms, drained ponds, and eroded areas, or soils which are supporting growth of NR 40 listed plants and noxious weeds or other undesirable vegetation.

Replace 625.3.3 (3) with the following:

- (3) Ensure that for the upper 2 inches, 100 percent of the material passes a one-inch sieve and at least 90 percent passes the No. 10 sieve.

SER-625-001 (20221007)

64. Soil Stabilizer Type B.

Replace standard spec 628.3.12.3(1) with the following:

- (1) Apply soil stabilizer with conventional hydraulic seeding equipment at the manufacturer's recommended rate unless the engineer directs otherwise.

65. Fertilizer Type B.

Replace 629.2.1.3 with the following:

- (1) Fertilizer Type B Special will conform to the following requirements:

Nitrogen, not less than 24% with 6% percent of the nitrogen being slow release.

Phosphorus, not less than 15%

Potash, not less than 9%

- (2) The total nitrogen, phosphorus, and potash shall equal at least 48 percent.

Replace 629.3.1.3 with the following:

- (1) Apply fertilizer containing at least 48 percent total nitrogen, phosphorus, and potash at 5 pounds per 1,000 square feet unless otherwise directed by the engineer. For Fertilizer Type B Special that contains a different percentage of components, determine the new application rate by multiplying the specified rate by a dimensionless conversion factor determined as follows:

$$\text{Conversion Factor} = 48 / \text{New Percentage of Components}$$

Replace 629.4(1):

- (1) The department will measure Fertilizer Type B, Special by the hundred pounds (CWT) acceptably completed, measured based on the application rate of 5 pounds per 1,000 square feet. The department will not measure fertilizer used for the bid items under 632. The measured quantity equals the number of hundred-weight (CWT) of material determined by multiplying the actual number of cwt. of material incorporated by the ratio of the actual percentage of fertilizer components used to 48 percent for Fertilizer Type B Special.

SER-629-001 (20230109)

66. Signs Type I and II.

Furnish and install mounting brackets per approved product list for type II signs on overhead sign supports incidental to sign. For type II signs on sign bridges use aluminum vertical support beams noted above incidental to sign.

Supplement standard spec 637.2.4 with the following:

Use stainless steel bolts, washers and nuts for type I and type II signs mounted on sign bridges or type I signs mounted on overhead sign supports. Use clips on every joint for Sign Plate A 4-6 when mounted on a sign bridge or overhead sign support. Inspect installation of clips and assure bolts and nuts are tightened to manufacturers recommended torque values.

Use aluminum vertical sign support beams that have a 5-inch wide flange and weigh 3.7 pounds per foot, if the L-brackets are 4 inches wide then use 4 inch wide flange beams weighing 3.06 pounds per foot. Contractor shall measure the width of the L-brackets on existing structures to determine the width needed for sign support beams.

Use beams a minimum of six feet in length or equal to the height of the sign to be supported, whichever is greater. Use U-bolts that are made of stainless steel, one-half inch diameter and of the proper size to fit the truss cords of each sign bridge. Install vertical sign support beams on each sign and use new U-bolts to attach each beam to the top and bottom cord of the sign bridge truss.

For type II signs on overhead sign supports follow the approved product list for mounting brackets.

Replace standard spec 637.3.3.2(2) with the following:

- (2) Install Type I Signs at the offset stated in the plan, which shall be the clear distance between the edge of mainline pavement right edgeline and the near edge of the sign.

Supplement standard spec 637.3.3.3(3) with the following:

Furnish and install new aluminum vertical sign support beams on each sign and new U-bolts to attach each beam to the top and bottom cord of the sign bridge truss for Type I or Type II Signs and Type I signs on overhead sign supports incidental to sign.

Add the following to standard spec 641.2:

Submit shop drawings for sign bridges and overhead sign supports to SE Region Traffic Operations Engineer, Tom Heydel and Bureau of Structures Design.

For type II signs to be mounted on local roads (posts designated as Round Aluminum Sign Post System in Soft Surface or Round Aluminum Sign Post System in Concrete Surface), furnish and install signs according to the plans and standard spec 637, except as follows:

Provide all necessary sign mounting hardware as shown in the detail drawings which includes but is not limited to 5/16" x 1 1/4" Stainless Steel Fender Washers, 5/16"-18 x 3/4" Stainless Steel Hex Head Bolt, 201 Stainless Steel Banding 3/4" x 0.20, Stainless Steel Flared Leg Sign Mount Bracket for 3/4" banding, 201 Stainless Steel Wing Seal (buckle) for 3/4" banding and one- or two-sided sign mounting Z-brackets that fit 2 3/8 inch post or approved equal.

Affix the installation date sticker on back of sign in lower right corner. Stickers will be provided at pre-construction meeting or by the Inspector.

Record the location, type, and installation date of the signage using the provided Sign Installation Log (L-101).

67. Field Facilities.

Replace standard spec 642 with the following:

The department has procured its own Field Facilities located at 922 S. 70th Street, Milwaukee, WI, 53214.

68. Traffic Control.

Supplement standard spec 643.3.1 with the following:

Provide the Milwaukee County Sheriff's Department, the Wisconsin State Patrol, Milwaukee Police Department and the engineer a current telephone number with which the contractor or his representative can be contacted during non-working hours in the event a safety hazard develops.

Do not park or store equipment, contractor's and personal vehicles or construction materials within the clear zone or on any roadway carrying traffic during working and non-working hours except at locations and periods of time approved by the engineer.

Do not permit construction or personnel equipment or vehicles to directly cross the live traffic lanes of the freeway. Yield to all through traffic at all locations. Equip all vehicles or equipment operating in the live traffic lanes with a hazard identification beam (flashing yellow signal light) that is visible from 360 degrees. Operate the flashing yellow beam only when merging or exiting live traffic lanes or when parked or operating on shoulders, except when parked behind barrier wall. Do not park personal vehicles within the access control limits of the freeway. Do not cross live traffic lanes of the freeway with equipment or vehicles.

Obtain prior approval from the engineer for the locations of egress or ingress for construction vehicles to prosecute the work.

Do not disturb, remove or obliterate any traffic control signs, advisory signs, sand barrel array, shoulder delineators or beam guard in place along the traveled roadways without the approval of the engineer.

Ensure that Flagging operations conform to standard spec 104.6.1.(4) and chapter 6E of the WMUTCD.

Enter local road closures into the Wisconsin Lane Closure System (LCS).

Replace standard spec 643.3.1.(7) with the following:

Provide equipment, forces, and materials to promptly restore any traffic control devices or pavement markings damaged or disturbed within 2 hours of being contacted.

SER-643-001 (20170808)

69. Covering Signs.

Replace standard spec 643.2.3.3(2) with the following:

- (2) Ensure that covers are flat black, blank, and opaque.

Add the following to standard spec 643.3.4.1 as paragraph four:

- (4) If multiple messages on a single sign are required to be covered, minimize the number of holes created by covering the sign with a single rectangular shaped covering. Multiple coverings on a single sign are only permissible where necessary to avoid covering necessary content or as directed by the engineer. Submit sign covering plans to the engineer for single signs requiring multiple coverings 3 days before performing work. Obtain engineer approval before covering signs. Remove sign coverings before placing fixed messages signs unless otherwise directed by the engineer.

sef-643-005 (20180104)

70. Work Zone Ingress - Egress.

Any initial set-up and/or changes to the Work Zone Ingress – Egress construction detail in the plan or location(s) should be submitted a minimum of 10 working days before use and are subject to approval by the engineer and the Southeast Region Work Zone Engineer.

ser-643-005 (20180131)

71. Nighttime Work Lighting-Stationary.

A Description

This special provision describes furnishing portable lighting as necessary to complete nighttime work. Nighttime operations consist of work specifically scheduled to occur after sunset and before sunrise.

B (Vacant)

C Construction

C.1 General

This provision shall apply when providing, maintaining, moving, and removing portable light towers and equipment-mounted lighting fixtures for nighttime stationary work operations, for the duration of nighttime work on the contract.

At least 14 days before the nighttime work, furnish a lighting plan to the engineer for review and acceptance. Address the following in the plan:

1. Layout, including location of portable lighting – lateral placement, height, and spacing. Clearly show on the layout the location of all lights necessary for every aspect of work to be done at night.
2. Specifications, brochures, and technical data of all lighting equipment to be used.
3. The details on how the luminaires will be attached.
4. Electrical power source information.
5. Details on the louvers, shields, or methods to be employed to reduce glare.
6. Lighting calculations. Provide illumination with average to minimum uniformity ratio of 5:1 or less throughout the work area.
7. Detail information on any other auxiliary equipment.

C.2 Portable Lighting

Provide portable lighting that is sturdy and free standing and does not require any guy wires, braces, or any other attachments. Furnish portable lighting capable of being moved as necessary to keep up with the construction project. Position the portable lighting and trailers to minimize the risk of being impacted by traffic on the roadway or by construction traffic or equipment. Provide lightning protection for the portable lighting. Portable lighting shall withstand up to 60 mph wind velocity.

If portable generators are used as a power source, furnish adequate power to operate all required lighting equipment without any interruption during the nighttime work. Provide wiring that is weatherproof and installed according to local, state, federal (NECA and OSHA) requirements. Equip all power sources with a ground-fault circuit interrupter to prevent electrical shock.

C.3 Light Level and Uniformity

Position (spacing and mounting height) the luminaires to provide illumination with an average to minimum uniformity ratio of 5:1 or less throughout the work area.

Illuminate the area as necessary to incorporate construction vehicles, equipment, and personnel activities.

C.4 Glare Control

Design, install, and operate all lighting supplied under these specifications to minimize or avoid glare that interferes with all traffic on the roadway or that causes annoyance or discomfort for properties adjoining the roadway. Locate, aim, and adjust the luminaires to provide the adequate level of illumination and the specified uniformity in the work area without the creation of objectionable glare.

Provide louvers, shields, or visors, as needed, to reduce any objectionable levels of glare. As a minimum, ensure the following requirements are met to avoid objectionable glare on the roadways open to traffic in either direction or for adjoining properties:

1. Aim tower-mounted luminaires, either parallel or perpendicular to the roadway, so as to minimize light aimed toward approaching traffic.
2. Aim all luminaires such that the center of beam axis is no greater than 60 degrees above vertical (straight down).

If lighting does not meet above-mentioned criteria, adjust the lighting within 24 hours.

C.5 Continuous Operation

Provide and have available sufficient fuel, spare lamps, generators, and qualified personnel to ensure that the lights will operate continuously during nighttime operation. In the event of any failure of the lighting system, discontinue the operation until the adequate level of illumination is restored. Move and remove lighting as necessary.

D (Vacant)

E Payment

Costs for furnishing a lighting plan, and for providing, maintaining, moving, and removing portable lighting, tower mounted lighting, and equipment-mounted lighting required under this special provision are incidental to the contract.

stp-643-010 (20100709)

72. Temporary Pavement Marking.

Add the following to standard spec 649.3:

- (1) On pavements not scheduled for removal under this project, remove markings using air blasting, water blasting, or a combination of thereof. Do not use grinding on these pavements.

73. General Requirements for Electrical Work.

Notice to Contractor – Traffic Signal Equipment Lead Time. Lead time for traffic signal equipment specified for this project has been up to 30 months. Order equipment as soon as possible to assure the equipment is procured in a timely fashion and, therefore, installed, inspected, and ready for turn-on at the required date.

Notice to Contractor – Traffic Signal As Built Guidelines. The Traffic Signal General Notes in the plans identify specific guidelines for compiling traffic signal as built plans. These guidelines and requirements are considered incidental to traffic signal work.

Notice to Contractor – Temporary Electrical Service. The contractor is responsible for applying for temporary electrical service for the temporary traffic signal installed during stage 3B. Initiate coordination with the electrical utility as soon as possible to assure service is available at the anticipated time of turn on.

Notice to Contractor – Capping Pedestal and Transformer Bases. This contract includes pedestal and transformer bases for protecting concrete base anchor bolts. The contractor shall provide steel or aluminum caps or covers that can be affixed to the bases to prevent anything from entering the base. Caps shall be incidental to the bases.

Notice to Contractor – Existing Traffic Signals During Construction. The City of Milwaukee is responsible for operations and maintenance of existing traffic signals during Stage 1 and 2. The contractor is responsible for covering the signal indications per the temporary traffic signal plans. Coordinate with the City for any timing changes.

Replace section 651.3.3 (3) of the standard specifications with the following:

- (2) Request a signal inspection of the completed signal installation to the project engineer at least five working days prior to the time of the requested inspection. Notify the City of Milwaukee's Signal Shop [Rudy Gutierrez, Manager; (414) 286-3687 office/dispatch or (414) 708-5148 mobile; 1540 W. Canal Street, Milwaukee, WI 53233] to coordinate the inspection. City personnel will perform the inspection. In the event of deficiencies, request a re-inspection when the work is corrected.

74. Electrical Conduit.

Append section 652.3.1 of the standard specifications with the following:

- (6) Provide removable sealant such as duct seal in the conduits at the cabinets, pull boxes, and junction boxes to avoid condensation cause by airflow through the conduits due to temperature difference. This work will be incidental to the associated conduit pay item.

- (7) Pull rope (3/8-inch nylon) shall be installed in all new conduit.

Replace section 652. 5 (2) of the standard specifications with the following:

- (2) Payment for Conduit Rigid Metallic, Conduit Rigid Nonmetallic, Conduit Reinforced Thermosetting Resin, and Conduit Special bid items is full compensation for providing the conduit, conduit bodies, and fittings; for providing all conduit hangers, clips, attachments, and fittings used to support conduit on structures; for pull wires or ropes; for expansion fittings and caps; for making necessary connections into existing pull boxes; for excavating, bedding, and backfilling, including any sand, concrete, or other required materials; for disposing of surplus materials; and for making inspections.

75. Electrical Wiring.

Append section 655.3.1 of the standard specifications with the following:

- (5) Where traffic signal and lighting cables pass through a pull point, tag each cable with its lighting circuit network (i.e. A/B/N and C/D/N) or traffic signal component (i.e. SB1, V1, EVP A, etc) with approved all weather tag.

76. Abandoning Sewer, Item 204.0291.S.

A Description

This special provision describes abandoning existing sewer by filling it with flowable grout as the plans show and conforming to standard spec 204 and standard spec 501 as modified in this special provision.

B Materials

B.1 Cement

Furnish cement meeting the requirements of standard spec 501.2.4.1 for Type I or II Portland Cement or Type IL Portland-Limestone Cement.

B.2 Fly Ash

Furnish Class C or F Fly Ash meeting the requirements of standard spec 501.2.4.2.2.

B.3 Sand

Furnish natural sand meeting the fine aggregate requirements of standard spec 501.2.7.2 and the size requirements of standard spec 501.2.7 except the percent passing the number 200 sieve shall be 0-5 percent by weight.

B.4 Water

Furnish water meeting the requirements of standard spec 501.2.6.

B.5 Mix Design

Use the basic proportions of dry materials per cubic yard of grout as follows:

- Cement 100 pounds
- Fly Ash 400 pounds
- Fine Aggregate 2600 pounds

or an engineer approved equal.

In addition the grout shall conform to the following:

Compressive Strength	ASTM C495	300 psi @ 28 day min
Density	ASTM C495 (no oven drying)	50 pcf min
Shrinkage	ASTM C157	1% by volume
Flow	ASTM C939	35 sec max

Air entraining and chemical admixtures to control fluidity of the grout are allowable. Ten days before placement, furnish to the engineer a design mix detailing all components and their proportions in the mix.

B.6 Cellular Grout

Alternatively, the contractor may use, or if the manufacturer recommends, an engineer-approved commercial cellular concrete grout conforming to the following:

Cement	ASTM C150/ ASTM C595	Type I or II/Type IL
Density	ASTM C495 (no oven drying)	50 pcf min
Compressive Strength	ASTM C495	300 psi @ 28 day min 100 psi in 24 hours
Shrinkage	ASTM C157	1% by volume
Flow	ASTM C939	35 sec max

C Construction

Fill the abandoned sewer pipe with flowable grout as the engineer directs. In the event that the sewer cannot be completely filled from existing manholes, tap the sewer where necessary and fill from these locations.

D Measurement

The department will measure Abandoning Sewer in volume by the cubic yard as specified in standard spec 109.1.3.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
204.0291.S	Abandoning Sewer	CY

Payment is full compensation for furnishing all materials and excavating and backfilling where necessary.
stp-204-050 (20250108)

77. Removing Advance Flasher Assemblies Type 1, Item 204.9001.S.

A Description

This special provision describes removing advance flasher assemblies from the locations the plans show. Rewire and disconnect wiring in the control cabinet as necessary and properly dispose of materials conforming to standard spec 204.3.1.3.

B Materials

Dispose of all materials resulting from removing the Advance Flasher Assemblies including but not limited to poles, break-a-way bases, signal assemblies, bulbs, and wire off the job site.

C Construction

Do not remove existing advance flasher assemblies until proper disconnects and wiring changes in the controller cabinet have been made.

Where an existing advance flasher assembly is mounted to a light pole, remove all signal hardware including wire, conduit, signal assemblies and mounts. Where existing conduit has been installed under concrete sidewalk or roadway, do not remove buried conduit unless directed otherwise by the engineer or unless it is not possible to install new wire through the existing conduit.

D Measurement

The department will measure Removing Advance Flasher Assemblies (Type) by the unit, acceptably removed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
204.9001.S	Removing Advance Flasher Assemblies, Type 1	EACH

Payment is full compensation for removing advanced flasher assemblies; for rewiring, as necessary; for disconnecting wiring as necessary in the controller cabinet; and for properly disposing of all materials.

Removal of concrete bases and signs associated with this item will be measured and paid for separately.

stp-204-060 (20170615)

78. Removing Steps Railing, Item 204.9060.S.0001.

A Description

This special provision describes removing existing pedestrian railing adjacent to concrete steps conforming to standard spec 204.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Removing Steps Railing as each individual unit, acceptably completed.

E Payment

Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.0001	Removing Steps Railing	EACH

stp-204-025 (20230113)

79. Removing Lighting Units, Item 204.9060.S.1002.

A Description

This special provision describes the removing lighting units as shown on the plans, according to the pertinent provisions of standard spec 204, and hereinafter provided. Lamp disposal and concrete base removal shall be paid under a separate bid items.

B (Vacant)

C Construction

Remove lighting units consisting of pole, arm, luminaire, lamp, wires, breakaway device, and associated hardware and appurtenances. All removed material shall become the property of the contractor and be disposed off the project site.

No removal work will be permitted without approval from the engineer. Removal shall start as soon as the temporary lighting or permanent lighting, as applicable, is placed in approved operation. An inspection and approval by the engineer will take place before any associated proposed permanent or temporary lighting is approved for operation.

D Measurement

The department will measure Removing Lighting Units by each individual unit removed, acceptably completed.

E Payment

Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.1002	Removing Lighting Units	EACH

80. Removing Landscape Rock, Item 204.9165.S.0002.

A Description

This special provision describes removing Landscape Rock conforming to standard spec 204.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Removing Landscape Rock in square feet, acceptably completed.

E Payment

Add the following to standard spec 204.5:

ITEM NUMBER	DESCRIPTION	UNIT
204.9165.S.0002	Removing Landscape Rock	SF
stp-204-025 (20230113)		

81. Remove Traffic Signals W St Paul Ave & N 27th St, Item 204.9060.S.3101.

A Description

This special provision describes removing existing traffic signals at the intersection of W St Paul Ave & N 27th St in accordance to the pertinent provisions of section 204 of the standard specifications and as hereinafter provided. Specific removal items are noted in the plans. Removing concrete bases and removing pull boxes are covered under separate removal items.

B (Vacant)

C Construction

Arrange for the de-energizing of the traffic signals with the local electrical utility after receiving approval from the engineer that the existing traffic signals can be removed.

Notify City of Milwaukee Signals Shop [Rudy Gutierrez, Manager; (414) 286-3687 office/dispatch or (414) 708-5148 mobile; 1540 W. Canal Street, Milwaukee, WI 53233] and City of Milwaukee Signals Engineering [(414) 286-3232; 841 N. Broadway Room 920, Milwaukee, WI 53202] at least three (3) working days prior to the removal of the traffic signals equipment. Complete the removal work as soon as possible following shut down of the equipment.

The Department assumes that all equipment is in good condition and in working order prior to the contractor's removal operation. Prior to removal, inspect and provide a list of any damaged or non-working traffic signal equipment to the engineer. Any equipment not identified as damaged or not working, prior to removal, will be replaced by the contractor at no cost to the department.

Remove all standards and poles per plan from their concrete footings and disassemble out of traffic. Remove the pedestal bases from each pole. Remove the signal heads, EVP detectors, confirmation lights, microwave detectors, monotube arms, traffic signal wiring/cabling, and traffic signal mounting devices from each signal standard, arm or pole. Ensure that all access hand-hole doors and all associated hardware remain intact. Remove the traffic signal cabinet from the concrete footing. Dispose of the underground signal cable, and internal wires off the right of way. Store the remaining materials, except the traffic signal LED and switch, in an engineer approved location on the project. The City of Milwaukee will pick up the salvaged materials. Contact City of Milwaukee Signals Shop [Rudy Gutierrez, Manager; (414) 286-3687 office/dispatch or (414) 708-5148 mobile; 1540 W. Canal Street, Milwaukee, WI 53233] and City of Milwaukee Signals Engineering [(414) 286-3232; 841 N. Broadway Room 920, Milwaukee, WI 53202] to arrange pick up.

Traffic signal LED and switch disposal shall be paid for as a separate item.

D Measurement

The department will measure Remove Traffic Signals [Location] as each individual intersection, acceptably completed.

E Payment

The department will pay for the measured quantity at the contract unit price under the following bid item.

ITEM NUMBER	DESCRIPTION	UNIT
204.9060.S.3101	Remove Traffic Signals W St Paul Ave & N 27th St	EACH

Payment is full compensation for removing, disassembling traffic signals, scrapping of some materials, disposing of scrap material, for storing the requested materials for the City of Milwaukee.

82. Excavation, Hauling, and Disposal of Petroleum Contaminated Soil, Item 205.0501.S.

A Description

A.1 General

This special provision describes excavating, loading, hauling, and disposing of petroleum-contaminated soil at a DNR approved bioremediation facility or landfill. The closest DNR approved bioremediation facilities or landfills are:

Waste Management Orchard Ridge Landfill
W124 N9355 Boundary Road
Menomonee Falls, WI 53051
(866) 909-4458

Green For Life (GFL) Emerald Park Landfill
W124S10629 South 124th Street
Muskego, WI 53132
(414) 529-1360

Perform this work conforming to standard spec 205 and Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR 718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport contaminated soil.

A.2 Notice to the Contractor – Contaminated Soil and Groundwater Locations

The department completed testing for soil and groundwater contamination for locations within this project where excavation is required. Testing indicated that petroleum-contaminated soil is present at the following locations:

1. Station 2006+75 to 2007+50 (R-40-761 alignment), from 45 feet right of reference line to 135 feet right of reference line, from 0 to 3+ feet bgs (excluding the historic pavement structure of the former Red Star Yeast site consisting of asphalt, concrete, and/or stone). The estimated volume of contaminated soil to be excavated at this location is 0 CY (approximately 0 tons using a conversion factor of 1.7 tons per cubic yard). Groundwater at this location may be contaminated with petroleum.
2. Station 2010+00 to 2013+25 (R-40-761 alignment), from 0 feet right of reference line to 160 feet right of reference line, from 0 to 3+ feet bgs (excluding the historic pavement structure of the former Red Star Yeast site consisting of asphalt, concrete, and/or stone). The estimated volume of contaminated soil to be excavated at this location is 832 CY (approximately 1,415 tons using a conversion factor of 1.7 tons per cubic yard). Groundwater at this location may be contaminated with petroleum.

If contaminated soils and/or contaminated groundwater are encountered elsewhere on the project, terminate excavation activities in the area and notify the engineer.

For further information regarding previous investigation and remediation activities at these sites contact:

Name: Andrew Malsom
Address: 141 NW Barstow Street, PO Box 798, Waukesha, WI 53187-0798
Phone: 262-548-6705
Fax: 262-548-6891
E-mail: andrew.malsom@dot.wi.gov

A.3 Coordination

Coordinate work under this contract with the environmental consultant:

Consultant: TRC Environmental Corporation
Contact: Bryan Bergmann
Address: 6737 W. Washington St., Suite 3460, West Allis, WI 53214
Phone: 262-901-2126 (office), 262-227-9210 (cell)
E-mail: bbergmann@trccompanies.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of contaminated soil to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying contaminated soils to be hauled to the bioremediation facility or landfill;
3. Documenting that activities associated with management of contaminated soil are in conformance with the contaminated soil management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of contaminated soil from the bioremediation facility or landfill.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the areas of contamination to the environmental consultant. Also notify the environmental consultant at least three calendar days before beginning excavation activities in each of the contaminated areas.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the contaminated areas. Perform excavation work in each of the contaminated areas on a continuous basis until excavation work is completed.

Identify the DNR approved bioremediation facility or landfill that will be used for disposal of contaminated soils and provide this information to the environmental consultant no later than 30 calendar days before beginning excavation activities in the contaminated areas or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals for disposal of contaminated soils from the bioremediation facility or landfill. Do not transport contaminated soil offsite without prior approval from the environmental consultant.

A.4 Health and Safety Requirements

Add the following to standard spec 107.1:

During excavation activities, expect to encounter soil contaminated with gasoline, diesel fuel, fuel oil, or other petroleum related products. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each contaminated site location as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer before the start of work.

B (Vacant)

C Construction

Add the following to standard spec 205.3:

Control operations in the contaminated areas to minimize the quantity of contaminated soil excavated.

The environmental consultant will periodically evaluate soil excavated from the contaminated areas to determine if the soil will require offsite bioremediation. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 20 cubic yards excavated.

Directly load and haul soils designated by the environmental consultant for offsite bioremediation or landfilling to the DNR approved bioremediation facility or landfill. Use loading and hauling practices that are appropriate to prevent any spills or releases of petroleum-contaminated soils or residues. Before

transport, sufficiently dewater soils designated for off-site bioremediation or landfilling so as not to contain free liquids.

If dewatering is required in areas of known contamination, water generated from dewatering activities may contain petroleum compounds, chlorinated volatile organic compounds, and/or metals. Such water may require analytical testing, and with approval from the City of West Allis and the Milwaukee Metropolitan Sewerage District (MMSD) be discharged to the sanitary sewer as follows:

1. Meet all applicable requirements of the City of Milwaukee and the MMSD including the control of suspended solids. Perform all necessary monitoring to document compliance with the City of Milwaukee and the MMSD requirements. Furnish, install, operate, maintain, disassemble, and remove treatment equipment necessary to comply with the City of Milwaukee and the MMSD.
2. Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities.

Groundwater with a petroleum sheen cannot be discharged to the sanitary sewer per the MMSD guidelines. If dewatering is necessary where the groundwater has a sheen on the surface, the water shall be pumped into a holding tank or tanker truck for off-site testing and disposal.

Notify the engineer of any dewatering activities. Contractor shall obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

Costs associated with excavation dewatering in contaminated areas are considered incidental to this pay item. The Wisconsin Department of Transportation will be the generator of regulated solid waste from this construction project.

Limit excavation in the location described in A.2 to minimize the handling of groundwater. Notify the engineer of any dewatering activities and obtain any permits necessary to discharge or dispose of contaminated water. Provide copies of such Permit to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

D Measurement

The department will measure Excavation, Hauling, and Disposal of Petroleum Contaminated Soil in tons of contaminated soil, accepted by the bioremediation facility or landfill as documented by weight tickets generated by the bioremediation facility or landfill.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
205.0501.S	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	TON

Payment is full compensation for excavating, segregating, loading, hauling, and treatment via bioremediation, or landfilling of contaminated soil; obtaining solid waste collection and transportation service operating licenses; assisting in the collection soil samples for field evaluation; and dewatering of soils before transport, if necessary.

stp-205-003 (20230113)

83. Backfill Controlled Low Strength, Item 209.0200.S.

A Description

This special provision describes furnishing and placing a controlled low strength material designed for use as backfill in trenches for culverts, sewers, utilities, or similar structures, as backfill behind bridges abutments, or as fill for the abandonment of culverts, pipes, or tanks.

B Materials

Provide controlled low strength backfill that consists of a designed cementitious mixture of natural or processed materials. Allowable materials include natural sand, natural gravel, produced sand, foundry sand, produced gravel, fly ash, Portland cement, and other broken or fragmented mineral materials. The

designed mixture shall be self-leveling and shall be free of shrinkage after hardening. Design the mixture to reach a state of hardening such that it can support foot traffic in no more than 24 hours. Provide a mixture that also meets the following requirements.

TEST	METHOD	VALUE
Flow (inch)	ASTM D-6103	9 min
Compressive	ASTM D-6024	20-40 @ 14 days
Strength (psi)		40-80 @ 28 days
		80-120 @ 90 days

Chemical admixtures to control air content and setting time are allowable. Ten days before placement, furnish the engineer with a design mix detailing all components and their proportions in the mix.

C Construction

Place controlled low strength backfill at the locations and to the lines and grades as shown on the plan. Proportion and mix materials to produce a product of consistent texture and flow characteristics. The engineer may reject any materials exhibiting a substantial change in properties, appearance, or composition.

If the official Weather Bureau forecast for the construction site predicts temperatures at or below freezing within the next 24 hours after placement of controlled low strength backfill, protect the placed materials from freezing during that time period. If the temperature is not forecast to rise above 40° F for 72 hours after placement, the engineer may require protection from freezing for up to 72 hours.

No controlled low strength backfill shall be allowed to enter any stream, lake, or sewer system. The contractor shall be responsible for any clean up or remediation costs resulting from such occurrences.

D Measurement

The department will measure Backfill Controlled Low Strength in volume by the cubic yard of material, placed and accepted. Such volume shall be computed from actual measurements of the dimensions of the area to be backfilled. In irregular or inaccessible areas, the engineer may allow volume to be determined by other appropriate methods.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
209.0200.S	Backfill Controlled Low Strength	CY

Payment is full compensation for designing the mix; supplying all materials; preparing the proportioned mix; hauling it to the construction site; placing the material; and protecting it from freezing.

stp-209-010 (20191121)

84. Coloring Concrete Custom, Item 405.0200.

This special provision describes coloring concrete Milwaukee dark gray for incorporation full depth in work constructed under other contract bid items. Conform to standard spec 405 as modified in this special provision.

Replace standard spec 405.2.1.1(1) with the following:

- (1) Integrally color concrete using non-fading pigments conforming to ASTM C979.
 - For Milwaukee dark gray: use synthetic mineral-oxide pigments or colored water-reducing admixtures, color stable, free of carbon black, non-fading, and resistant to lime and other alkalis pigments, at a loading by weight of total cementitious material in the mix in accordance to manufacturer recommendations. Match the concrete color in reasonably close conformance with Milwaukee dark gray color, which is similar to Federal Standard 595 - FS 26008.

Replace standard spec 405.2.1.1(3) with the following:

- (3) The department will accept the color based on comparison to color samples available for viewing along East Wells Street between North Broadway and North Van Buren Street in the City of Milwaukee.

stp-405-020 (20190618)

85. Asphaltic Mixture For Extreme Conditions, Item 450.1100.S.

A Description

This special provision describes assigning responsibility for extreme weather paving to the department.

This special provision applies only to work done under standard spec 450 through 490 that the contract requires to be performed within the following prescribed times:

- In the northern asphalt zone: between November 1 and April 15 inclusive.
- In the southern asphalt zone: between November 15 and April 1 inclusive.
- When ambient temperatures are less than 36 F for upper layers, 32 F for lower layers, and the contractor is asked to pave.

CMM 4-53 figure 2 defines asphalt zones.

This special provision applies only to following work:

DESCRIPTION	LOCATION
Emergency Pavement Repair	IH 94

B Materials

Conform to the materials requirements of standard spec 450 through 490 as modified in other contract special provisions for work specified in A.

C Construction

Conform to the construction requirements of standard spec 450 through 490 as modified in other contract special provisions for work specified in A, and as follows:

Delete standard spec 450.3.2.1.1(1) and 450.5.2(3).

Replace standard spec 450.3.2.1.2.2(2) with the following:

- (2) Engineer written acceptance is required for the cold weather paving plan. Engineer acceptance of the plan does not relieve the contractor of responsibility for the quality of HMA pavement placed in cold weather except as specified in E.

D Measurement

The department will measure Asphaltic Mixture For Extreme Conditions by the ton placed for work specified in A. The department will only measure work performed under standard spec 460, 465, and related special provision bid items if that work conforms to an engineer-accepted cold weather paving plan.

E Payment

The department will pay for the measured quantity at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
450.1100.S	Asphaltic Mixture For Extreme Conditions	TON

Payment for Asphaltic Mixture For Extreme Conditions is full compensation for additional materials and equipment required for operations in extreme conditions for work specified in A.

The department will not assess disincentives for density or ride deficiencies the engineer attributes to cold weather paving. The department is responsible for damage or defects the engineer attributes to temperature or other extreme conditions. The department will pay separately for repairing this damage or these defects as extra work.

The department will pay separately for work done under standard spec 450 through 490 and associated special provisions. The department will not pay separately for the HMA Cold Weather Paving bid item for work specified in A.

stp-450-010 (20170615)

86. QMP HMA Pavement Nuclear Density.

A Description

Replace standard spec 460.3.3.2 (1) and standard spec 460.3.3.2 (4) with the following:

- (1) This special provision describes density testing of in-place HMA pavement with the use of nuclear density gauges. Conform to standard spec 460 except as modified in this special provision.
- (2) Provide and maintain a quality control program defined as all activities and documentation of the following:
 1. Selection of test sites.
 2. Testing.
 3. Necessary adjustments in the process.
 4. Process control inspection.
- (3) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required procedures.

<https://wisconsindot.gov/rdwy/cmm/cm-08-00.pdf>

- (4) The department's Materials Reporting System (MRS) software allows contractors to submit data to the department electronically, estimate pay adjustments, and print selected reports. Qualified personnel may obtain MRS software from the department's web site at:

<http://www.atwoodsystems.com/>

B Materials

B.1 Personnel

- (1) Nuclear gauge owners and personnel using nuclear gauges shall comply with WisDOT requirements according to 460.3.3 and CMM 815.

B.2 Testing

- (1) Conform to WTM T355 and CMM 815 for density testing and gauge monitoring methods. Conform to CMM 815.10.4 for test duration and gauge placement.

B.3 Equipment

B.3.1 General

- (1) Furnish nuclear gauges according to CMM 815.2.
- (2) Furnish nuclear gauges from the department's approved product list at

<https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx>

B.3.2 Comparison of Nuclear Gauges

B.3.2.1 Comparison of QC and QV Nuclear Gauges

- (1) Compare QC and QV nuclear gauges according to WTM T355.

B.3.2.2 Reference Site Monitoring

- (1) Conduct reference site monitoring for both QC and QV gauges according to WTM T355.

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

- (1) Divide the pavement into lots and sublots for nuclear density testing according to CMM 815.10.2.
- (2) Determine required number of tests according to CMM 815.10.2.1.
- (3) Determine random testing locations according to CMM 815.10.3.

B.4.1.2 Side Roads, Crossovers, Turn Lanes, Ramps, and Roundabouts

- (1) Divide the pavement into lots and sublots for nuclear density testing according to CMM 815.10.2.
- (2) Determine required number of tests according to CMM 815.10.2.2.

- (3) Determine random testing locations according to CMM 815.10.3.

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

- (1) Calculate the average subplot densities using the individual test results in each subplot.
- (2) If all subplot averages are no more than one percent below the target density, calculate the daily lot density by averaging the results of each random QC test taken on that day's material.
- (3) If any subplot average is more than one percent below the target density, do not include the individual test results from that subplot when computing the lot average density and remove that subplot's tonnage from the daily quantity for incentive. The tonnage from any such subplot is subject to disincentive pay as specified in standard spec 460.5.2.2.

B.4.2.2 Mainline Shoulders

B.4.2.2.1 Width Greater Than 5 Feet

- (1) Determine the pavement density as specified in B.4.2.1.

B.4.2.2.2 Width of 5 Feet or Less

- (1) If all subplot test results are no more than 3.0 percent below the minimum target density, calculate the daily lot density by averaging all individual test results for the day.
- (2) If a subplot test result is more than 3.0 percent below the target density, the engineer may require the unacceptable material to be removed and replaced with acceptable material or allow the nonconforming material to remain in place with a 50 percent pay reduction. Determine the limits of the unacceptable material according to B.4.3.

B.4.2.3 Side Roads, Crossovers, Turn Lanes, Ramps, and Roundabouts

- (1) Determine the pavement density as specified in B.4.2.1.

B.4.2.4 Documentation

- (1) Document QC density test data as specified in CMM 815. Provide the engineer with the data for each lot within 24 hours of completing the QC testing for the lot.

B.4.3 Corrective Action

- (1) Notify the engineer immediately when an individual test is more than 3.0 percent below the specified minimum in standard spec 460.3.3.1. Investigate and determine the cause of the unacceptable test result.
- (2) The engineer may require unacceptable material specified in B.4.3 (1) to be removed and replaced with acceptable material or allow the nonconforming material to remain in place with a 50 percent pay reduction. Determine limits of the unacceptable area by measuring density of the layer at 50-foot increments both ahead and behind the point of unacceptable density and at the same offset as the original test site. Continue testing at 50-foot increments until a point of acceptable density is found as specified in standard spec 460.5.2.2(1). Removal and replacement of material may be required if extended testing is in a previously accepted subplot. Testing in a previously accepted subplot will not be used to recalculate a new lot density.
- (3) Compute unacceptable pavement area using the product of the longitudinal limits of the unacceptable density and the full subplot width within the traffic lanes or shoulders.
- (4) Retesting and acceptance of replaced pavement will be as specified in standard spec 105.3.
- (5) Tests indicating density more than 3.0 percent below the specified minimum, and further tests taken to determine the limits of unacceptable area, are excluded from the computations of the subplot and lot densities.
- (6) If two consecutive subplot averages within the same paving pass and same target density are more than one percent below the specified target density, notify the engineer and take necessary corrective action. Document the locations of such sublots and the corrective action that was taken.

B.5 Department Testing

B.5.1 Verification Testing

- (1) The department will have a HTCP certified technician, or ACT working under a certified technician, perform verification testing. The department will test randomly at locations independent of the contractor's

QC work. The department will perform verification testing at a minimum frequency of 10 percent of the sublots and a minimum of one subplot per mix design. The sublots selected will be within the active work zone. The contractor will supply the necessary traffic control for the department's testing activities.

- (2) The QV tester will test each selected subplot using the same testing requirements and frequencies as the QC tester.
- (3) If the verification subplot average is not more than one percent below the specified minimum target density, use the QC tests for acceptance.
- (4) If the verification subplot average is more than one percent below the specified target density, compare the QC and QV subplot averages. If the QV subplot average is within 1.0 lb/ft³ of the QC subplot average, use the QC tests for acceptance.
- (5) If the first QV/QC subplot average comparison shows a difference of more than 1.0 lb/ft³ each tester will perform an additional set of tests within that subplot. Combine the additional tests with the original set of tests to compute a new subplot average for each tester. If the new QV and QC subplot averages compare to within 1.0 lb/ft³, use the original QC tests for acceptance.
- (6) If the QV and QC subplot averages differ by more than 1.0 lb/ft³ after a second set of tests, resolve the difference with dispute resolution specified in B.6. The engineer will notify the contractor immediately when density deficiencies or testing precision exceeding the allowable differences are observed.

B.5.2 Independent Assurance Testing

- (1) Independent assurance is unbiased testing the department performs to evaluate the department's verification and the contractor's QC sampling and testing including personnel qualifications, procedures, and equipment. The department will perform the independent assurance review according to the department's independent assurance program.

B.6 Dispute Resolution

- (1) The testers may perform investigation in the work zone by analyzing the testing, calculation, and documentation procedures. The testers may perform gauge comparison according to B.3.2.1.
- (2) The testers may use comparison monitoring according to B.3.2.2 to determine if one of the gauges is out of tolerance. If a gauge is found to be out of tolerance with its reference value, remove the gauge from the project and use the other gauge's test results for acceptance.
- (3) If the testing discrepancy cannot be identified, the contractor may elect to accept the QV subplot density test results or retesting of the subplot in dispute within 48 hours of paving. Traffic control costs will be split between the department and the contractor.
- (4) If investigation finds that both gauges are in error, the contractor and engineer will reach a decision on resolution through mutual agreement.

B.7 Acceptance

- (1) The department will not accept QMP HMA Pavement Nuclear Density if a non-compared gauge is used for contractor QC tests.

C (Vacant)

D (Vacant)

E Payment

E.1 QMP Testing

- (1) Costs for all sampling, testing, and documentation required under this special provision are incidental to the work. If the contractor fails to perform the work required under this special provision, the department may reduce the contractor's pay. The department will administer pay reduction under the Non-performance of QMP administrative item.

E.2 Disincentive for HMA Pavement Density

- (1) The department will administer density disincentives as specified in standard spec 460.5.2.2.

E.3 Incentive for HMA Pavement Density

- (1) The department will administer density incentives as specified in standard spec 460.5.2.3.

stp-460-020 (20230629)

87. Cold Patch, Item 495.1000.S.

A Description

This special provision describes furnishing cold patch and filling potholes and other voids in existing pavement surfaces as the engineer directs.

B Materials

Furnish a mixture of course aggregate, natural sand, and MC-250 bituminous material designed to have a workability range of 15-100° F without heating. Ensure that the mixture:

- Adheres to wet surfaces.
- Resists damage from water, salt, and deicing products.
- Requires no mixing or special handling before use.
- Supports traffic immediately after placement and compaction.

Conform to the following gradation:

SIEVE SIZE	PERCENT PASSING (by weight)
1/2-inch (12.5 mm)	100
3/8-inch (9.5 mm)	90 - 100
No. 4 (4.75 mm)	90 max
No. 8 (2.38 mm)	20 - 65
No. 200 (0.074 mm)	2 - 10
Bitumen	4.8 - 5.4

The department will accept cold patch based primarily on the engineer's visual inspection. The department may also test for gradation.

C Construction

Stockpile cold patch on site on a smooth, firm, well-drained area cleared of vegetation and foreign material. Cover the stockpile and ensure that it is easily accessible. Replenish the stockpile throughout the project duration but limit the size at any given time to 10 tons on site unless the engineer approves otherwise. Dispose of unused material at project completion unless the engineer directs otherwise.

Place cold patch by hand. Remove ponded water and loose debris before placement. Compact flush with a tamper, roller, or vehicle tire after placement.

Refill patched areas as necessary to maintain a flush pavement surface until project completion.

D Measurement

The department will measure Cold Patch by the ton, acceptably stockpiled on site.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
495.1000.S	Cold Patch	TON

Payment for Cold Patch is full compensation for providing and maintaining patches; for furnishing and replenishing stockpiled material on-site; and for disposing of excess material at project completion.

stp-495-010 (20160607)

88. Nighttime Placement of HPC Masonry Structures.

For placement of HPC Masonry Structures for bridge construction during nighttime hours:

Place HPC Masonry Structures for bridge construction during nighttime hours. Begin work no earlier than two hours before sunset and end no later than 2 hours after sunrise; unless alternate begin and end times are approved before the concrete placement by the engineer. To determine acceptable hours, use the sunset and sunrise times published by the National Weather Service for the proposed date of the concrete placement or as mutually agreed to by the contractor and the engineer.

Provide lighting as necessary to safely perform the required work and facilitate inspection during nighttime hours. Ensure that lighting does not interfere with or impede traffic on open roadways and does not cause glare, shine or directly face the eyes of oncoming drivers. After initial setup, drive through and observe the lighted work area from each direction on the main roadway. Adjust lighting alignment if lighting causes glare, shine or directly faces the eyes of oncoming drivers.

Lighting for nighttime placement of HPC Masonry Structures for bridge construction is incidental to the HPC Masonry Structures bid item.

89. Ice Hot Weather Concreting, Item 501.1000.S.

Conform to standard spec 501.3.8.2 except the department will pay for ice at the contract unit price under the Ice Hot Weather Concreting bid item. This special provision only applies to work done under the following contract bid items:

Concrete Masonry Bridges	Concrete Masonry Retaining Walls
Concrete Masonry Bridges HES	Concrete Masonry Retaining Walls HES
Concrete Masonry Culverts	Concrete Masonry Endwalls
Concrete Masonry Culverts HES	Concrete Masonry Overlay Decks
Concrete Barrier Single-Faced 32-Inch	Concrete Barrier (type)
Concrete Barrier Double-Faced 32-Inch	Concrete Barrier Fixed Object Protection (type)
Concrete Barrier Transition Section 32-Inch	Concrete Barrier Transition (type)

Replace standard spec 501.4 and 501.5 with the following:

501.4 Measurement

- (1) The department will measure Ice Hot Weather Concreting by the pound acceptably completed, measured only if the conditions prescribed in standard spec 501.3.8.2 are met.

501.5 Payment

- (1) The department will pay for the measured quantity at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
501.1000.S	Ice Hot Weather Concreting	LB

- (2) Payment for Ice Hot Weather Concreting is full compensation for ice used to cool concrete placed in hot weather as specified in standard spec 501.3.8.2.
- (3) The department will not pay directly for the concrete specified under this section. Concrete is incidental to the various bid items using it. Payment under those bid items includes providing all materials, including aggregates and associated aggregate source testing, cement, fly ash, slag, and admixtures; and for preparing, transporting, storing, protecting and curing concrete.
- (4) If required to remove and replace any concrete damaged by lack of proper protection. Perform this work at no expense to the department.

stp-501-010 (20210708)

90. Concrete Masonry Soldier Pile Footings, Item 502.0110.S.0761

A Description

This special provision describes furnishing and placing concrete into predrilled holes for soldier piles and installing soldier piles. Perform work conforming to standard spec 502.

B Materials

Provide and use concrete masonry for Concrete Masonry Soldier Pile Footings conforming to grade A as specified in standard spec 501. Perform QMP testing conforming to standard spec 716 for Class II Ancillary Concrete for all concrete masonry for Concrete Masonry Soldier Pile Footings.

C Construction

Before placing concrete masonry, give the engineer sufficient notice to allow inspection of the predrilled holes, soldier piles, and casting preparations. For concrete masonry soldier pile footings constructed without the use of slurry, no more than 3 inches of standing water is permitted in the bottom of the drilled hole before beginning soldier pile installation and immediately before placing concrete masonry in the hole around the soldier pile. If necessary, place up to 2 feet of concrete at the bottom of the hole to assist in aligning the soldier pile. Block or clamp the soldier pile in place at the ground surface before placing concrete.

For holes drilled or excavated without slurry, the department will allow the contractor to place concrete by free-falling the concrete from the ground surface down the shaft around the soldier pile. If temporary casing is used, begin placement of the concrete before removing the casing. Remove the casing while the concrete remains workable. For holes drilled or excavated using slurry, place concrete using a tremie method from the bottom of the shaft. Withdraw the tremie pipe slowly as the level of concrete rises in the shaft and never let the level of the tremie pipe outlet exceed the height of the slurry.

D Measurement

The department will measure Concrete Masonry Soldier Pile Footings by the cubic yard, acceptably completed. The department will only include material within the limits and in the places the plans show.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
502.0110.S.0761	Concrete Masonry Soldier Pile Footings	CY

Payment is full compensation for furnishing all materials, pumping, placing, QMP testing, finishing, curing, and protecting installation of soldier piles.

stp-502-030 (20210708)

91. Non-Shrink Grout, Item 502.0120.S.

A Description

This special provision describes furnishing and placing Non-Shrink Grout.

B Material

Furnish non-shrink grout which is quick-setting, with rapid strength gain, and high-bond strength. Grout shall not contain calcium chloride or admixture containing calcium chloride or other ingredient in sufficient quantity to cause corrosion to steel reinforcement. Mix grout just before use according to the manufacturer's instructions. Follow manufacturer's recommendation for dosage of corrosion inhibitor admixture.

Use structural non-shrink grout that meets a minimum compressive strength of 4,000 psi within 24 hours when tested as specified in AASHTO T 106. Meet all the requirements of AASHTO T 160 with the exception that the contractor-supplied cube molds will remain intact with a top firmly attached throughout the curing period. Use structural non-shrink grout with no expansion after seven days. Refer to Table 1 for structural non-shrink grout requirements.

Table 1 Structural Non-Shrink Grout

Properties ^[1]	Requirements	ASTM	AASHTO
Accelerated Weathering	As Specified in ASTM or AASHTO	C 666	T 260
Compressive Strength	>5,000 psi @ 28 days		T 106
Accepted Bond Strengths	>1,000 psi @ 24 Hours	C 882	
Test Medium	<3% White Utah Road Salt		T 161
Accepted Weight Loss	<15% @ 300 Cycles		T 161
Length Change	No expansion after 7 days		T 160

^[1] Certified test results from a private AASHTO accredited testing laboratory will suffice for acceptance.

C Construction

Place Non-Shrink Grout conforming to standard spec 501 and standard spec 502 and as the plans show.

D Measurement

The department will measure Non-Shrink Grout by the cubic foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
502.0120.S	Non-Shrink Grout	CF

Payment for Non-Shrink Grout is full compensation for providing all materials; placing, finishing, protecting and curing the Non-Shrink Grout.

stp-502-035 (20161130)

- 92. Temporary Shoring R-40-10, Item 511.1200.0010;
Temporary Shoring R-40-761, Item 511.1200.0761;
Temporary Shoring Left in Place B-40-57, Item 511.2200.0057;
Temporary Shoring Left in Place R-40-761, Item 511.2200.0761;
Temporary Shoring Left In Place IH 94 EB, Item 511.2300.0001;
Temporary Shoring Left In Place IH 94 WB, Item 511.2300.0002.**

A Description

This special provision describes designing and providing temporary shoring at locations the plans show.

B Materials

Provide a shoring design for each location where the plan requires temporary shoring. Conform to AASHTO Load and Resistance Factor Design Specifications and the WisDOT Bridge Manual. Design to address all limit states using a design life of 36 months or the project specific duration, whichever is greater. Have a professional engineer, registered in the state of Wisconsin and knowledgeable of the specific site conditions and requirements, verify the adequacy of the design. Submit one copy of each shoring design, signed and sealed by the same professional engineer verifying the design, to the engineer for incorporation into the permanent project record.

C Construction

Provide temporary shoring at each required location conforming to the design developed for that location as follows:

Under the Temporary Shoring (structure) bid items: for temporary shoring associated with structure ID numbers identified in the bid item supplemental descriptions.

Under the Temporary Shoring (location) bid items: for temporary shoring associated with roadway locations identified in the bid item supplemental descriptions.

Remove temporary shoring no longer needed unless the engineer allows it to remain in place. Under the left-in-place bid items, leave the shoring in place. Place backfill conforming to standard spec 206.3.13 in excavated space not occupied by the new permanent construction.

D Measurement

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.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
511.1200.0010	Temporary Shoring R-40-10	SF
511.1200.0761	Temporary Shoring R-40-761	SF
511.2200.0057	Temporary Shoring Left in Place B-40-57	SF
511.2200.0761	Temporary Shoring Left in Place B-40-761	SF
511.2300.0001	Temporary Shoring Left In Place IH 94 EB	SF
511.2300.0002	Temporary Shoring Left In Place IH 94 WB	SF

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 backfilling.

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

93. Railing Pipe (R-40-761) Item 513.2001.0761.

A Description

This special provision describes furnishing and installing steel pipe handrails in accordance with Section 513 of the standard specifications, as shown in the plans, and as hereinafter provided.

B Materials

B.1 Paint for Railing Pipe

Use one of the qualified paint sources and products given below with tie primer coat specifically intended for painting of galvanized surfaces. An equivalent system may be used with the written approval of the engineer.

Producer	Coat	Products	Dry Film Minimum Thickness (mils)	Minimum Time Between Coats (hours)
Sherwin Williams 1051 Perimeter Drive, Suite 710 Schaumburg, IL 60173 847.330.1562	Tie	Recoatable Epoxy Primer B67-5 Series/B67V5	2.0 to 4.0	6
	Top	Acrolon 218 HS Polyurethane, B65-650	2.0 to 4.0	NA
Carboline 350 Hanley Industrial St. Louis, MO 63144 314.644.1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Top	Carboline 133 LH	4	NA
Wasser Corporation 4118 B Place NW Suite B Auburn, WA 98001	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA

B.2 Color

The finished color for coating system for railing pipe shall match Federal Color 37038 – Black

C Construction

Delete paragraph 513.3.1(6) and replace with the following:

After fabrication, blast clean railing pipe assemblies per SSPC-SP 6 and galvanize according to ASTM A 123. Steel preparation includes the chamfering of sharp edges. All sharp edges shall be flattened by a single pass of a grinder or suitable device along the sharp edge. Condition any thermal cut edges before blast cleaning by shallow grinding or other cleaning to remove any hardened surface layer. Remove all evident steel defects exposed in accordance to AASHTO M 160 prior to blast cleaning.

After galvanizing, paint all exterior surface of railing pipe as hereinafter provided. All exterior galvanizing surfaces shall be cleaned per SSPC-SP1 to remove, chlorides, sulfates zinc salts, oil, dirt, organic matter and other contaminants. The cleaned surface should then be Brush Blast Cleaned per SSPC-SP7 to create a slight angular surface profile (1.0 – 1.5 mils) for adhesion. Blasting should not fracture the galvanized finish or remove any dry film thickness.

After cleaning provide a tie primer coat from an approved coating system that is specifically intended to be used on a galvanized surface. The tie coat shall etch the galvanized rail and prepare the surface for the topcoat. Apply a topcoat matching the specified color. The tie and topcoats should be of contrasting colors. Use a pre-approved topcoat that is resistant to the effects of the sun, and is suitable for use in a marine environment. Exercise care so as not to damage the painted surface during railing installation.

D (Vacant)

E Payment

Delete paragraph 513.5(2) and replace with the following:

Payment for Railing Pipe is full compensation for providing, fabricating transporting, and erecting the rail; for preparation, galvanizing, cleaning and painting; for providing and placing metal shims under the bases if required; for providing and placing the anchor bolts; and furnishing all labor, tools, equipment and incidentals necessary to complete the contract work.

94. Preparation and Coating of Top Flanges B-40-513_5, Item 517.0901.S.

A Description

This special provision describes thoroughly cleaning and coating the top surface and edges of the top flanges, removing loose paint, rust, mill scale, dirt, oil, grease, or other foreign substances until the specified finish is obtained.

B (Vacant)

C Construction

For top flanges and edges that have no paint on them and according to the department's Pre-Qualified Paint Systems for Structure Overcoating Cleaning and Priming, clean the top surface and edges of the top flanges and paint them with one coat of an approved zinc rich primer. Paint for Solvent Cleaning for Overcoat-minimum Cleaning (SP-1) is not allowed.

For top flanges and edges that have paint on them and according to the department's Pre-Qualified Paint Systems for Structure Overcoating Cleaning and Priming, clean all areas of rust and loose paint on the top surface and edges of the top flanges. Wash the top surface and edges of the top flanges and paint them with one coat of an approved zinc-rich primer according to paint manufacture's recommendations. If flash rusting occurs before the application of the primer, stop painting application, remove the flash rusting and paint cleaned surface. Paint for Solvent Cleaning for Overcoat-minimum Cleaning (SP-1) is not allowed.

Where plans call for the cleaning of other painted structural steel including hanger assemblies, bearings, field splices, and connections, clean areas of loose paint and rust according to the department's Pre-Qualified Paint Systems for Structure Overcoating Cleaning and Priming, or and according to paint manufacture's cleaning recommendations. Sound paint need not be removed with the exception of an area 12 inch on either side of hanger assembly centerlines. Clean this area to base metal according to the paint manufacture's cleaning recommendations and paint them one coat of an approved zinc-rich

primer according to paint manufacture's recommendations. Paint for Solvent Cleaning for Overcoat-minimum Cleaning (SP-1) is not allowed.

For areas of exposed steel members that are to be imbedded in new concrete and according to the department's Pre-Qualified Paint Systems for Structure Overcoating Cleaning and Priming, thoroughly clean the surface area of exposed steel members that are to be imbedded in the new concrete and solvent wash and paint one coat of an approved zinc rich primer according to paint manufacture's recommendations to these areas. Paint for Solvent Cleaning for Overcoat-minimum Cleaning (SP-1) is not allowed.

According to the approved project specific hazardous material containment plan, furnish and erect tarpaulins or other materials to collect all of the spent paint containing material resulting from blasting or hand and power tool cleaning and coating. Minimize dust during all clean-up activities. Collect and store waste material at the end of each work day or more often if needed. Store waste materials in the hazardous waste containers provided. Lock and secure all waste containers at the end of each work day. Cover containers at all times except when adding or removing waste material. Store the containers in an accessible and secured area, not located in a storm water runoff course, flood plain or exposed to standing water. Transportation and disposal of such waste material will be the responsibility of the department.

Damage to existing painted surfaces as a result of construction operations, shall be restored to the approval of the engineer at the contractor's expense.

D Measurement

The department will measure Preparation and Coating of Top Flanges (Structure #) as a single unit for each structure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.0901.S	Preparation and Coating of Top Flanges B-40-513_5	EACH

Payment is full compensation for preparing and cleaning the designated surfaces; and for furnishing and applying the coating.

stp-517-010 (20210708)

95. Negative Pressure Containment and Collection of Waste Materials, B-40-513_5, Item 517.4501.S.

A Description

This special provision describes providing a dust collector to maintain a negative air pressure in the enclosure; furnishing and erecting enclosures as required to contain, collect and store waste material resulting from the preparation of steel surfaces for painting, and repainting, including collection of such waste material, and labeling and storing waste material in approved hazardous waste containers.

B (Vacant)

C Construction

Erect an enclosure to completely enclose (surround) the blasting operations. The ground, slope paving, or roadway cannot be used as the bottom of the enclosure unless covered by approved containment materials. So that there are no visible emissions to the air or ground or water, design, erect, operate, maintain and disassemble the enclosures in such a manner to effectively contain and collect dust and waste materials resulting from surface preparation and paint over spray. Suspend all enclosures over water from the structure or as approved by the engineer.

Construct the enclosure of flexible materials such as tarpaulins or of rigid materials such as plywood, or of a combination of flexible and rigid materials and meet SSPC Guide 6 requirements with Level 1 emissions. Systems manufactured and provided by Eagle Industries, Detroit Tarps, or equal, are preferred. The tarpaulins shall be a non-permeable material, either as part of the tarp system or have a separate non-permeable lining. Maintain all materials free of tears, cuts or holes. The vertical sides of the enclosure shall extend from the bottom of the deck down to the level of the covered work platform or covered barge where used for structures over water and shall be fastened securely to those levels to prevent the wind from

lifting them. Bulkheads are required between beams to enclose the blasting area as approved by the engineer. Where bulkheads are required, construct them of plywood and properly seal them. To prevent spent materials and paint over spray from escaping the enclosed area, overlap and fasten together all seams. Place groundcovers under all equipment before operations or as approved by the engineer.

To allow proper cleaning, inspection of structures or equipment, and painting, provide safe adequate artificial lighting in areas where natural light is inadequate.

Provide a dust collector so that there are no visible emissions outside of the enclosure and so that a negative air pressure inside the enclosure is maintained. The dust collector shall be sized to maintain the minimum air flow based on the cross-sectional area of the enclosure.

A combination of positive air input and negative air pressure may be needed to maintain the minimum airflow within the enclosure.

Filter all air exhausted from the enclosure to create a negative pressure within the enclosure so as to remove all hazardous and other particulate matter.

After all debris has been removed and all painting has been approved in the containment area is complete, remove containment according to SSPC Guide 6.

As a safety factor for structures over water, provide for scum control. Provide a plan for corrective measures to mitigate scum forming and list the procedures, labor and equipment needed to assure compliance. Effectively contain the scum that forms on the water and does not sink in place from moving upstream or downstream by the use of floating boom devices.

If in the use of floating boom devices, the scum tends to collect at the devices, contain, collect, store the scum, and do not allow it to travel upstream or downstream beyond the devices. Remove the scum at least once a day or more often if needed.

Collect and store at the bridge site for disposal all waste material or scum collected by this operation, or any that may have fallen onto the ground tarps. Collect and store all waste material and scum at the end of each workday or more often if needed. Storage shall be in provided hazardous waste containers. Label each container as it is filled, using the labels provided by the Hazardous Waste Disposal contractor. Check the label and ensure that the project ID, bridge number and EPA ID match the structure. Fill in the generation date when the first material is placed in the container. Secure all containers at the end of each workday. Keep the containers covered at all times except to add or remove waste material. Store the containers in an accessible and secured area, not located in a storm water runoff course, flood plain, or exposed to standing water.

In a separate operation, recover the recyclable abrasive for future application, and collect the paint and/or corrosion particles for disposal.

D Measurement

The department will measure Negative Pressure Containment and Collection of Waste Materials (Structure) as a single unit for each structure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.4501.S	Negative Pressure Containment and Collection of Waste Materials B-40-513_5	EACH

Payment is full compensation for designing, erecting, operating, maintaining, and disassembling the containment devices; providing negative pressure exhaust ventilation; collecting, labeling, and for storing spent materials in provided hazardous waste containers.

stp-517-065 (20230113)

96. Portable Decontamination Facility, Item 517.6001.S.

A Description

This special provision describes furnishing and maintaining weekly, or more often if needed, a single unit portable decontamination facility.

B Materials

Supply and operate all equipment according to OSHA.

Supply adequate heating equipment with the necessary fuel to maintain a minimum temperature of 68° F in the facility.

The portable decontamination facility shall consist of a separate "Dirty Room", "Shower Room" and "Clean Room". The facility shall be constructed so as to permit use by either sex. The facility shall have adequate ventilation.

The "Dirty Room" shall have appropriately marked containers for disposable garments, clothing that requires laundering, worker shoes, and any other related equipment. Each container shall be lined with poly bags for transporting clothing, or for disposal. Benches shall be provided for personnel.

The "Shower Room" shall include self-contained individual showering stalls that are stable and well secured to the facility. Provide showers with a continuous supply of potable hot and cold water. The wastewater must be retained for filtration, treatment, and/or for proper disposal.

The "Clean Room" shall be equipped with secure storage facilities for street clothes and separate storage facilities for protective clothing. The lockers shall be sized to store clothing, valuables and other personal belongings for each worker. Benches shall be provided for personnel.

Supply a separate hand wash facility, either attached to the decontamination facility or outside the containment.

C Construction

Properly contain, store, and dispose of the wastewater.

D Measurement

The department will measure Portable Decontamination Facility by each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.6001.S	Portable Decontamination Facility	EACH

Payment is full compensation for furnishing and maintaining a portable decontamination facility.

stp-517-060 (20230113)

97. Fence Safety, Item 616.0700.S.

A Description

This special provision describes providing plastic fence at locations the plans show.

B Materials

Furnish notched conventional metal "T" or "U" shaped fence posts.

Furnish fence fabric meeting the following requirements.

Color:	International orange (UV stabilized)
Roll Height:	4 feet
Mesh Opening:	1 inch min to 3-inch max
Resin/Construction:	High density polyethylene mesh
Tensile Yield:	Avg. 2000 lb per 4 ft. width (ASTM D638)
Ultimate Tensile Strength:	Avg. 3000 lb per 4 ft. width (ASTM D638)
Elongation at Break (%):	Greater than 100% (ASTM D638)
Chemical Resistance:	Inert to most chemicals and acids

C Construction

Drive posts into the ground 12 to 18 inches. Space posts at 7 feet.

Use a minimum of three wire ties to secure the fence at each post. Weave tension wire through the top row of strands to provide a top stringer that prevents sagging.

Overlap two rolls at a post and secure with wire ties.

D Measurement

The department will measure Fence Safety by the linear foot along the base of the fence, center-to-center of posts, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
616.0700.S	Fence Safety	LF

Payment is full compensation for furnishing and installing fence and posts; maintaining the fence and posts in satisfactory condition; and for removing and disposing of fence and posts at project completion.

stp-616-030 (20160607)

98. Structure Repainting Recycled Abrasive B-40-513_5, Item 517.1801.S.

A Description

This special provision describes surface preparation and painting of the metal surfaces according to the manufacturer's recommendations as modified in this special provision.

A.1 Areas to be Cleaned and Painted

All structural metal surfaces of:

1. Structure B-40-513_5 2,580 SF.

Areas are approximate and given for informational purposes only.

B Materials

B.1 Coating System

Furnish a complete coating system from the department's approved list for "Structure Repainting Recycle Abrasive Structure". The color for the finish coating material shall match the color number the plans show according to Federal Standard Number 595. Supply the engineer with the product data sheets for approval before any coating is applied. The product data sheets shall indicate the mixing and thinning directions, the recommended spray nozzles and pressures, and the minimum drying time between coats.

The color of the primer must be such that a definite contrast between it and the color of the blasted steel is readily apparent. There shall be a color contrast between all subsequent coats for the paint system selected. Submit color samples of the primer and all coats to the engineer for approval before any application of paint.

C Construction

C.1 Surface Preparation

Before blast cleaning, solvent clean all surfaces to be coated according to SSPC-SP1.

All metal surfaces must be blast cleaned according to SSPC-SP10 and verified before painting.

Upon completion of surface preparation, test representative surfaces, which were previously rusted (i.e. pitted steel) for the presence of residual chloride. Perform Surface Contamination Tests (SCAT) according to the manufacturer's recommendations. The tests must be witnessed by the engineer. If chlorides are detected at levels greater than 7ug/cm², continue to clean the affected areas until results are below the specified limit. Submit anticipated testing frequencies and chloride remediation methods to the Engineer for review and approval.

Apply the prime coat the same day that the metal surfaces receive the No. 10 blast or re-blast before application. Cleaned surfaces shall be of the specified condition immediately before paint application. If rust bloom occurs before applying the primer, stop the painting operation in the area of the rust bloom and re-blast and clean the area to SSPC SP-10 before applying the primer.

The steel grit and any associated equipment brought to the site and used for blast cleaning shall be clean. Remove immediately dirty grit or equipment brought to the site at no expense to the department. Furnish an abrasive that has a gradation such that it will produce a uniform surface profile between 1 to 3 mils on the steel surface, as measured according to ISO 8503-5.

The abrasive blasting and recovery system shall be a completely integrated self-contained system for abrasive blasting and recovery. It shall be an open blast and recovery system that will allow no emissions from the recovery operation. The recovery equipment shall be such that the amount of contaminants in the clean recycled steel grit shall be less than 1 percent by weight as per SSPC AB-2.

Remove by grinding all fins, tears, slivers, and burred or sharp edges that are present on any steel member, or that appear during the blasting operation, and re-blast the area to give a 1 to 3 mils surface profile.

Remove all spent material and paint residue from steel surfaces with a good commercial grade vacuum cleaner equipped with a brush-type cleaning tool, and test cleanliness according to ASTM D4285. The airline used for surface preparation shall have an in-line water trap and the air shall be free of oil and water as it leaves the airline.

Take care to protect freshly coated surfaces from subsequent blast cleaning operations. Thoroughly wire brush damaged primed surfaces with a non-rusting tool, or if visible rust occurs, re-blast to a near white condition. Clean and re-prime the brushed or blast cleaned surfaces according to this specification.

C.2 Coating Application

Apply paint according to the manufacturer's recommendations in a neat workmanlike manner. Paint application shall normally be by airless spray or inaccessible areas by brush, roller or other methods approved by the engineer.

The engineer may allow the use of conventional spray equipment after satisfactory demonstration by the contractor of the proper application technique and handling of that equipment.

Mix the paint or coatings according to the manufacturer's directions to a smooth lump-free consistency. Keep paint thoroughly mixed during the painting application.

After the inspector approves the entire cleaned surface to be coated, apply a prime coat uniformly to the entire surface. Either before or after applying the prime coat, brush or spray a stripe coat of primer on all plate edges, bolt heads, nuts, and washers. Apply succeeding coats as the product data sheet shows.

Remove all dry spray by vacuuming, wiping, or sanding if necessary.

If the application of the coating at the required thickness in one coat produces runs, bubbles, or sags; apply a "mist-coating" in multiple passes of the spray gun; separate the passes by several minutes. Where excessive coating thickness produces "mud-cracking", remove such coating back to soundly bonded coating and re-coat the area to the required thickness.

The resultant paint film shall be smooth and uniform, without skips or areas of excessive paint according to SSPC PA1.

The coating is supplied for normal use without thinning. If in cool weather it is necessary to thin the coating for proper application, thin according to the manufacturer's recommendations.

During surface preparation and coating application the ambient and steel temperature shall be between 39 degrees F and 100 degrees F. The steel temperature shall be at least 5 degrees F above the dew point temperature. (This requires the steel to be dry and free of any condensation or ice regardless of the actual temperature of the steel.) The relative humidity shall not exceed 85%. The manufacturer's ambient condition requirements must be followed if they are more stringent.

Paint thickness shall be within the requirements for a three coat paint system listed in the department's approved list for Structure Repainting Recycle Abrasive Structure and the paint system being used.

Time to recoat shall be according to the manufacturer's recommendations.

The dry film thickness will be determined by use of a magnetic film thickness gage. The gage shall be calibrated for dry film thickness measurement according to SSPC-PA 2. Dry film thickness in each area measured will be based on an average of three gage readings, after calibration of the gage to account for surface profile of the bare steel as a result of surface preparation.

D Measurement

The department will measure Structure Repainting Recycled Abrasive (Structure #) as a single unit for each structure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
517.1801.S	Structure Repainting Recycled Abrasive B-40-513_5	EACH

Payment is full compensation for preparing and cleaning the designated surfaces; furnishing and applying the paint; and for providing the listed equipment.

stp-517-050 (20210708)

99. Cover Plates Temporary, Item 611.8120.S.

A Description

This special provision describes providing and removing steel plates to cover and support asphaltic pavement and traffic loading at manholes, inlets and similar structures during milling and paving operations.

B Materials

Provide a 0.25 inch minimum thickness steel plate that extends to the outside edge of the existing masonry.

C (Vacant)

D Measurement

The department will measure Cover Plates Temporary as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
611.8120.S	Cover Plates Temporary	EACH

Payment is full compensation for furnishing, installing, and removing the cover plates.

The steel plates shall become the property of the contractor when no longer needed in the contract work.

stp-611-006 (20151210)

100. Connected Arrow Board, Item 643.0810.S.

A Description

This special provision describes providing, repositioning, operating, maintaining, monitoring, and removing connected arrow board(s) capable of reporting real-time work zone lane closure information to Wisconsin 511 and third-party vendors.

B Materials

Furnish items from the department's approved products list.

C Construction

C.1 General

Follow all requirements in Spec 643.3.

Place connected arrow board per plan or as the engineer directs.

Ensure the connected arrow board operates continuously when deployed on the project.

Ensure the connected arrow board and work zone location markers are from the same manufacturer.

Provide a local specialist to respond to emergency situations within 2 hours of being notified. Equip local specialist with sufficient resources to correct deficiencies in the connected work zone start and end location markers.

C.2 Testing and Configuration

Prior to deployment, test the connected arrow board with the engineer to ensure the device is showing in the WZDx Device Feed. Send an email to DOTBTOworkzone@dot.wi.gov to notify BTO that the devices have been turned on.

C.3 Programming

Connected arrow board may be switched between the following pattern displays per the plan:

- Blank
- Right Arrow Static
- Right Arrow Flashing
- Right Arrow Sequential
- Left Arrow Static
- Left Arrow Flashing
- Left Arrow Sequential

When the connected arrow board is not displaying a pattern, the display shall be blank and the connected arrow board transmits its status to the data feed. When a connected arrow board is switched to a pattern, the connected arrow board transmits its location and its current operating mode to the data feed.

The connected arrow board and the remote management software shall provide a public GeoJSON/API feed, updated at least every minute, compliant with FHWA's Work Zone Data Exchange (WZDx) v4.2 (<https://www.transportation.gov/av/data/wzdx>) Device Feed specification.

C.3 Reporting

If requested by the engineer, provide real-time status change alerts to a list of designated personnel via text and/or email. Send an alert each time a connected arrow board is switched between operating modes (e.g., each time a connected arrow board is switched between blank, flashing left arrow mode and flashing right arrow mode). Include the current operating mode, the previous operating mode, the date and time of the mode switch, and the location (latitude and longitude) of the device at the time of the mode switch in the alert.

D Measurement

The department will measure the connected arrow board by the day, acceptably completed, measured per roadway.

The department will not measure the connected arrow board on days it is not required.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
643.0810.S	Connected Arrow Board	DAY

Payment is full compensation for providing, repositioning, operating, maintaining, monitoring, testing, and removing the connected arrow board.

The department will deduct one day for each calendar day the connected work zone start and end location markers is required but out of service for more than 2 hours.

stp-643-012 (20250108)

101. Connected Work Zone Start and End Location Markers, Item 643.1220.S

A Description

This special provision describes providing, repositioning, operating, maintaining, monitoring, and removing connected work zone start and end location markers capable of reporting real-time work zone location information to Wisconsin 511 and third-party vendors.

B Materials

Furnish items from the department's approved products list.

C Construction

C.1 General

Follow all requirements in Spec 643.3.

Place work zone start location marker at the beginning of the work zone per plan or as the engineer directs. Clearly label the work zone start location marker so that it is easily distinguishable by field personnel.

Place work zone end location marker at the end of the work zone per plan or as the engineer directs. Clearly label the work zone end location marker so that it is easily distinguishable by field personnel.

Ensure the connected work zone start and end location markers operate continuously when deployed on the project.

Ensure the work zone location markers and connected arrow board are from the same manufacturer.

Provide a local specialist to respond to emergency situations within 2 hours of being notified. Equip local specialist with sufficient resources to correct deficiencies in the connected work zone start and end location markers.

C.2 Testing and Configuration

Prior to deployment, test the connected work zone start and end location markers with the engineer to ensure devices are showing in the WZDx Device Feed. Send an email to DOTBTOWorkzone@dot.wi.gov to notify BTO that the devices have been turned on.

C.3 Programming

When the work zone start location marker is switched to the ON mode, the begin location marker transmits to the data feed its location and identity as a work zone start location marker. The end location marker functions similarly.

The connected work zone start and end location markers and their remote management software shall provide a public GeoJSON/API feed, updated at least every minute, compliant with FHWA's Work Zone Data Exchange (WZDx) v4.2 (<https://www.transportation.gov/av/data/wzdx>) Device Feed specification.

Switch the work zone start and end location markers to OFF mode when temporary traffic control is removed, and the normal traveled way is restored.

C.4 Reporting

If requested by the engineer, provide real-time status change alerts to a list of designated personnel via text and/or email. Send an alert each time the connected work zone start and end location markers are switched between operating modes (e.g., each time a work zone start/end location marker is switched between ON mode and OFF mode). Include the date and time of the mode switch, and the location (latitude and longitude) of the device at the time of the mode switch in the alert.

D Measurement

The department will measure the connected work zone start and end location markers by the day, acceptably completed, measured per roadway.

The department will not measure the connected work zone start and end location markers on days they are not required.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
643.1220.S	Connected Work Zone Start and End Location Markers	DAY

Payment is full compensation for providing, repositioning, operating, maintaining, monitoring, testing, and removing the complete system consisting of connected work zone start and end location markers.

The department will deduct one day for each calendar day the connected work zone start and end location markers is required but out of service for more than two hours.

stp-643-122 (20250108)

102. Temporary Audible Message Devices, Item 644.1900.S.

A Description

This special provision describes providing, maintaining, and removing temporary audible message devices. These devices are used on temporary pedestrian facilities to guide individuals with sight disabilities.

B Materials

Furnish temporary audible message devices from the approved products lists.

C Construction

Provide and maintain temporary audible message device. Maintain and repair devices within two hours of being notified by the project engineer of an issue.

Contractors record messages as approved by the engineer.

Mount temporary audible message devices on drums, temporary sign supports, or other locations approved by the engineer. Locate motion detection areas that will be effective in activating the device to operate properly. Avoid locating motion detection areas that will cause activation by trees, traffic, or other known regular activity.

Move and adjust devices after disruptions by the work or the public.

Maintain devices in a working condition and replace batteries as needed. Replace any devices that are not working properly within 2 hours of being notified of an issue.

Use tamper-proof hardware for mounting.

D Measurement

The department will measure temporary audible message devices by the day, 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
644.1900.S	Temporary Audible Message Device	DAY

Payment is full compensation for providing, maintaining, and removing temporary audible message device.

The department will not pay for devices that are inoperable.

stp-644-190 (20250108)

103. Install Conduit Into Existing Item, Item 652.0700.S.

A Description

This special provision describes installing proposed conduits into an existing manhole, pull box, junction box, communication vault, or other structure.

B Materials

Use conduits, as provided and paid for under other items in this contract. Furnish backfill material, topsoil, fertilizer, seed, and mulch conforming to the standard spec.

C Construction

Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole, or holes, for entering conduits at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the respective drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

D Measurement

The department will measure Install Conduit Into Existing System by the unit, acceptably installed. Up to five conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of five, or conduits entering at significantly different entry points into the existing pull box, manhole, or junction box will constitute multiple units of payment.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
652.0700.S	Install Conduit Into Existing Item	EACH

Payment is full compensation for excavating, drilling holes; furnishing and installing all materials, including bricks, coarse aggregate, sand, bedding, and backfill; for excavating and backfilling; and for furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; and for making inspections.

stp-652-070 (20230629)

104. Luminaires Underdeck LED C, Item 659.1215

Append section 659.2 of the standard specifications with the following

- (2) Underdeck luminaires for the 32nd Street structure shall be 3000k.

105. Lamp, Ballast, LED, Switch Disposal by Contractor, Item 659.5000.S.

A Description

This special provision describes the detachment and packaging of lamps, ballasts, LEDs, and mercury containing switches (e.g., overhead roadway lighting, underdeck bridge, wall packs, pedestrian signals, traffic control stop lights and warning flashers, fluorescent bulbs, and thermostats) removed under this contract for disposal as hazardous materials.

For Lamp, Ballast, LED, Switch Disposal by Contractor, coordinate removal from the work site by the department's hazardous waste disposal vendor. Disposal will be billed to the department by the hazardous waste disposal vendor.

B Materials

B.1 Disposal by Contractor

Items removed under this contract will be considered the property of the department for waste generator identification. The contractor is responsible for coordinating with the department's hazardous waste vendor for disposal:

<https://wisconsin.gov/Documents/doing-business/eng-consultants/cnslt-rsrcs/environment/hazwaste-contacts.pdf>

B.2 Disposal by Department (Vacant)

C Construction

C.1 Removal

Arrange for the de-energizing of luminaires after receiving approval from the engineer that the existing luminaires can be removed. Do not remove luminaires that cannot be replaced with proposed LED units and operational within the same workday. The new LED units need to be operational prior to sunset of the same workday.

Detach and remove luminaires and lamps from the existing traffic signal poles or respective structure. Avoid breaking fixtures whenever possible.

Lamps, ballasts, LED, and switches will become property of the department, and will be disposed of in an environmentally sound manner.

C.2 Packaging of Hazardous Materials

Provide a secure, level location removed from the travelled way for storage of the material for disposal.

Pack intact fixtures in the packaging of the new lamps used to replace them, or packaging affording the equivalent protection. Place in full, closed stackable cartons.

Pile cartons no more than four high if palletized and secure cartons with shrink wrap to prevent shifting or falling of the loads. Clearly mark each pallet with the words "Universal Waste Lamps" or "Universal Waste Ballasts", the date, and the number of fixtures on each pallet.

Pack broken fixtures into (min.) 6 mil thick plastic bags and place inside sturdy cardboard boxes or the equivalent. Mark the outer packaging with the term "Broken Fixtures/Lamps", the date and the number of broken fixtures clearly marked on the box.

The hazardous waste vendor will not accept fixtures improperly packaged. The vendor will reject any fixtures not removed as part of a contract pay item or otherwise required under this contract.

Pack ballasts and mercury containing switches in appropriate containers.

C.3 Disposal by Contractor

Complete the lamp and ballast inventory (<https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnsit-rsrces/environment/dotlampballastinventory.dotx>) and contact the hazardous waste vendor to coordinate pickup and disposal at a location specified by the contractor. Consolidate all pallets and boxes from one project at a single location. Contact the hazardous waste vendor to set up an appointment for pickup. The hazardous waste vendor requires a minimum of one week advance notice to schedule pickup.

C.4 Disposal by Department (Vacant)

D Measurement

The department will measure Lamp, Ballast, LED, Switch Disposal by Contractor as each individual unit removed and received by the hazardous waste vendor, properly packaged and acceptably completed, matching the total number of units provided on the inventory form. The department will not measure broken fixtures that exceed a total of 10 percent of all fixtures to be disposed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
659.5000.S	Lamp, Ballast, LED, Switch Disposal by Contractor	EACH

Payment for Lamp, Ballast, LED, Switch Disposal by Contractor is full compensation for detachment, handling, packaging, labeling and scheduling disposal with the hazardous waste vendor; and scrapping and disposal of all other materials.

106. Intelligent Transportation Systems (ITS) – Control of Materials.

Standard spec 106.2 – Supply Source and Quality

Add the following to standard spec 106.2:

The department will furnish a portion of equipment to be installed by the contractor. This department-furnished equipment includes the following:

Department-Furnished Items
36-Count Fiber Optic Cable
Fiber Optic Splice Enclosures

Pick-up small department-furnished equipment, such as communications devices, cameras, and controllers, from the department's Traffic Management Center (TMC), 433 W. St. Paul Ave., Milwaukee, WI 53203 at a mutually agreed upon time during normal state office hours. Contact the Statewide ITS Engineer, Dean Beekman at (414) 227-2154 to coordinate pick-up of equipment.

Pick up cabinets and solar power systems, including batteries, at the department's TMC equipment storage facility at 633 W. Wisconsin Ave., Milwaukee, WI 53203 at a mutually agreed upon time during normal state office hours. Contact Dean Beekman to coordinate pick-up of equipment.

Large department-furnished equipment, such as camera poles and dynamic message signs will be delivered by the supplier to a contractor-controlled site identified by the contractor. Delivery will not necessarily be in a "just in time" manner. Store the equipment until field installation.

Within two weeks of Notice to Proceed, contact the engineer and Dean Beekman. Provide the address and contact information for the contractor-controlled location for delivery and the desired delivery schedule for the large state-furnished materials.

Transportation of the equipment between the electric shop and the field or interim locations are the responsibility of the contractor.

Standard spec 106.3 – Approval of Materials

Add the following to standard spec 106.3:

Design/Shop Drawings

Before the purchase and/or fabrication of any of the components listed herein, and for any non-catalog item shown on the Material and Equipment List specified above, and no more than 30 days after notice to proceed, submit five copies of design drawings and shop drawings, as required, to the department for review. The items and the drawings that represent them shall meet the requirements of the standard specifications.

Design drawing submissions shall consist of signed and certified designs, design drawings, calculations, and material specifications for required items.

Shop drawings will be required for, but not limited to the following:

1. Mounting assemblies for the vehicle speed and classification sensors, including their attachment to the structure.
2. Mounting LED warning signs to the sign structure.
3. Mounting detail for dynamic message signs.
4. Any contractor-designed structure or foundation.

The department will complete its review of the material within 30 days from the date of receipt of the submission, unless otherwise specified. The department will advise the contractor, in writing, as to the acceptability of the material submitted. The department may determine that if no exceptions were taken for the item, it is approved, and no further action is required by the contractor; or the item may be partially or totally rejected, in which case modify and/or amend the submittal as required by the department and resubmit the item within 14 days. At this time, the review and approval cycle described above will begin again.

stp-670-005 (20230629)

107. Intelligent Transportation Systems - General Requirements.

A Description

A.1 General

This special provision describes providing elements for an Intelligent Transportation System (ITS) in or along the existing roadway as the plans show.

Unusual aspects of this project include:

1. The project includes working on cables and equipment that are carrying data between roadside equipment and the department's Traffic Management Center (TMC). Interruption of this service is not expected to perform this work. If an interruption is determined necessary, it must be done on a weekend, and must be done in a way that minimizes communication outages for the existing equipment. Notify the department's TMC at least 48 hours in advance of the planned interruption.
2. The department will furnish some of the equipment to be installed. Make a reasonable effort to discover defects in that equipment before installing it.

A.2 Surge Protection

Equip every ungrounded conductor wire entering or leaving any equipment cabinet with a surge protector. For purposes of this section, multiple cabinets on a single pole or foundation are considered a single cabinet.

B Materials

B.1 General

Only furnish equipment and component parts for this work that are new and have high quality workmanship. All controls, indicators, and connectors shall be clearly and permanently labeled in a manner approved by the engineer. All equipment of each type shall be identical.

All electrical equipment shall conform to the standards and requirements of the Wisconsin Electrical Code, the National Electrical Manufacturers Association (NEMA), National Electric Safety Council (NESC), Underwriter's Laboratory Inc. (UL) or the Electronic Industries Association (EIA), when applicable. All materials and workmanship shall conform to the requirements of the National Electrical Code (NEC), Rural Electrification Administration (REA), Standards of the American Society for Testing and Materials (ASTM), American Association of State Highway and Transportation Officials (AASHTO), requirements of the plans these special provisions, the standard specifications, and to any other codes, standards, or ordinances that may apply. All system wiring, conduit, grounding hardware and circuit breakers shall be in conformance with the National Electrical Code. Whenever reference is made to any of the standards mentioned, the reference shall be considered to mean the code, ordinance, or standard that is in effect at the time of the bid advertisement.

B.2 Outdoor Equipment

All conductive connectors, pins (except pins connected by soldering), and socket contacts shall be gold plated. Acrylic conformal coating shall protect each circuit board side that has conductive traces. Except for integrated circuits containing custom firmware, all components shall be soldered to the printed circuit board.

To prevent galvanic corrosion, all connections between dissimilar metals shall incorporate a means of keeping moisture out of the connection. Where the connection need not conduct electricity, interpose a non-absorbing, inert material or washer between the dissimilar metals. Use nonconductive liners and washers to insulate fasteners from dissimilar metals. Where the connection must conduct electricity, use a conductive sealant between the dissimilar metals. Alternatively, use an insulating gasket and a bond wire connecting the two metal parts.

B.3 Custom Equipment

Equipment that is not part of the manufacturer's standard product line, or that is made or modified specifically for this project, shall conform to the following requirements:

Where practical, electronics shall be modular plug-in assemblies to facilitate maintenance. Such assemblies shall be keyed to prevent incorrect insertion of modules into sockets.

All components shall be available from multiple manufacturers as part of the manufacturers' standard product lines. All must be clearly labeled with the value, part number, tolerance, or other information sufficient to enable a technician to order an exact replacement part.

Lamps used for indicator purposes shall be light-emitting diodes.

The printed circuit boards shall be composed of "two-ounce" copper on 1/16 inch thick fiberglass epoxy or equivalent type construction. Holes that carry electrical connections from one side of the boards to the other shall be completely plated through. Multilayer printed circuit boards shall not be used. The name or reference number used for the board in the drawings and maintenance manuals supplied to the department shall be permanently affixed to each board.

All components shall be mounted so that the identifying markings are visible without moving or removing any part, if practical.

B.4 Environmental Conditions

Equipment shall continue to operate as specified under the following ranges of environmental conditions, except as noted in the specifications for individual pieces of equipment.

1. **Vibration and Shock:** Vehicle speed and classification sensors and any other equipment mounted atop poles or on structures shall not be impaired by the continuous vibration caused by winds (up to 90 mph with a 30 percent gust factor) and traffic.
2. **Duty Cycle:** Continuous
3. **Electromagnetic Radiation:** The equipment shall not be impaired by ambient electrical or magnetic fields, such as those caused by power lines, transformers, and motors. The equipment shall not radiate signals that adversely affect other equipment.
4. **Electrical Power:**
 - 4.1. **Operating power:** The equipment shall operate on 120-volts, 60-Hz, single-phase unless otherwise specified. It shall conform to its specified performance requirements when the input voltage varies from 89 to 135 volts and the frequency varies +3 Hz.
 - 4.2. **High frequency interference:** The equipment operation shall be unaffected by power supply voltage spikes of up to 150 volts in amplitude and 10 microseconds duration.
 - 4.3. **Line voltage transients:** The equipment operation shall be unaffected by voltage transients of plus or minus 20 percent of nominal line voltage for a maximum duration of 50 milliseconds. Equipment in the field shall meet the power service transient requirements of NEMA Standard TS-2 when connected to the surge protectors in the cabinets.
5. **Temperature and Humidity:**
 - 5.1. **Field equipment:** Equipment in the field shall meet the temperature and humidity requirements of NEMA Standard TS-2. Liquid crystal displays shall be undamaged by temperatures as high as 165 degrees F, and shall produce a usable display at temperatures up to 120 degrees F.
 - 5.2. **Equipment in Controlled Environments:** shall operate normally at any combination of temperatures between 50 degrees F and 100 degrees F, and humidity's between 5 percent and 90 percent, non-condensing, and with a temperature gradient of 9 degrees F per hour.

B.5 Patch Cables and Wiring

All cables and wiring between devices installed in a single cabinet, or in separate cabinets sharing a single concrete base, will be considered incidental to the installation of the devices and no separate payment will be made for them. It is anticipated that this will include fiber optic patch cables between termination panels and Ethernet switches, 10 / 100 MBPS Ethernet cables, RS-232 cables between individual devices and terminal servers, and power cables between individual devices and power sources within the cabinets.

B.6 Surge Protection

Low-voltage signal pairs, including twisted pair communication cable entering each cabinet shall be protected by two-stage, plug-in surge protectors and shall be installed on both ends of camera control cables. The protectors shall meet or exceed the following minimum requirements:

1. The protectors shall suppress a peak surge current of up to 10k amps.
2. The protectors shall have a response time less than one nanosecond.
3. The protector shall clamp the voltage between the two wires at a voltage that is no more than twice the peak signal voltage and clamp the voltage between each wire and ground at 50 volts.
4. The first stage of protection shall be a three-element gas discharge tube, and the second stage shall consist of silicon clamping devices.
5. The protector shall also contain a resettable fuse (PTC) to protect against excessive current.
6. There shall be no more than two pairs per protector.
7. It shall be possible to replace the protector without using tools.

Cables carrying power to curve signs shall be protected at the cabinet by grounded metal oxide varistors of appropriate voltages. The varistors must be at least 0.8 inch in diameter.

C Construction

C.1 Thread Protection

Provide rust, corrosion, and anti-seize protection at all thread assemblies of metallic parts by coating (non-spray) the mating surfaces with an approved compound. Failure to use an approved compound will result in no payment for the items to which coating was to have been applied.

C.2 Cable Installation

When installing new cables into conduits containing existing cables, remove the existing cables and reinstall the existing cables simultaneously with the new cables. Take every precaution necessary to protect the existing cables. In the event of avoidable damage to the existing cables, replace all damaged cables, in-kind, at no additional expense to the department. When cables are pulled into conduit, use a cable pulling lubricant approved by the cable manufacturer. Submit documentation supporting manufacturer approval of the lubricant to the engineer.

C.3 Wiring

Every conductor, except a conductor contained entirely within a single piece of equipment, must terminate either in a connector or on a terminal block. Provide and install the connectors and terminal blocks where needed, without separate payment. Use approved splice kits instead of connectors and terminal blocks for underground power cable splices.

Permanently label and key connectors to preclude improper connection. Obtain prior engineer approval for labeling methods before use.

Terminal blocks must be affixed to panels that permanently identify the block and what wire connects to each terminal. This may be accomplished by silk screening or by installing a laminated printed card under the terminal block, with the labels on portions of the card that extend beyond the block. Installation of terminal blocks by drilling holes in the exterior wall of the cabinet is not acceptable.

Use barriers to protect personnel from accidental contact with all dangerous voltages.

Do not install conductors carrying AC power in the same wiring harness as conductors carrying control or communication signals.

Arrange wiring, including fiber optic pigtails, so that any removable assembly can be removed without disturbing wiring that is not associated with the assembly being removed.

Communication and control cables may not be spliced underground, except where indicated on the plans.

Cables in the Traffic Management Center (TMC) or in communication hubs, which are not contained within a single cabinet, shall have at least 10 feet of slack.

C.4 System Operations

If the contractor's operations unexpectedly interrupt Intelligent Transportation Systems (ITS) service, notify the engineer immediately and restore service within 24 hours. Repair all damaged facilities to the condition existing before the interruption. If service is not restored within 24 hours, the department may restore service to any operating device and deduct restoration costs from payments due the contractor.

C.5 Surge Protection

Arrange the equipment and cabinet wiring to minimize the distance between each conductor's point of entry and its protector. Locate the protector as far as possible from electronic equipment. Ensure that all wiring between the surge protectors and the point of entry is free from sharp bends.

D Measurement

The department will not measure the work performed under this special provision.

E Payment

The department will pay for the work performed under this special provision under the contract ITS bid items.

stp-670-010 (20230629)

108. Temporary Traffic Signals for Intersections W St Paul Ave & N 27th St Left in Place, Item 661.0201.3101.

Replace 661.1(1) of the standard specifications with the following:

- (1) This section describes furnishing, installing, maintaining, and surrendering temporary traffic signals. The complete temporary traffic signal installation at the intersection of W St Paul Ave & N 27th St shall be surrendered to the contractor for Project I.D. 1060-27-72. The contractor shall provide all documentation related to the monthly span wire height checks as well as all records related to maintenance performed on the temporary traffic signal installations to the engineer prior to surrendering the temporary traffic signals.

Replace 661.2.1(1) of the standard specifications with the following:

- (1) Furnish control cabinet, control equipment, and signal controller. The cabinet must be equipped with a 6-circuit Isotel independent of the GFI receptacles. Provide a cabinet with a Corbin #2 door lock and an access door that allows placing the controller in emergency flash. Provide keys to the access door to the engineer and law enforcement agencies as required. Also provide a manual control accessible by the police. Test traffic signal control cabinets before installation. The Department will provide the initial traffic signal timing for the controller, and the Department will be responsible for providing all subsequent signal timing changes. The contractor shall not implement timing changes during peak hours.

Replace 661.2.1(3) of the standard specifications with the following:

- (3) Provide the temporary electrical service for temporary traffic signals according to the requirements of the applicable electrical utility. Provide an affidavit to the electrical utility in a timely manner so the electrical utility can schedule service turn on. If the control cabinet is not mounted on the electrical service pole, add a second electrical service disconnect to the outside of the control cabinet for the convenience of emergency personnel. If required, install the electrical service. Electrical utility company service installation and energy costs will be billed to and paid for by the Department.

Append 661.2.1 of the standard specifications with the following:

- (6) Provide four R1-1F folding stop signs to be installed and surrendered as part of the temporary traffic signal installation.

Replace 661.3.1(2) of the standard specifications with the following:

- (2) Request a signal inspection of the completed temporary traffic signal installation to the engineer at least five working days prior to the time of the requested inspection. Notify the SE Region Electrical Field Unit at (414) 266-1170 to coordinate the inspection. The SE Region electrical personnel will perform the inspection.

Append 661.3.1.4 of the standard specifications with the following:

- (4) Arrange for every other week inspections with the engineer to check the height of the span wire above the roadways to ensure that the bottom of the traffic signal heads remain within the minimum and maximum heights allowed above the roadway. Make all height adjustments within 1-hour of an inspection indicating that adjustments are required. Notify the engineer in writing upon completion of all necessary adjustments. Maintain a written log to properly document the date of each biweekly (i.e. once every two weeks) inspection, the heights above the roadway, the roadway clearance after adjustments have been made, and acceptance by the engineer. Provide all documentation related to the biweekly span wire height checks as well as all records related to maintenance performed on the temporary traffic signal installations to the engineer.

Replace 661.3.2.6(2)-(5) of the standard specifications with the following:

- (1) Before activating the temporary traffic signal, verify the signal indications and operation of the signal to the engineer. The temporary traffic signal shall be in flash for 3 working days (excluding Holidays, Saturday and Sunday) prior to the implementation of the first timing plan. The mainline (W St Paul Ave) will be flashing yellow and side street (N 27th St) will be flashing red. The operation shall coincide with temporary traffic signal plans.
- (2) Upon completion of project, the contractor for Project I.D. 1060-27-72 shall have the opportunity to inspect the temporary traffic signal installations for defects and deficiencies. It shall be the contractor's responsibility to correct any defects or deficiencies prior to surrendering the temporary traffic signals to the appropriate contractor.

- (3) Surrender the temporary traffic signal installation, including the temporary EVP system, cables, and other assorted equipment, at the intersection of W St Paul Ave & N 27th St to the contractor for Project I.D. 1060-27-72 after all defects or deficiencies have been corrected.

Replace 661.3.2.7(2) of the standard specifications with the following:

- (2) Respond within one hour of notification to provide corrective action to any emergency such as but not limited to knockdowns, signal cable problems, and controller equipment failures. If equipment becomes damaged or faulty beyond repair, replace it within one working day. In order to fulfill this requirement, maintain, in stock, sufficient materials and equipment to provide repairs. Replace the traffic signal control equipment including the cabinet and cabinet accessories within 4 hours.

Replace 661.5(2) of the standard specifications with the following:

- (2) Payment for the Temporary Traffic Signals for Intersections bid item is full compensation for providing, maintaining, and repairing the complete temporary installation. Payment also includes the following:
 1. Furnishing and installing replacement equipment.
 2. Surrendering all equipment to the appropriate contractor after project completion.

Payment is full compensation for drilling holes; furnishing and installing all materials, including bricks, and coarse aggregate; for excavation, bedding, and backfilling, including any sand or other required materials; furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; for making inspections; for cleaning up and properly disposing of waste.

109. Ramp Closure Gates 32-FT, Item 662.1032.S; Ramp Closure Gates 37-FT, Item 662.1037.S.

A Description

This special provision describes providing freeway on-ramp closure gates on type 5 steel luminaire poles.

B Materials

B.1 General

Provide five user manuals and a listing of vendors and contact information for each manufactured component including flasher electrical components.

The engineer may allow alternates equal to specified manufactured components. The engineer may require plan detail modifications to accommodate alternates. The engineer may accept alternate arms or mounting adaptors only if the contractor can demonstrate that the department can easily remove and replace the arms.

B.2 Components

Furnish type 5 steel poles designed to carry twin 15-foot luminaire arms and conforming to standard spec 657 and with dimensions for acceptable installation of the ramp gate hardware as shown on the detail. Ensure a contiguous pole by eliminating the hand hole near base of pole, thus allowing uninhibited mounting of the gate pivot assembly.

Furnish galvanized steel nuts and bolts conforming to ASTM A307 except where designated as high strength (HS), conform to ASTM F3125. For the ramp closure gate locking mechanism, furnish a 3/4-inch handle nut.

Furnish grade A36 steel for the gate supports, gate pivot assembly, and associated hardware galvanized after fabrication by either a mechanical or hot-dip process. Grind welded connections, rough edges, and burrs smooth before galvanizing to ensure a finished appearance. Ensure that the galvanized coating conforms to ASTM A 153.

Provide aluminum/fiberglass gate arms of the nominal length the bid item indicates and conforming to plan dimensions. Cover gate arms on two sides with alternating red and white shop-applied type H reflective from the department's approved products list. Also provide a shear pin base that is the manufacturer's "permanent pivot" style.

Obtain components from:

B&B Roadway
15191 Hwy 243
Russellville, AL 35654
Tel: (888) 560-2060
Gate arm: Model MU605

Furnish a worm gear winch with a single line vertical lift capacity of 2000 lbs. Ensure that the winch has hardened steel gears, a handgrip, permanently lubricated bearings, a reinforced arc-welded reel assembly, and mounting plate. Ensure that the winch can be mounted to the winch mount plate shown on the construction details and the handgrip can be operated without conflict with the pole or ramp gate assembly. Furnish a 2-inch outdoor rated, rot resistant polyester strap for the connection between the worm gear winch and the gate arm pivot assembly.

C Construction

Provide ramp closure gate at the locations the plans show. Apply marine grade anti seize compound compound to all bolt threads and to the interface between the aluminum base and steel pole. The engineer may direct adjustment of the gate arm assembly to ensure the correct vertical and angular orientation of the completed closure gate.

Install structure identification plaques in the location the plan details show.

D Measurement

The department will measure the Ramp Closure Gates bid items as each individual installation, 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
662.1032.S	Ramp Closure Gates 32-FT	EACH
662.1037.S	Ramp Closure Gates 37-FT	EACH

Payment for the Ramp Closure Gate bid items is full compensation for providing ramp closure gates including support poles; for gate arm assemblies including guides, collars, and gate arms; and for structure identification plaques.

stp-662-005 (20191121)

110. Roadway Embankment, Item SPV.0035.0001.

A Description

This special provision describes placing in embankments and in miscellaneous backfills, material obtained under the bid items in the roadway and drainage excavation or excavation for structure sections; or material obtained off site as specified under these special provisions.

B Materials

B.1 Embankment

Furnish roadway embankment conforming with standard spec 207.2 except as follows:

Add the following to standard spec 207.2(1):

If the contractor utilizes offsite material to construct embankments, the material shall conform to standard spec 208 except as follows:

Delete standard spec 208.2.2(2).

C Construction

Construct roadway embankment according to standard spec 207.3 except as follows:

Add the following to standard spec 207.3.6:

Prior to placing any material for a succeeding layer, ensure the previous layer does not have excessive rutting, displacement, or distortion under the compacting or hauling equipment. If rutting, displacement, or distortion is observed, the contractor shall inform the engineer how yielding material will be addressed prior to continuing roadway embankment construction.

If off site material is utilized, construction must conform to standard spec 208.3.

Replace standard spec 205.3.2(4) with the following:

If placing embankment on side slopes 10 feet high or higher and steeper than one vertical to 3 horizontal, provide vertically-faced, horizontal benches at least 2 feet wide into the existing embankment slope every 2-foot of vertical height.

If constructing embankment on only one side of abutments, wing walls, or piers, construct the embankment so that the area immediately adjacent to the structure is not compacted in a manner that causes overturning of or excessive pressure against the structure. If constructing embankment on both sides of a concrete wall, pipe, or box type structure, construct the embankment so that the elevation on both sides of the structure is always approximately the same.

D Measurement

The department will measure Roadway Embankment without any correction for shrinkage or expansion factors by the cubic yard acceptably completed in its final location using the method of average end areas, except as follows:

- a) The engineer and contractor mutually agree to an alternative volume calculation method.
- b) If it is not possible to compute volumes of the various classes of roadway and drainage embankment by the method of average end areas due to erratic location of isolated deposits, the department may compute the volumes by three-dimensional measurements.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.0001	Roadway Embankment	CY

Payment is full compensation for furnishing offsite and onsite sources, for forming, compacting, shaping, sloping, trimming, finishing, and maintaining embankments. If offsite materials are utilized for roadway embankments, payment included full compensation for all items listed in standard spec 208.5 (2), for obtaining all required permits, and all other incidental work required under this section.

ASP-5 will be applied to this item, with a Fuel Usage Factor of 0.23.

111. Excavation, Hauling, and Reuse of Low-Level Petroleum Contaminated Soil, Item SPV.0035.0004.

A Description

A.1 General

This special provision describes excavating, relocating, and reusing low-level petroleum contaminated soil within the project limits or at a DNR approved off-site location.

Perform this work in accordance with the requirements of standard spec 205 and with pertinent parts of Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR 718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport impacted soil.

A.2 Notice to the Contractor – Impacted Soil Locations

The department completed testing for soil contamination at locations within this project where excavation is required. Testing indicated that low-level petroleum-contaminated soil is present at the following location on the WisDOT property at 2702 W. Greves St., Milwaukee, WI as shown on the plans:

- Station 2006+75 to 2013+25 (R-40-761 alignment) from 0 feet right of reference line to 160 feet right of reference line, from approximately 0 to 25 feet below grade (i.e. from the existing ground surface to the former ground surface of the Former Red Star Yeast property). Approximately 37,200 cubic yards (approximately 63,240 tons at an estimated 1.7 tons per cubic yard) of soil to be excavated from this area will be reused on the project as specified in Section A.3.

If other signs of contamination are encountered at this location or elsewhere on the project, terminate excavation activities in the area and notify the engineer.

A.3 Reuse of Low-Level Petroleum Contaminated Soils

Soil excavated from the location listed in A.2 is characterized as Low-Level Petroleum-Contaminated Soil and shall be reused as fill at the following locations:

- Station 15TEB+20 to 23TEB+00, from 50 feet right of reference line to 155 feet right of reference line (i.e. from south side of I-94 eastbound pavement widening lanes to the ditch between I-94 pavement widening and wall R-40-767).
- All un-used low-level petroleum contaminated soils will be stockpiled at 2401 W. St. Paul Avenue (i.e. south side of W. St. Paul Avenue between 25th Street and Greves Street).

Upon final placement of all reuse soil, the reuse soil shall be capped with new pavement for I-94 and Ramp LC or with a minimum of 18 inches of clay. The clay cap can be covered with additional fill material to bring the embankment surface to final grade. If at any time during the contract placement of reuse soil is halted for a period exceeding more than 60 consecutive days, an interim 18-inch clay cap shall be placed over the reuse fill material. Topsoil is not required on the interim clay cap. Topsoil, erosion mat, and seed the final embankment surface.

Soils that are reused as project fill should not contain crushed asphalt or other non-exempt solid wastes.

A.4 Excavation Management Plan Approval

The excavation management plan for this project has been designed to minimize the off-site disposal of impacted material. The excavation management plan, including these special provisions, has been developed in cooperation with the WDNR. The WDNR concurrence letter is on file at the Wisconsin Department of Transportation. For further information regarding previous investigation and remediation activities in these areas contact:

Name: Andrew Malsom
Address: 141 NW Barstow St., Waukesha, WI 53187-0798
Phone: (262) 548-6705
Fax: (262) 548-6891
E-mail: Andrew.Malsom@dot.wi.gov

A.5 Coordination

Coordinate work under this contract with the WisDOT BTS environmental consultant. Determine the environmental consultant by contacting the following at least 30 days prior to the pre-construction conference:

Consultant: TRC Environmental Corporation
Address: 6737 W. Washington St., Suite 3460, West Allis, WI 53214
Contact: Bryan Bergmann
Phone: (262) 901-2126 office, (262) 227-9210 cell
E-mail: bbergmann@trccompanines.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of low-level petroleum contaminated soil to be excavated and reused as fill based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Documenting that activities associated with management of low-level petroleum contaminated soil are in conformance with the low-level petroleum contaminated soil management methods for this project as specified herein; and

3. Obtaining the necessary approvals for reuse of low-level petroleum contaminated soils from the WDNR.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the area specified above to the environmental consultant. Also notify the environmental consultant at least 3 calendar days prior to commencement of excavation activities in the low-level petroleum-contaminated soil area.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the low-level petroleum-contaminated soil areas. Perform excavation work in this area on a continuous basis until excavation work is completed.

The environmental consultant will be responsible for obtaining the necessary approvals for reuse of the excavated low-level petroleum-contaminated soil from the WDNR. Do not transport soil offsite without prior approval from the environmental consultant.

A.6 Health and Safety Requirements

Add the following to standard spec 107.1:

During excavation activities, expect to encounter soil contaminated with gasoline, diesel fuel, fuel oil, or other petroleum related products. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each contaminated site location as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer before the start of work.

B (Vacant)

C Construction

Add the following to standard spec 205.3:

Control operations in the impacted area to minimize the quantity of low-level petroleum-contaminated soil excavated and hauled for reuse at the designated reuse location.

The environmental consultant will periodically evaluate soil excavated from the area specified above. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 20 cubic yards excavated.

Directly load and haul soils designated by the environmental consultant for reuse. Use loading and hauling practices that are appropriate to prevent any spills or releases of soil during transit. Prior to transport, sufficiently dewater soils designated for on-site reuse so as not to contain free liquids.

If dewatering is required in areas of known low-level petroleum-contaminated reuse soil, water generated from dewatering activities may contain petroleum compounds. Such water may require analytical testing, and with approval from the City of Milwaukee and the Milwaukee Metropolitan Sewerage District (MMSD) be discharged to the sanitary sewer as follows:

1. Meet all applicable requirements of the City of Milwaukee and the MMSD including the control of suspended solids. Perform all necessary monitoring to document compliance with the City of Milwaukee and the MMSD requirements. Furnish, install, operate, maintain, disassemble, and remove treatment equipment necessary to comply with the City of Milwaukee and the MMSD requirements.
2. Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities.

Groundwater with a petroleum sheen cannot be discharged to the sanitary sewer. If dewatering is necessary where the groundwater has a sheen on the surface, the water shall be pumped into a holding tank or tanker truck for off-site testing and disposal.

Notify the engineer of any dewatering activities. Contractor shall obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

Costs associated with excavation dewatering in contaminated areas are considered incidental to this pay item. The Wisconsin Department of Transportation will be the generator of regulated solid waste from this construction project.

D Measurement

The department will measure Excavation, Hauling, and Reuse of Low-Level Petroleum Contaminated Soil in cubic yards of low-level petroleum contaminated soil reused as documented by the engineer.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.0004	Excavation, Hauling, and Reuse of Low-Level Petroleum Contaminated Soil	CY

Payment is full compensation for excavating, segregating, loading, and hauling of low-level petroleum contaminated soil; obtaining solid waste collection and transportation service operating licenses; assisting in the collection soil samples for field evaluation; dewatering of soils before transport, if necessary; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Placing of low-level petroleum contaminated soil is paid for separately as Roadway Embankment.

~~stp-205-003 (20230113)~~

112. Clay Cap, Item SPV.0035.0005.

A Description

This special provision describes furnishing and installing the clay cap material to cap the low level petroleum contaminated soil material placed at the designated fill sites as shown in the plans.

B Materials

The clay material can be acquired on site or be furnished by the contractor from a borrow site. The contractor shall submit laboratory test results of the clay cap material from onsite or borrow source(s) documenting that the clay meets or exceeds the clay material specifications prior to the start of cap construction and prior to bringing borrow to the site. The laboratory tests shall be conducted on clay material from on site or borrow areas at the frequency listed below and be performed according to ASTM standard methods as listed below. The test results shall be submitted to the engineer for review and approval prior to construction. The following tests are required:

- A minimum of 50 percent by weight which passes the 200 sieve.
- Liquid Limit (LL): 22 percent or greater.
- Plasticity Index (PI): 12 percent or greater.

Clay not meeting these three requirements shall be removed and disposed of by the contractor without additional payment.

In addition to the three above testing requirements, the contractor shall provide additional test results for any clay furnished to be used for informational purposes. These testing results are listed below.

Reference standards are listed as follows:

American Society for Testing and Materials (ASTM):

- ASTM D698 Test for Moisture-Density Relations of Soils and Soil Aggregate Mixtures Using 5.5 lb Rammer and 12 in. Drop (Standard Proctor).
- ASTM D2922 Test for Density of Soil In Place by Nuclear Method (Shallow Depth).
- ASTM D1140 Test Method for Amount of Materials in Soils Finer than the No. 200 Sieve.
- ASTM D422 Method for Particle-Size Analysis of Soils.

- ASTM D4318 Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- ASTM D2487 Classification of Soils for Engineering Purposes.

Number of Required Tests

Test	One Borrow Source Only and Also For Onsite Clay	Multiple Borrow Sources	Minimum Requirement
Grain Size Analysis	3 (Total)	1 test/4,500 cy or less/site ^(a)	≥ 50% by Wt. Passing 200 Sieve
Hydrometer Analysis	3 (Total)	1 test/4,500 cy or less/site ^(a)	Info. Only
Atterberg Limits (ASTM D4318)	3 (Total)	1 test/2,250 cy or less/site ^(a)	LL ≥ 22% PI ≥ 12%
USCS Classification (ASTM D2487)	3 (Total)	1 test/2,250 cy or less/site ^(a)	Info. Only
Standard Proctor Analysis 5- Point Curve (Minimum) (ASTM D698)	2 (Total)	1 test/5,000 cy or less/site ^(b)	Info. Only

^(a) For each clay borrow site to be used, one test Grain Size and Hydrometer shall be performed and provided to engineer for each 4,500 cubic yards or less of clay to be obtained from each of the borrow sources. For each clay borrow site to be used, one Atterberg Limits and USCS Classification shall be performed and provided to engineer for each 2,250 cubic yards or less of clay to be obtained from each of the borrow sources.

^(b) For each clay borrow site to be used, one test shall be performed and provided to engineer for each 10,000 cubic yards or less of clay to be obtained from each of the borrow sources.

C Construction

C.1 Clay Cap Placement

C.1.2 Clay Cap

Before the waste is placed, the existing surface will need to be scarified to a 1-foot depth and re-compacted to at least 95 percent of the Standard Proctor (ASTM D-698) value for the soil at a moisture content between 90 percent to 105 percent of the optimum moisture content. Clay cap can only be placed after testing confirms that the subgrade has achieved the density and moisture content requirements

After the grading is complete, the contractor shall place and compact approved clay cap material a maximum of 6-inch lifts for a total compacted thickness of 24 inches.

Contractor shall notify the engineer at least three days prior to start of placing clay cap.

Lift thickness shall be 6 inches maximum after compaction.

Clay cap shall be 24 inches thick measured perpendicular to the surface.

Compact clay to a minimum of 95% Standard Proctor Maximum Density (ASTM D698) with a sheepsfoot roller or other suitable equipment.

Placement of each lift shall not proceed until all required clay testing and documentation has been completed for the previous lift.

The moisture content of the clay during placement shall be:

- No drier than 90 percent of the optimum moisture content as determined by ASTM D698.
- No wetter than 105 percent above the optimum moisture content as determined by ASTM D698.

Excessively dry or wet clay soil shall be properly moisture-conditioned to within the above range of values.

Provide all equipment necessary to adjust clay to the proper moisture content for compaction.

The contractor is responsible for construction of the clay cap per the plans. If the in-place clay cap fails to meet the requirements of this section, the contractor shall be responsible for the following:

- Removing and replacing or reworking any portion of the clay cap not meeting the project specifications until project specifications are met.
- The contractor shall not be compensated for removing, replacing and reworking clay cap not meeting the specification requirements.

C.1.3 Testing of Constructed Soils

As construction of the clay cap proceeds, the department will provide all required on-site quality control testing of installed materials as follows:

- Record thickness of clay cap.
- Density testing (ASTM D2922) on after the clay is placed and compacted. One test per lift (minimum) or one test for every 25,000 sq. foot of lift constructed, whichever is greater.
- HTCP certified person will perform all necessary sampling, testing, data analysis and documentation during all Clay Cap placement and compaction.
- One Standard Proctor (ATM D698) for each soil type used but no less than one Proctor analysis for each 5,000 cubic yards of clay placed.
- After the cap is placed and compacted, one Shelby tube sample and bulk sample shall be retrieved and analyzed for the following:
 - o Grain size distribution and hydrometer analysis.
 - o Moisture content.
 - o Dry density.
 - o Atterberg Limits.

The contractor shall provide the following:

- Access for on-site testing, inspection, and documentation.
- Machinery required to grade/blade density test locations.
- Machinery required to obtain undisturbed clay samples (i.e., with Shelby tubes).
- Replace and recompact clay material removed for testing purposes.

D Measurement

The department will measure Clay Cap by the cubic yard, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.0005	Clay Cap	CY

Payment is full compensation for furnishing, placing and compacting the clay cap.

**113. Lightweight Foamed Concrete Fill Grade 1, Item SPV.0035.0006;
Lightweight Foamed Concrete Fill Grade 2, Item SPV.0035.0007.**

A Description

A.1 General

This special provision describes designing, providing and placing Lightweight Foamed Concrete Fill, hereafter referred to as LFCF material, for backfill and embankments at locations designated on the plans.

A.2 Terms

Whenever in this article the following terms are used, the intent and meaning shall be interpreted as follows:

LFCF Manufacturer – The manufacturer of the foam agent used to make LFCF.

LFCF Installer – The subcontractor responsible for batching, and mixing the LFCF onsite, and placing the LFCF in accordance to the contract documents.

Contractor – General contractor as defined in the standard specifications.

B Materials

B.1 General

Furnish materials meeting the following requirements:

Portland Cement and Portland Pozzolan Cement	standard spec 501.2.1
Water	standard spec 501.2.4
Air Entraining Admixtures	standard spec 501.2.2
Water Reducing Admixtures	standard spec 501.2.3
Set Retarding Admixtures	standard spec 501.2.3
Curing Materials	standard spec 502.2.6
Fly Ash	standard spec 501.2.6
Damp Proofing	standard spec 516.2.1

Pozzolans and admixtures (for accelerating, water reducing, retaining, improving the bond, etc.) may only be used if specifically designated and approved by the LFCF manufacturer.

B.2 LFCF Material Specifications

The foaming agent from the selected manufacturer will produce a Lightweight Foamed Concrete Fill Material, complying with the specifications in Table 1 below.

Table 1 – LFCF Material Requirements

Property	Grade 1 (Fill Below Top 3 Feet of LFCF)	Grade 2 (Fill Within Top 3 Feet LFCF)	Test Method
Cast Density (after pumping)	36.0 - 40.0 pcf	44.0 - 50.0 pcf	ASTM C 796
Maximum Dry Density	34.0 pcf	46.0 pcf	ASTM C 796
Minimum Dry Density	30.0 pcf	40.0 pcf	ASTM C 796

Property	Grade 1 (Fill Below Top 3 Feet of LFCF)	Grade 2 (Fill Within Top 3 Feet LFCF)	Test Method
Unconfined Compressive Strength	20 psi minimum at 24 hours curing 70 psi minimum at 28 days curing	25 psi minimum at 24 hours curing 120 psi minimum at 28 days curing	ASTM C 495
Frost Heave	< 0.5 in	< 0.5 in	British Road Research Laboratory, Lab Report LR 90, 1967, by Croney, Jacobs. Sample @ 250 hr exposure, 4.5 inches high x 4-inch dia.
Freeze-Thaw Resistance – minimum cycles @ relative E = N/N ³ 70% per ASTM C666* as modified below	NA	Relative Young's Modulus, E ³ 70% at 100 cycles.	ASTM C 666* Procedure A as modified below
Coefficient of permeability	1 x 10 ⁻⁵ cm/sec 2.0 psi	1 x 10 ⁻⁵ cm/sec 2.0 psi	ASTM D 5084

B.3 Modifications to ASTM C 666

The ASTM C666 modifications are as follows:

- The temperature of the center of the specimens does not have to rise from 3°F to 37°F in less than 50% of the thaw cycle. Also, the temperature of the center of specimen does not have to drop from 37°F to 3°F in less than 50% of the freeze cycle.
- The freeze-thaw cycle does not have to be completed within the 4-hour maximum time limit. A complete freeze-thaw cycle for the 30 pcf material (3°F to 37°F and 37°F to 3°F including the requirement that it be completed in 50% of the time period) is estimated to last approximately 10 hours.

C Construction

C.1 Submittals

C.1.1 LFCF Placement Plan

Submit a LFCF quality control and placement plan. Place the abutment backfill and embankment in accordance to the information provided in the submitted, accepted plan. No later than two weeks prior to LFCF placement, submit the plan to the engineer for review and comment. Do not begin LFCF production before the plan has been reviewed and accepted by the engineer. The submitted plan shall provide, as a minimum, the following elements:

- An organizational chart including names, telephone numbers, current certifications and/or titles, and roles and responsibilities of all those involved with the quality control program.
- The process of communication by which quality control information will be disseminated to the appropriate persons, including materials suppliers. This shall include a list of recipients, the communication means that will be used, action time frames, and report formats.
- Materials list of items proposed to be provided under this section.

4. Specifications, catalog cuts, and other engineering data needed to demonstrate compliance with the specified requirements.
5. Proof of LFCF installer's compliance with the requirements in section C2, to include a list of projects with completion date, owner's name and phone number, and contact person.
6. Mix designs for the LFCF, prepared by the LFCF manufacturer or installer, showing compliance with the specified properties.
7. Certification of batch, mixing and placing equipment by the LFCF installer meeting the requirements of section C.3 hereinafter.
8. Written documentation that LFCF installer is certified by and approved by the foam agent manufacturer.
9. LFCF curing procedures.

C.1.2 Trial Batch Design and Testing

At least two weeks prior to placement, prepare a trial batch and submit trial batch testing results showing that the proposed LFCF material properties comply with the requirements of this specification. The accepted trial batch mix design and tested properties will become the standard of the material furnished under this contract.

C.1.3 Quality Assurance Samples

At least two weeks prior to placing, submit 10 each 3-inch diameter by 6-inch-high cylinder samples of the as designed and tested LFCF to the department. Cover specimens after casting to prevent loss of moisture. Do not oven dry specimens. At the department's option, the samples may be tested for strength and density in accordance to the requirements of ASTM 495 and ASTM C796 to verify the submitted test results and validate the contractor's testing procedures and quality of the furnished product.

C.2 Personnel Requirements

The Lightweight Foamed Concrete Fill installer, hereafter referred to as the LFCF installer, shall be certified by the manufacturer of the foaming agent and regularly engaged in the production and placement of the Lightweight Foamed Concrete Fill (LFCF). This shall include the completion of lightweight foamed concrete fills having a minimum of 10,000 total cubic yards in the past 5 years. Furthermore, the material shall have been successfully applied on at least three LFCF projects, consisting of mass fills for Federal and State highways, which have performed satisfactorily for at least five years.

The LFCF installer shall be certified and approved in writing by the foam agent manufacturer. The installer's foreman shall have a minimum of 2 years experience in this work and shall have worked on at least one of the three successful LFCF projects.

The LFCF installer shall use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are familiar with the specified requirements and the methods needed for proper performance of the work noted in this specification.

The foam agent manufacturer's representative (LFCF Manufacturer) shall be experienced in the placement of LFCF and shall be on site full-time during placement.

C.3 Equipment Requirements

The specialized batching, mixing, and placing equipment shall be automated and certified for this purpose by the manufacturer of the LFCF material. Bulk cement shall be weighed on a scale which operates within a tolerance of one half of one percent (0.5%) per batch. Foam shall be added and mixed at the site using the aforementioned equipment. Transit mixers and volumetric batching mixers are not acceptable.

C.4 Required Contractor Testing

The contractor is responsible for conducting acceptance testing and providing test results to the engineer prior to and during the installation of the LFCF.

C.4.1 Cast Density of Field Installed LFCF

Test cast density in accordance to ASTM C 796

1. Prior to placement of the initial batch, the installer shall check the density and adjust the mix as required to obtain the manufacturer's specified cast density at point of placement.
2. At hourly intervals during placement, monitor the density and adjust as necessary to maintain the specified cast density.

C.4.2 Strength Testing

Conduct strength testing in accordance to ASTM C 796 except do not oven dry the test specimens.

1. Furnish a sufficient quantity of molded and cured cylinders measuring 3-inches in diameter by 6-inches high for required strength tests. Provide molds, and a similar curing environment of the LFCF being tested. Prepare cylinders in accordance to ASTM C1064.
2. Provide certified strength test results to the engineer for acceptance. At a minimum, conduct a set of three strength tests at 1, 2, and 28 day intervals for each 500 cubic yards of LFCF placed and a minimum of two sets of four cylinders each per day.

C.5 Laboratory Requirements

Perform the LFCF compressive strength testing at a department qualified laboratory. Information on the Wisconsin Laboratory Qualification Program may be obtained from the Quality Management Section, Wisconsin department of Transportation, Bureau of Highway Construction, Truax Center, 3502 Kinsman Blvd., Madison, WI, 53704; telephone (608) 266-3246; or on the internet at: www.dot.state.wi.us. If approved by the department, the compressive testing may also be conducted at the LFCF manufacturer's facility with test results reported as noted.

C.6 Placement

LFCF shall be a homogeneous mixture and all materials shall be approved prior to use.

Prepare the areas to be filled in accordance with standard spec 206.3.8. Remove standing water in the test areas prior to placement of the LFCF. Ensure the LFCF remains above the water table at all times during construction.

Subgrade for LFCF fill will be prepared in accordance to standard spec 211.

Protect material before, during and after installation, and protect the work and materials of other trades. In the event of damage, immediately make replacements and repairs to the acceptance of the engineer at no additional cost to the department.

If the LFCF must be placed in freezing susceptible conditions, consult the manufacturer as to what precautions are necessary to assure installation of an acceptable LFCF. Do not place LFCF at a temperature of less than 32 degrees Fahrenheit, nor when freezing conditions are expected in less than 24 hours, unless precautions are taken to maintain temperatures above freezing. Do not place LFCF on frozen ground or material.

Cure LFCF in accordance with the accepted placement plan.

Proportion, mix, and place LFCF only using equipment approved by the manufacturer as indicated in the accepted LFCF placement plan. Once mixed, convey the LFCF concrete promptly to the location of placement without excessive handling.

Place LFCF in lifts not exceeding 48-inches in depth unless greater depths are allowed on the plans.

Scarify each lift before placing the next lift. Scarify each lift to a minimum depth of inch using a hand rake or other suitable means. When LFCF is used as backfill within MSE wall anchor zones, take special care when scarifying to not disturb the alignment of or physically damage the MSE wall reinforcing strips/mesh. Scarify after sufficient curing time such that foot traffic will not excessively damage the lift surface (no greater than ¼ inch indentation). Remove any loose debris or material as a result of the scarification process by blowing or other suitable means before placing the next LFCF lift.

Allow a minimum of one day (24 hours) between subsequent lifts. Prior to verification of the minimum specified compressive strength by testing, additional lifts may be placed after the one day minimum at the contractor's risk. Any material that does not meet the minimum specified strength within 28 days shall be removed and replaced by the contractor at no additional cost.

Move the discharge hose(s) sufficiently to ensure level filling through the specified fill area. Uneven filling is not permitted.

Limit the area of placement to the volume that can be placed within one hour, up to the maximum 4 foot lift height. Stagger placements such that the vertical joints are at least 10 feet apart except at designated vertical slip joints.

Where indicated on the plans, form a vertical slip joint across the entire width of LFCF embankments. The slip joint shall consist of a cold-formed joint in the LFCF, created by placing the LFCF on one side of the joint against a vertical rigid form. After removal of the form, place the LFCF on the opposite side of the

joint against the previously placed LFCF with a suitable bond breaker between the placements. Bond breaker shall be plastic sheeting, geotextile fabric, or other means acceptable to the engineer.

The discharge hose length shall not exceed 800 feet in length.

Place LFCF to the limits and grades shown in the plans with top of the LFCF within ± 0.1 foot of the elevations shown on the plans. Slope the top of the LFCF as indicated on the plans to provide drainage and prevent the ponding of water on the top of the LFCF. If not achieved at the time of placement, the top slope can be achieved by cutting, grinding or excavating the cured LFCF using methods approved by the engineer provided this is done in such a manner to leave a reasonably smooth, free draining surface without damaging the integrity of the underlying LFCF that remains.

Paving machines, heavy construction equipment or other unusual loading of the LFCF shall not be permitted until it has attained the specified 28-day compressive strength, and the loading is approved by the engineer.

Sawing or ripping of the LFCF for utilities, underdrain or other conflicts will be by methods approved by the engineer. Backfill such cuts and excavations into the LFCF to the original top of LFCF elevation using the same grade of LFCF material that was removed.

C.7 Damp Proofing

Apply damp proofing conforming to standard spec 516 to the final horizontal and vertical surfaces of the LFCF material at locations designated on the plans.

C.8 Acceptance

Rectify any LFCF material rejected by the engineer that does not meet the minimum required material properties or is not installed in accordance with this article. Corrective measures are subject to the approval of the engineer. Accepted corrected measures will be performed by the contractor at no additional cost to the department or extension of contract time. This includes removal and replacement of rejected LFCF material not meeting the minimum material requirements or installed in accordance with this article.

D Measurement

The department will measure Lightweight Foamed Concrete Fill Grade 1 and Lightweight Foamed Concrete Fill Grade 2, by the cubic yard of LFCF material acceptably placed within the limits shown on the plans in accordance with this specification. LFCF material placed outside the limits shown on the plans will not be measured for payment unless authorized in advance of placement by the engineer.

When indicated on the plans, LFCF placed as backfill within the anchor zone of Mechanically Stabilized Earth (MSE) retaining walls in lieu of granular backfill, will not be measured separately for payment, and will be included in the cost of item Wall Concrete Panel Mechanically Stabilized Earth.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0035.0006	Lightweight Foamed Concrete Fill Grade 1	CY
SPV.0035.0007	Lightweight Foamed Concrete Fill Grade 2	CY

Payment is full compensation for preparation of written submittals; material testing; coordination and scheduling of LFCF placement; onsite LFCF Manufacturer representative, specialized equipment to mix, transport and place LFCF; providing and erecting forms; bond breakers; and for groundwater control and temporary shoring.

Damp proofing will be measured and paid for separately in accordance to standard spec 516.

114. HPC Masonry Structures, Item SPV.0035.4000.

A. Description

This special provision describes specialized material and construction requirements for high-performance concrete used in bridge structures. Conform to standard spec 501, 502, and 509, as modified in this special provision. Conform to standard spec 715 for QMP Concrete Pavement, Cast-in-Place Barrier, and Structures.

B. Materials

501.2.7.3 Coarse Aggregates

501.2.7.3.1 General

Replace the entire text of 501.2.7.3.1 with the following:

- (1) Provide coarse aggregates from a department-approved source. Use an approved source listed on the APL or follow the source approval process specified in standard spec 106.3.4.2.
- (2) Use clean, hard, durable crushed stone or crushed gravel free of excess flat and elongated pieces, lightweight particles, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.
- (3) Use virgin aggregates only.
- (4) Contact the engineer a minimum of 4 weeks prior to pouring concrete to collect a sample of the aggregates proposed for the project. The department will perform tests for LA wear, sodium sulfate soundness, freeze-thaw soundness and lightweight pieces at least once per calendar year for aggregates used in high-performance concrete mixes. Only the department test results will be used for aggregate acceptance.
- (5) The department will randomly sample coarse aggregate for lightweight pieces testing at least once per 1,000 cubic yards during placement of HPC Masonry Structures.
- (6) For coarse aggregates with marginal freeze-thaw soundness test results per standard spec 106.3.4.2.2.1, the department will randomly sample coarse aggregate for freeze-thaw soundness testing at least once per 1,000 cubic yards during placement of HPC Masonry Structures.

501.2.7.3.2 Physical Properties

Replace 501.2.7.3.2(1) with the following:

Furnish coarse aggregates approved for use in concrete masonry structures and conforming to the following:

Aggregate Quality Test	Test Method	Maximum Percent by Weight
LA Wear (100 and 500 revolutions) ^[1]	WTM T96	30
Sodium Sulfate Soundness (R-4, 5 cycles) ^[1]	WTM T104	6
Freeze-Thaw Soundness ^[1]	WTM T103	12
Lightweight Pieces ^{[1] [2]}	WTM T113	2.0

^[1] Coarse aggregate sizes used in the Portland Cement Concrete mixture design (DT2221 Concrete Mixture Design – Optimized Aggregate Gradation) will be tested individually and the results weighted by the blend percentage listed in the mix design. Do not consider fine aggregate percentage as part of the weighted result.

^[2] Material having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of lightweight pieces in the sample retained on the 3/8-inch sieve by the weight of the total sample.

501.2.7.3.3 Deleterious Substances

Replace 501.2.7.3.3(1) with the following:

- (1) Furnish aggregates that conform to the following:

Deleterious Substance	Test Method	Maximum Percent by Weight
Coal, clay lumps, shale, and other deleterious substance	Visual	3.0
Flat or elongated pieces based on a 3:1 ratio ^[1]	WTM D4791	15.0
Materials passing the No. 200 sieve	WTM T11	1.5

501.2.8 Concrete Curing Materials

Replace entire text with the following:

- (1) Furnish burlap conforming to AASHTO M 182, class 1, 2, 3 or 4.

710.5 Sampling and Testing

Supplement 710.5 with the following:

710.5.8 Chloride Penetration Resistance

- (1) For each new or changed mix design, measure chloride penetration resistance according to AASHTO T277 at a frequency of 1 test per 3 months (quarterly) of production.
- (2) Strip permeability samples from molds and wet cure according to AASHTO T277 Accelerated Moist Curing. Upon completion of the curing process, obtain one sample from each cylinder and test according to AASHTO T277.
- (3) Provide concrete mixtures that meet the chloride penetration maximum resistance limit of 1500 coulombs based on AASHTO T277. Quarterly chloride resistance test results exceeding 1500 coulombs will require adjustment of the concrete mix going forward to improve the chloride penetration resistance.

715.2 Materials

715.2.1 General

Replace 715.2.1(4) with the following:

- (4) The regional materials engineer must review and approve the submitted mix design within 7 business days of receiving the mix design submittal and complete Project Staff Review section of mix design certification within DT2220 or DT2221.

715.2.2 Class I Concrete Mixes

715.2.2.2 Structures

Supplement 715.2.2.2 with the following:

- (5) Provide a mix design using optimized aggregate gradation and a cementitious content within the range of 470 to 540 pounds per cubic yard. For all superstructure and substructure concrete, unless the engineer approves otherwise in writing, concrete mixtures must use an IL, IP, IS, or IT blended cement.
- (6) In addition to the standard spec mix design laboratory trial batching for structures, include the results of the following tests:
 1. WTM T119 Slump of Hydraulic Cement Concrete.
 2. AASHTO T277 Rapid Determination of the Chloride Permeability of Concrete, using the modified curing procedure according to 710.5.8 in this special provision.
- (7) Provide concrete with a 28-day compressive strength that equals or exceeds the following:
 - Contract specified f'c.
 - 4000 psi, if the contract does not specify f'c.
- (8) Provide concrete with a maximum chloride penetration resistance of 1500 coulombs at 28-days.

C. Construction

501.3.2.4.3.3 Extended Delivery Time

Delete 501.3.2.4.3.3(1).

501.3.5 Ready-Mixed Concrete

501.3.5.1 General

Replace 501.3.5.1(1) with the following:

- (1) Use central-mixed concrete as defined in standard spec 501.3.5.1(2) for all work performed under this special provision.

501.3.5.2 Delivery

Replace 501.3.5.2(3) with the following:

- (3) Deliver and completely discharge all concrete within one hour beginning when adding water to the cement, or when adding cement to the aggregates. A decrease in air temperature below 60 F or the use of department-approved retarders does not increase the discharge time.

501.3.7.1 Slump

Replace the entire text with the following:

- (1) Provide concrete with a 2-inch to 4-inch slump
- (2) Perform slump tests for concrete according to WTM T119.

501.3.8.2 Hot Weather Concreting

501.3.8.2.1 General

Replace the entire text with the following:

- (1) The contractor is responsible for the quality of concrete placed in hot weather. Submit a written temperature control plan at or before the pre-pour meeting. In that plan, outline the actions to control concrete temperature if the concrete temperature at the point of placement exceeds 80 F. Do not place concrete without the engineer's written acceptance of that temperature control plan. Perform the work as outlined in the temperature control plan.
- (2) If the concrete temperature at the point of placement exceeds 80 F, do not place concrete for items covered in this special provision.
- (3) The department will pay \$0.75 per pound for the quantity of ice required to reach a target concrete temperature of 75 F if the following conditions are met:
 - 1. The un-iced concrete temperature exceeds 80 F.
 - 2. The contractor has performed the actions outlined in the contractor's accepted temperature control plan.
 - 3. The contractor elects to use ice.
- (4) Notify the engineer whenever conditions exist that might cause the temperature at the point of placement to exceed 80 F. If project information is not available, the contractor should obtain information from similar mixes placed for other nearby work.

501.3.8.2.2 Bridge Decks

Replace the entire text with the following:

- (1) Do not place concrete for bridge decks when the air temperature is above 80 F.
- (2) For concrete placed in bridge decks, submit a written evaporation control plan at each pre-pour meeting. In that plan, outline the actions to maintain concrete surface evaporation at or below 0.15 pounds per square foot per hour. Do not place concrete for bridge decks without the engineer's written acceptance of that evaporation control plan. If the engineer accepts an evaporation control plan calling for ice, the department will pay \$0.75 per pound for that ice. Perform the work as outlined in the evaporation control plan.
- (3) If predicting a concrete surface moisture evaporation rate exceeding 0.15 pounds per square foot per hour, do not place concrete for bridge decks.
- (4) Provide evaporation rate predictions to the engineer 24 hours before each bridge deck pour.
- (5) Compute the evaporation rate from the predicted ambient conditions at the time and place of the pour using the nomograph, or computerized equivalent, specified in [CMM 525](#), figure 1 or using a computerized equivalent. Use weather information from the nearest national weather service station. The engineer will use this information to determine if the pour will proceed as scheduled.
- (6) At least 8 hours before each pour, the engineer will inform the contractor in writing whether to proceed with the pour as scheduled. If the actual computed evaporation rate during the pour exceeds 0.15 pounds per square foot per hour, at the engineer's discretion, the contractor may be allowed to implement immediate corrective action and complete the pour.

502.3.5.4 Superstructures

Delete 502.3.5.4(5).

502.3.7.8 Floors

Replace 502.3.7.8(5) with the following:

- (5) Set the rails or tracks that the finish machine rides on, to the required elevation; and ensure they adjust to allow for settlement under load. Support the rails or tracks outside the limits of the finished riding surface. Do not support rails or tracks on the tops of girders, or within the finished riding surface, without the engineer's written permission.

Delete 502.3.7.8(13),(14),(15). Add the following to 502.3.7.8:

- (19) Do not place bridge deck concrete more than 10 feet ahead of the finishing machine. If there is a delay of more than 10 minutes during the placement of a bridge deck, cover all concrete (unfinished and finished) with wet burlap to protect the concrete from evaporation until placement operations resume.
- (20) Keep hand finishing to a minimum. Hand finishing the edge of deck is acceptable. Equip the finishing machine with a pan behind the screed. Apply micro texture using a broom or turf drag following the use of a 10-foot straight edge. Only finish by hand as necessary to close up finished concrete. Begin wet curing the deck within a timeframe acceptable to the engineer following the micro texture.

502.3.8 Curing

502.3.8.1 General

Replace 502.3.8.1(1) with the following:

- (1) Maintain adequate moisture throughout the concrete mass to support hydration for at least 14 days.

502.3.8.2 Curing Requirements

502.3.8.2.1 General

Replace entire text of 502.3.8.2.1 with the following:

- (1) Wet-cure the concrete for bridge decks, structural approach slabs, sidewalks on bridges and raised medians on bridges for 14 days by use of a soaker hose system, or other engineer-approved methods. Cover the finished surface of bridge decks and overlays with one layer of wetted burlap within 10 minutes after the finishing machine has passed. Apply the burlap gently to minimize marking of the fresh concrete. Keep the first layer of burlap continuously wet until the bridge deck or overlay is sufficiently hard to apply a second layer of wetted burlap. Immediately after applying the second layer of burlap, continue to keep the deck wet until placing and activating the soaker hose system. Throughout the remainder of the curing period, keep the burlap continuously wet with soaker hoses hooked up to a continuous water source. Inspect the burlap twice daily to ensure the entire surface is moist. If necessary, alter the soaker hose system as needed to ensure the entire surface is covered and stays moist. After 48 hours from the time of completion of the bridge deck or overlay pour, the soaker hose system and burlap may be covered with polyethylene sheeting. Provide a continuous flow of water through the soaker hose system for the entire curing period.
- (2) Do not uncover any portion of the deck at any time for any reason during the first 7 days of the curing period.
- (3) Set up and test the fogging system before each bridge deck, structural approach slab, bridge mounted sidewalk or bridge mounted raised median pour. Keep the fogging system set up and operational during the pour.

502.3.8.2.3 Decks

Delete the entire text.

502.3.8.2.4 Parapets

Replace the entire text with the following:

- (1) Cure the inside and outside concrete faces and tops of railings or parapets by covering with wetted burlap immediately after form removal and surface finish application. Keep the burlap thoroughly wet for at least 7 days; or by covering for the same period with thoroughly wet polyethylene-coated burlap conforming to standard spec 501.2.8.
- (2) Secure coverings along all edges to prevent moisture loss.

502.3.9 Cold Weather Protection

502.3.9.6 Bridge Floors

Replace the entire text of 502.3.9.6 with the following:

- (1) Protect concrete in bridge floors as specified for structural masonry, and except for parapets and similar pours, according to the following requirements:
 1. Do not place concrete for bridge floors or other superstructure elements when the national weather service forecast for the construction area predicts temperatures to fall below 32 F within 24 hours, unless the engineer specifically allows or requires in writing.
 2. Protect the underside of the bridge floor, including the girders, by housing and heating when the national weather service forecast predicts temperatures to fall below 32 F during the cold weather protection period. Maintain a minimum temperature of 40 F in the enclosed area under the floor for the entire 14-day curing period.

D. Measurement

502.4.1 Concrete for Bridges

Replace the entire text of 502.4.1 with the following:

- (1) The department measures the Concrete Masonry Bridges and HPC Masonry Structures bid items by the cubic yard acceptably completed, based on the dimensions the plans show or, if the engineer revises the plan, on revised plan dimensions. The volume in the haunches of prestressed concrete girder bridges is based on the average haunch height the plans show.
- (2) The department deducts for the volume displaced within components as follows:
 - Cast-in-place concrete piling embedded in footings, pile caps and abutments.
 - Prestressed concrete girders embedded in superstructure diaphragms.
 - Flanges of steel and precast concrete beams embedded in decks.

E. Payment

502.5.1 General

Supplement 502.5.1(1) with the following:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
SPV.0035.4000	HPC Masonry Structures	CY

502.5.2 Concrete for Bridges

Replace the entire text of 502.5.2(1) with the following:

- (1) Payment for the Concrete Masonry Bridges and HPC Masonry Structures bid items is full compensation for providing forms and falsework; for placing, finishing, curing, protecting, and heating concrete; for measuring concrete opening strength, including fabricating and testing cylinders, and evaluating maturity; for treating joints, including sealing, providing preformed joint filler and waterproofing; for sealing cracks identified in the initial crack survey; for providing bridge seat protection; and for providing nameplates.

115. Baseline CPM Progress Schedule, Item SPV.0060.0001; Monthly CPM Progress Schedule Updates, Item SPV.0060.0002.

Replace standard spec 108.4 with the following:

108.4 Critical Path Method Progress Schedule

108.4.1 Definitions

- (1) The department defines terms used in 108.4 as follows:

Activity	An administrative or construction task performed during the course of the project with a defined duration, and scheduled (or actual) start and finish dates.
Critical Path	The sequence of activities that must start and finish on time to minimize the overall duration and ensure interim and project

completion milestones are completed by the contract completion dates.

Longest Path The sequence of activities through a project network from start to finish where the total duration is longer than any other path.

Construction Activity Construction activities are discrete work activities performed by the contractor, subcontractors, utilities, or third parties within the project limits.

CPM Progress Schedule A Critical Path Method (CPM) Progress Schedule is a network of logically related activities. The CPM schedule calculates when activities can be performed and establishes the critical or longest continuous path or paths of activities through the project.

Float Float, as used in this special provision, is the total float of an activity; i.e., it is the amount of time between the date when an activity can start (the early start), and the date when an activity must start (the late start). In cases where the total float of an activity has a different value when calculated based on the finish dates, the lower (more critical) value will govern.

Forecast Completion Date The completion date predicted by the latest accepted CPM Update, which may be earlier or later than the contract completion date, depending on progress.

Fragnet A group of logically-related activities, typically inserted into an existing CPM schedule to model a portion of the project, such as the work associated with a change order.

Initial Work Plan The initial work plan is a time-scaled CPM schedule showing detailed activities for the first 90 calendar days of work and summary level activities for the remainder of the project.

Intermediate Milestone Date A contractually required date for the completion of a portion of the work, so that a subsequent portion of the work or stage of traffic phasing may proceed.

Department's Project Schedule Template The department's project schedule template for the overall IH 94 Freeway Program, including interim and final contract completion dates, and containing codes for use as a template for the development of the contractor's schedule.

Work Breakdown Structure (WBS) A framework for organizing the activities that make up a project by breaking the project into successively greater detail by level. A WBS organizes the project work. It does not address the sequencing and scheduling of project activities.

108.4.2 Department's Project Schedule Template

108.4.2.1 Project Schedule

- (1) Within five business days after award, the department will provide its current Project Schedule Template, containing intermediate milestone constraints, standard activity codes, and a standard WBS for the contractor to use to develop its schedule.

108.4.2.2 Use of Project Schedule Template

- (1) The Project Schedule Template provides information to assist the contractor in preparing its schedule. The Project Schedule Template is not a contract document. The logic contained in the Project's Schedule Template is not intended to alter or supplement contract requirements for the phasing of the work, but to reflect those requirements.

108.4.3 Contractor's Scheduling Responsibilities

- (1) Prepare and submit a CPM progress schedule that accurately reflects the plan for the performance of the work, based on the physical requirements of the Work, and Traffic Phasing requirements. The CPM schedule is the contractor's committed plan to complete all work within the completion deadlines. Full responsibility is assumed for the prosecution of the work as shown. The CPM schedule is not part of the contract. Schedule the Work in the manner required to achieve the completion date and interim completion dates specified in the Prosecution and Progress Special Provision. The contractor will schedule and attend a CPM Initial Workshop. If necessary, the engineer may modify the workshop schedule to ensure attendance by the necessary department and contractor personnel; however, the CPM Initial Workshop must be completed prior to issuing the Notice to Proceed. The CPM Initial workshop will include:

1. Department presentation of the use of CPM scheduling on the project.

2. Contractor presentation of the conceptual work plan for the project.
 3. Department and contractor discussion of the level of detail on features in the CPM Initial Work Plan and the Baseline CPM Progress Schedule.
- (2) Use the department-provided Project Schedule Template to develop the Initial Work Plan and the Baseline CPM Progress Schedule. Use the Project's Schedule Template ID coding structure to categorize activities by Contract, Stage, Location, and Responsibility to ensure compatibility with the Project Schedule Template and with schedules prepared by other contractors. Add additional activity codes as necessary, but do not delete the coding structure provided.
- (3) To ensure compatibility with the Project Schedule Template, use the latest version of Primavera P6 Project Management, by Oracle Corporation, Redwood Shores, CA, to prepare the Initial Work Plan, Baseline CPM Progress Schedule, and Monthly CPM Updates.
- (4) Designate a Project Scheduler who will be responsible for scheduling the Work and submit a professional resume describing a minimum of three years of scheduling experience on urban, interstate-highway reconstruction work of similar size and complexity, including recent experience with P6. Obtain approval of the submitted resume before scheduling the work.

108.4.4 Submittals

108.4.4.1 Initial Work Plan

- (1) Within ten business days after the CPM Initial Work Plan Workshop, submit an Initial Work Plan as follows:
1. Develop the Initial Work Plan using the Project Schedule Template. Identify the contemplated start and completion dates for each activity.
 2. Provide a detailed plan of activities to be performed within the first 90 calendar days of the contract. Provide construction activities with durations not greater than 28 calendar days (20 business days), unless the engineer accepts requested exceptions.
 3. Provide activities as necessary to depict administrative work, including submittals, reviews, and procurements that will occur within the first 90 calendar days of the contract. Show additional activities that require department review or approval. Activities other than construction activities may have durations greater than 28 calendar days (20 business days). Allow 21 calendar days (15 business days) for department review of submittals.
 4. Provide summary activities for the balance of the project. Summary activities may have durations greater than 28 calendar days (20 business days).
 5. Submit electronic printout (PDF) copies of the Initial Work Plan and the corresponding Oracle Primavera P6 schedule (XER) in a format acceptable to the engineer.
 6. The engineer will accept the contractor's Initial Work Plan or provide comments within five business days after receipt of the Initial Work Plan. Address comments and resubmit the Initial Work Plan as necessary. Do not begin work until the engineer accepts the Initial Work Plan. The department will use the initial work plan to monitor the progress of the work until the Baseline CPM Progress Schedule is accepted.
 7. Submit an updated version of the Initial Work Plan monthly until the engineer accepts the Baseline CPM Progress Schedule. With each update, include actual start dates, completion percentages, and remaining durations for activities started but not completed. Include actual finish dates for completed activities.
 8. Ensure the Initial Work Plan shows completing the work within the interim completion dates and specified completion date.
 9. Include activities that describe essential features of the work and activities that might potentially delay contract completion. Identify activities that are controlling items of work.

108.4.4.2 Baseline CPM Progress Schedule

- (1) Within 15 business days after the CPM Initial Workshop, submit a Baseline CPM Progress Schedule and written narrative. The department will use the schedule to monitor the progress of the work.
1. Develop the Baseline CPM using the Project Schedule Template. The Baseline CPM is the contractor's committed plan to complete the Work within the time frames required to achieve the contract completion date and intermediate milestone dates.
 - 1.1. Provide a detailed plan of activities to be performed during the entire contract duration, including all administrative and construction activities required to complete the work as described in the contract documents. Provide construction activities with durations not greater than 28 calendar days (20 business days), unless the engineer accepts requested exceptions.
 - 1.2. Provide activities as necessary to depict administrative work, including submittals, reviews, procurements, inspections, and all else necessary to complete the work as described in the contract documents. Activities other than construction activities may have durations greater than 28 calendar

days (20 business days). Allow 21 calendar days (15 business days) for department review of submittals.

- 1.3. Submit a temporary drainage plan showing the interface between various stages of a project as well as the interface with adjacent projects.
 - 1.4. Include activities that describe essential features of the work and activities that might potentially delay contract completion. Identify activities that are controlling items of work.
 - 1.5. Show completing the work within interim completion dates and the specified completion date.
 - 1.6. Provide activities as necessary to depict third party work related to the contract.
 - 1.7. Make allowance for specified work restrictions, non-working days, time constraints, calendars, and weather; and reflect involvement and reviews by the department, and coordination with adjacent contractors, utility owners, and other third parties.
 - 1.8. With the exception of the Project Start Milestone and Project Completion Milestone, all activities must have predecessors and successors. The start of an activity shall have a Start-to-Start or Finish-to-Start relationship with preceding activities. The completion of an activity shall have a Finish-to-Start or Finish-to-Finish relationship with succeeding activities. Do not use Start-to-Finish relationships. Do not use Finish-to-Start relationships with a lag unless the engineer accepts requested exceptions. Do not use negative lags with any relationships.
 - 1.9. Activity constraints shall be limited to contract-imposed completion dates. Do not use constraints on start or finish dates unless the engineer accepts requested exceptions. Do not use float constraints on any construction task activities. The engineer reserves the right to temporarily delete any date and/or float constraint when evaluating the effects of delays.
 - 1.10. Schedule all intermediate milestones in the proper sequence and input as either a "Start-no-Earlier-Than" or "Finish-no-Later-Than" date. Provide predecessors and successors for each intermediate milestone as necessary to model each Stage of the Work. Unless the engineer accepts a requested exception, the schedule should encompass all the time in the contract period between the starting date and the specified completion date.
 - 1.11. Using the bid quantities and unit prices, develop an anticipated cash-flow curve for the project, based on the Baseline CPM.
 2. Provide a written narrative with the baseline CPM explaining the planned sequence of work, as-planned critical path, critical activities for achieving intermediate milestone dates, traffic phasing, and planned labor and equipment resources. Use the narrative to further explain:
 - 2.1. The basis for activity durations in terms of production rates for each major type of work (number of shifts per day and number of hours per shift), and equipment usage and limitations.
 - 2.2. Use of constraints.
 - 2.3. Use of calendars.
 - 2.4. Estimated number of adverse weather days on a monthly-basis.
 - 2.5. Scheduling of permit and environmental constraints, and coordination of the schedule with other contractors, utilities, and public entities.
- (1) Submit electronic printout (PDF) copies of the Baseline CPM and the corresponding Oracle Primavera P6 schedule file (XER) in a format acceptable to the engineer.
 - (2) Within ten business days of receiving the Baseline CPM, the engineer will provide comments and schedule a meeting for the contractor to present its Baseline CPM and answer questions raised in the engineer's review.
 - (3) At the meeting scheduled by the engineer, provide a presentation of the Baseline CPM. In the presentation, include a discussion of the staging and sequencing of the work, understanding of traffic phasing, and application of labor and equipment resources to the Work. Address comments raised in the engineer's review.
 - (4) Within five business days after the meeting, the engineer will accept the contractor's Baseline CPM schedule or provide comments. Address the engineer's comments and resubmit a revised Baseline CPM within ten business days after the engineer's request. If the engineer requests justification for activity durations, provide information that may include estimated labor, equipment, unit quantities, and production rates used to determine the activity duration.
 - (5) The department will only make progress payments for the value of materials, as specified in standard spec 109.6.3.2, until the contractor has submitted the Baseline CPM Schedule. The department will retain 10 percent of each estimate until the department accepts the Baseline CPM Schedule.
 - (6) The engineer will accept the Baseline CPM based solely on whether the schedule is complete as specified in this section. The engineer's acceptance of the schedule does not modify the contract or validate the schedule.

- (7) The department will not consider requests for contract time extensions as specified in 108.10 or additional compensation for delay specified in standard spec 109.4.7 until the department accepts the Baseline CPM schedule.

108.4.4.3 Monthly CPM Updates

- (1) Submit CPM Updates on a monthly basis after acceptance of the Baseline CPM as follows:
1. Include actual start dates, completion percentages, and remaining durations for activities started but not completed, and actual finish dates for completed activities, through the final acceptance of the project.
 2. Include additional activities as necessary to depict additions to the contract by changes and logic revisions as necessary to reflect changes in the contractor's plan for prosecuting the work.
 3. Include a narrative report that includes a brief description of monthly progress, changes to the critical path from the previous update, sources of delay, potential problems, work planned for the next 30 calendar days, and changes to the CPM schedule. Changes to the logic of the CPM schedule include the addition or deletion of activities and changes to activity descriptions, original durations, relationships, constraints, calendars, or previously recorded actual dates. Justify changes to the CPM schedule in the narrative by describing associated changes in the planned methods or manner of performing the work or changes in the work itself.
 4. Submit electronic printout (PDF) copies of each CPM Update and the corresponding Oracle Primavera P6 schedule file (XER) in a format acceptable to the engineer.
- (2) Within five business days of receiving each CPM Update, the engineer will provide comments and schedule a meeting as necessary to address comments raised in the engineer's review. Address the engineer's comments and resubmit a revised CPM Update within five business days after the engineer's request.

108.4.4.4 Three-Week Look-Ahead Schedules

- (1) Submit Three-Week Look-Ahead Schedules on a weekly basis after the notice to proceed (NTP). The schedule can be hand drawn or generated by computer. With each Three-Week Look-Ahead include:
1. Activities underway and as-built dates for the past week.
 2. Actual as-built dates for completed activities through final acceptance of the project.
 3. Planned work for the upcoming two-week period.
 4. The activities underway and critical RFIs and submittals, based on the CPM schedule.
 5. Details on other activities not individually represented in the CPM schedule.
- (2) On a weekly basis, the department and the contractor shall agree on the as-built dates depicted in the Three-Week Look-Ahead schedule or document all disagreements. Use the as-built dates from the Three-Week Look-Ahead schedules for the month when updating the CPM schedule.

108.4.4.5 Weekly Production Data

- (1) Provide estimated and actual weekly production rates for items of work on a weekly basis as follows:
1. Data on the following items by area or station:
 - 1.1. Retaining Walls
 - 1.1.1. Leveling Pads - LF
 - 1.1.2. Set Panels - SF
 - 1.1.3. Parapets - LF
 - 1.1.4. Wall Face - Bay
 - 1.1.5. Tie Backs – Each
 - 1.1.6. Anchor Slabs – LF
 - 1.1.7. Drilling - Each
 - 1.1.8. Coping – LF
 - 1.1.9. Footing - LF
 - 1.2. Bridge Construction
 - 1.2.1. Footings—Each
 - 1.2.2. Columns—Each
 - 1.2.3. Abutments—Each
 - 1.2.4. Pier Caps—Each
 - 1.2.5. Girder Spans – Each
 - 1.2.6. Decked Spans – Each
 - 1.2.7. Poured Spans – Each

- 1.3. Roadway Excavation—CY per week
- 1.4. Roadway Structural Section
 - 1.4.1. Grading/Subgrade Preparation—SY
 - 1.4.2. Base Material Placement—Ton
 - 1.4.3. Base Material Subgrade Preparation—SY
 - 1.4.4. Asphalt Pavement—Ton
 - 1.4.5. Concrete Pavement – SY
- 1.5. Tunnels
 - 1.5.1. Drilled Shafts – Each
 - 1.5.2. Beam Seat/Cap - LF
 - 1.5.3. Girders - Each
 - 1.5.4. Deck – Percent
- 1.6. Noise Walls
 - 1.6.1. Drill/Set Ground Mounted Posts - Each
 - 1.6.2. Install Ground Mounted Panels - Each
 - 1.6.3. Anchor/Set Structure Mounted Posts - Each
 - 1.6.4. Install Structure Mounted Panels - Each

2. The actual daily production for the past week and the anticipated weekly production for the next week.

- (2) Submit the data in an electronic spreadsheet format at the same time the Three-Week Look-Ahead is submitted. On a weekly basis, the department and the contractor shall agree on the production data or document all disagreements.

108.4.5 Progress Review Meetings

108.4.5.1 Weekly Progress Review Meetings

- (1) After completing the weekly submittal of the Three-Week Look-Ahead and production data, attend a weekly meeting to review the submittals with the department. At the meeting, address comments as necessary, and document agreement or disagreement with the department.

108.4.5.2 Monthly Update Review Meetings

- (1) After submitting the monthly update and receiving the engineer's comments, attend a job-site meeting, as scheduled by the engineer, to review the progress of the schedule. At that meeting, address comments as necessary, and document agreement or disagreement with the department. The monthly meeting will be coordinated to take place on the same day and immediately before or after a weekly meeting, whenever possible.

108.4.6 CPM Progress Schedule Revisions

- (1) When authorized by the engineer, a CPM Progress Schedule Revision may be submitted by the contractor due to changes in the Work or project conditions. This Revision may be submitted prior to the due date of the next Monthly CPM Update. Prepare the CPM Revision in the same format as required for Monthly CPM Updates, including justification for changes to the schedule. The process for comment and acceptance of a CPM Revision will be the same as for Monthly CPM Updates. If the CPM Revision is accepted, prepare the next monthly update based on the revised CPM. If the CPM Revision is rejected, prepare the next monthly update based on the previous month's update.
- (2) Engineer's Right to Request Revisions—The engineer will monitor the progress of the work and may request revisions to the CPM schedule. Revise the schedule as requested by the engineer, and submit a CPM Progress Schedule Revision within ten business days of the request. The process for comment and acceptance of a CPM Revision will be the same as for Monthly CPM Updates. The engineer may request that the contractor revise the CPM schedule for one or more of the following reasons:
 - 1. The forecast completion date is scheduled to occur more than 14 calendar days after the contract completion date.
 - 2. An intermediate milestone is scheduled to occur more than 14 calendar days after the date required by the contract.
 - 3. The engineer determines that the progress of the work differs significantly from the current schedule.
 - 4. A contract change order requires the addition, deletion, or revision of activities that causes a change in the contractor's work sequence or the method and manner of performing the work.

108.4.7 Documentation Required for Time Extension Requests

- (1) To request a time extension associated with changes to the work to an intermediate milestone date or the contract completion date, provide a revised schedule based on the latest accepted CPM Update. Include a narrative detailing the work added or deleted and the other activities affected. For added work, submit a proposed fragnet of activities to be added or revised in the CPM schedule, indicating how the fragnet is to be tied to the CPM schedule.
- (2) To request a time extension associated with delays to the work to an intermediate milestone date or the contract completion date, provide a revised schedule based on the latest accepted CPM Update. Include a narrative detailing the affected activities and the cause of the delay. Requests for time extensions due to delays should meet the following criteria:
 1. Submit a proposed fragnet of activities to be added or revised in the CPM schedule, indicating how the fragnet is to be tied to the CPM schedule.
 2. For requests to extend the contract completion date, include a description of how the delay affected the project's critical path, based on the latest accepted CPM Update.
 3. For requests to extend an intermediate milestone date, include a description of how the delay affected the controlling (longest) path to the milestone, based on the latest accepted CPM Update.
 4. The department and the contractor agree that the float is not for the exclusive use or financial benefit of either party. Either party has the full use of the float on a first come basis until it is depleted.

108.4.8 Payment for CPM Progress Schedule

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0001	Baseline CPM Progress Schedule	EACH
SPV.0060.0002	Monthly CPM Progress Schedule Updates	EACH

- (2) The department will only make progress payments for the value of materials, as specified in 109.6.3.2.1, until the Baseline CPM schedule has been submitted. The department will retain ten percent of each estimate until the department accepts the Baseline CPM schedule.
- (3) The department will only make progress payments for the value of materials, as specified in 109.6.3.2.1, until the Monthly CPM schedule updates have been submitted. The department will retain ten percent of each estimate until the department accepts the Monthly CPM schedule update.
- (4) Payment is full compensation for all work required under these bid items. The department will pay the contract unit price for the Baseline CPM schedule after the department accepts the schedule. Then, the department will pay the contract unit price for each Monthly CPM Update acceptably completed.

sef 108-005 (20231101)

116. Remove, Salvage and Reset Boulder, Item SPV.0060.0010.

A Description

This special provision describes carefully removing the existing boulder at locations shown in the plans, salvaging, and replacement of the boulder back to its original location or a location approved by the engineer.

B (Vacant)

C Construction

Remove, salvage and temporarily relocate the boulder to a location where it will not get damaged either on or off site. Replace the boulder back to its original location or a location approved by the engineer after substantial complete. See project plans for further details.

D Measurement

The department will measure Remove, Salvage and Reset Boulder 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.0060.0010	Remove, Salvage and Reset Boulder	EACH

Payment is full compensation for removing, salvaging, temporarily relocate and replacement of the boulder, restoring the site, and for cleanup.

112. Concrete Barrier Transition Type S1, Item SPV.0060.0108; Concrete Barrier Transition Type S2, Item SPV.0060.0109.

A Description

This special provision describes constructing Concrete Barrier Transition (Type) according to standard spec 603, details shown in the plans, and in this special provision.

B (Vacant)

C Construction

Construct the Concrete Barrier Transition (Type) to present a smooth, uniform appearance in its final position conforming to the horizontal and vertical lines the plans show or ordered by the engineer, and free of lumps, sags or other irregularities.

D Measurement

The department will measure Concrete Barrier Transition (Type) by each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0108	Concrete Barrier Transition Type S1	EACH
SPV.0060.0109	Concrete Barrier Transition Type S2	EACH

Payment is full compensation for furnishing all materials, forming, placing, finishing, and curing of barrier transitions.

117. Sawing Concrete Barrier, Item SPV.0060.0122.

A Description

This special provision describes sawing existing concrete barrier full depth according to pertinent requirements of standard spec 690, as shown on the plans, and as hereinafter provided.

B (Vacant)

C Construction

This work includes transverse full depth sawing of the concrete barrier wall, and transverse full depth sawing of the concrete barrier footing. Sawcut as existing concrete barrier wall joint. Operations may not compromise the integrity of adjacent materials that are to remain in place.

D Measurement

The department will measure Sawing Concrete Barrier as each individual existing barrier saw cut, 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.0060.0122	Sawing Concrete Barrier	EACH

Payment is full compensation for transverse full-depth sawing of concrete barrier wall and concrete barrier footing; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

118. Salvage Ramp Gate, Item SPV.0060.0123.

A Description

This special provision describes salvaging an existing ramp gate assembly, which includes removing the existing pole assembly; removing and disposing of the existing concrete base; and coordinating pickup of the assembly.

B Vacant

C Construction

Salvage the ramp closure gate from the location shown in the plans. Stockpile the ramp closure gate on site. Avoid damaging the gate pole assembly, as it will be reused. Do not use any equipment or devices that might damage structures, facilities, or property to be preserved and retained. Complete all operations necessary to remove ramp closure gates that might endanger its ability to be reused.

Coordinate with Milwaukee County Highway Maintenance Kevin Kent at (414) 257-6566 when the assembly is ready for pick up.

D Measurement

The department will measure Salvage Ramp Gate by the each unit acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0123	Salvage Ramp Gate	EACH

Payment is full compensation for disassembly of the existing unit as needed; for removal and disposal of the existing concrete base, for stockpiling the assembly on site, and for coordination with the electrical unit for pickup of the assembly.

119. Survey Project 1060-27-74, Item SPV.0060.0129.

A Description

This special provision describes modifying standard spec 105.6 and 650 to define the requirements for construction staking for this contract. Conform to standard spec 105.6 and 650 and as follows.

The department will not perform any construction staking for this contract. Obtain engineer's approval before performing all survey required to lay out and construct the work under this contract.

Replace standard spec 650.1 with the following:

This section describes the contractor-performed construction staking required under individual contract bid items to establish the horizontal and vertical position for all aspects of construction including:

- storm sewer
- subgrade
- base
- curb
- gutter
- curb and gutter
- curb ramps
- drainage structures
- structure layout
- bridges
- all retaining wall layout
- pavement

- pavement markings (temporary and permanent)
- barriers (temporary and permanent)
- freeway and local street lighting
- electrical installations
- supplemental control
- slope stakes
- traffic signals
- ITS
- FTMS
- paths
- utilities
- conduit
- water main
- sanitary sewer
- traffic control items
- fencing

B (Vacant)

C Construction

Add the following to standard spec 650.3.1 (5):

Confirm with engineer before using global positioning methods to establish the following:

1. Structure layout horizontal or vertical locations.
2. Concrete pavement vertical locations.
3. Curb, gutter, and curb and gutter vertical locations.
4. Concrete barrier vertical locations.
5. Storm Sewer layout horizontal or vertical locations, including structure centers, offsets, access openings, rim and invert elevations.
6. Sanitary sewer construction or other gravity-based drainage system, including structure centers, offsets, access openings, rim and invert elevations.

Replace standard spec 650.3.1.1(2) with the following:

- (6) Maintain neat, orderly, and complete survey notes, drawings, and computations used in establishing the lines and grades. This includes:
- Raw data files
 - Digital stakeout reports
 - Control check reports
 - Supplemental control files (along with method used to establish coordinates and elevation)
 - Calibration report

Make the survey notes and computations available to the engineer within 24 hours as the work progresses unless a longer period is approved by the engineer.

Replace standard spec 650.3.3.1 with the following:

Under the Survey Project bid item, global positioning system (GPS) machine guidance for conventional subgrade staking on all or part of the work may be substituted. The engineer may require reverting to conventional subgrade staking methods for all or part of the work at any point during construction if the GPS machine guidance is producing unacceptable results.

Replace standard spec 650.3.3.4.1 with the following:

The department will provide the contractor staking packet as described in the Construction and Materials Manual (CMM) 7.10. At any time after the contract is awarded, the available survey and design information may be requested. The department will provide that information within 5 business days of receiving the contractor's request. The department incurs no additional liability beyond that specified in standard spec 105.6 or standard spec 650 by having provided this additional information.

Add the following to standard spec 650.3.3.3.6.2 as paragraph four:

Record all subgrade elevation checks and submit a hard copy to the engineer within 24 hours or as requested by the engineer.

Add the following to standard spec 650.3 as subsections 650.3.15 and 650.3.16:

650.3.15 Water Main

Record all elevation data for the casing, grade breaks, water main pipe, bends, fittings, and all information necessary to accurately record the construction document. Submit a hard copy to the engineer within 24 hours or as requested by the engineer.

Set and maintain construction stakes or marks as necessary to achieve the required accuracy and to support the method of operations. Locate all pipe, valves and bends to within 0.10 feet horizontal and establish the elevations to within 0.10 feet vertical.

Set construction stakes at all water main valves, fittings and bends and at maximum interval of 50 feet for water main piping.

Provide the as-built xyz coordinates and elevations, in the project horizontal and vertical datum, of all bends, fittings, valves and tie in locations for the as-built plan. Also provide the locations of the casing ends, the elevation of the top of casing.

650.3.16 Sanitary Sewer

Record all elevation data for pipe inverts, outside drops, bends, fittings, casings and other information necessary to accurately record the construction document. Submit a hard copy to the engineer within 24 hours or as requested by the engineer.

Set and maintain construction stakes or marks as necessary to achieve the required accuracy and to support the method of operations. Locate all pipe inverts, drops to within 0.02 feet horizontally and to within 0.01 feet vertically. Set and maintain construction stakes or marks as necessary to achieve the required accuracy and to support the method of operations. Locate all pipe inverts, drops to within 0.02 feet horizontally and to within 0.01 feet vertically.

Provide the as-built xyz coordinates and elevations, in the project horizontal and vertical datum, of all tie in locations for the as-built plan. Also provide the locations of the casing ends, the elevation of the top of casing and the size and material of all pipes.

D Measurement

Replace standard spec 650.4 with the following:

- (1) The department will measure Survey Project 1060-27-74 as a separate single each unit, acceptably completed.

E Payment

Replace standard spec 650.5 with the following:

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0129	Survey Project 1060-27-74	EACH

Payment is full compensation for performing all survey work required to lay out and construct all work under this contract and for adjusting stakes to ensure compatibility with existing field conditions. The department will not make final payment for this item until the contractor submits all survey notes and computations used to establish the required lines and grades to the engineer within 24 hours of completing this work. Re-staking due to construction disturbance and knockouts will be performed at no additional cost to the department.

sef-650-005 (20181219)

120. Round Aluminum Sign Post System in Soft Surface 7-Foot, Item SPV.0060.0150.

A Description

Work under this item consists of furnishing and installing sign post, post anchor and sign mounting hardware at the locations shown on the plans. All sign posts shall be round tubular aluminum and installed as shown in the plans.

B Materials

Furnish a round aluminum 2" Schedule 40 6061-T6 Extruded Aluminum post with a length of 7 feet, a V-loc Soft-Soil 30" with cleanout bar post anchor for 2 3/8" round post (TAPCO SKU 034-00085, Traffic Safety Supply Company SKU DP00239, Custom Products Corporation Item RPORZVRB23VR2B or approved equal), 5/16" x 1 1/4" Stainless Steel Fender Washers and one- or two-sided sign mounting Z-brackets that fit 2 3/8 inch post or approved equal, as shown in plans.

C Construction

Install Round Aluminum Sign Post System in Soft Surface as shown in plans.

D Measurement

The department will measure Round Aluminum Sign Post System in Soft Surface 7-Foot by each unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0150	Round Aluminum Sign Post System in Soft Surface 7-Foot	EACH

Payment is full compensation for furnishing and placing the Round Aluminum Sign Post System in Soft Surface 7-Foot.

121. Round Aluminum Sign Post System in Soft Surface 10-Foot, Item SPV.0060.0151.

A Description

Work under this item consists of furnishing and installing sign post, post anchor and sign mounting hardware at the locations shown on the plans. All sign posts shall be round tubular aluminum and installed as shown in the plans.

B Materials

Furnish a round aluminum 2" Schedule 40 6061-T6 Extruded Aluminum post with a length of 10 feet, a V-loc Soft-Soil 30" with cleanout bar post anchor for 2 3/8" round post (TAPCO SKU 034-00085, Traffic Safety Supply Company SKU DP00239, Custom Products Corporation Item RPORZVRB23VR2B or approved equal), 5/16" x 1 1/4" Stainless Steel Fender Washers and one- or two-sided sign mounting Z-brackets that fit 2 3/8 inch post or approved equal, as shown in plans.

C Construction

Install Round Aluminum Sign Post System in Soft Surface as shown in plans and in accordance to 634.

D Measurement

The department will measure Round Aluminum Sign Post System in Soft Surface 10-Foot by each unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0151	Round Aluminum Sign Post System in Soft Surface 10-Foot	EACH

Payment is full compensation for furnishing and placing the Round Aluminum Sign Post System in Soft Surface 10-Foot.

122. Round Aluminum Sign Post System in Soft Surface 11-Foot, Item SPV.0060.0152.

A Description

Work under this item consists of furnishing and installing sign post, post anchor and sign mounting hardware at the locations shown on the plans. All sign posts shall be round tubular aluminum and installed as shown in the plans.

B Materials

Furnish a round aluminum 2" Schedule 40 6061-T6 Extruded Aluminum post with a length of 11 feet, a V-loc Soft-Soil 30" with cleanout bar post anchor for 2 3/8" round post (TAPCO SKU 034-00085, Traffic Safety Supply Company SKU DP00239, Custom Products Corporation Item RPORZVRB23VR2B or approved equal), 5/16" x 1 1/4" Stainless Steel Fender Washers and one- or two-sided sign mounting Z-brackets that fit 2 3/8 inch post or approved equal, as shown in plans.

C Construction

Install Round Aluminum Sign Post System in Soft Surface as shown in plans.

D Measurement

The department will measure Round Aluminum Sign Post System in Soft Surface 11-Foot by each unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0152	Round Aluminum Sign Post System in Soft Surface 11-Foot	EACH

Payment is full compensation for furnishing and placing the Round Aluminum Sign Post System in Soft Surface 11-Foot.

123. Round Aluminum Sign Post System in Concrete Surface 7-Foot, Item SPV.0060.0158.

A Description

Work under this item consists of furnishing and installing sign post, post anchor, anchoring cement and sign mounting hardware at the locations shown on the plans. All sign posts shall be round tubular aluminum and installed as shown in the plans.

B Materials

Furnish a round aluminum 2-inch Schedule 40 6061-T6 Extruded Aluminum post with a length of 7 feet, a V-loc Concrete 8-inch post anchor for 2 3/8-inch round post (TAPCO SKU 037-00012B, Traffic Safety Supply Company SKU DP00241, Custom Products Corporation Item RPORZVR12382OR or approved equal), 5/16-inch x 1 1/4-inch Stainless Steel Fender Washers, one- or two-sided sign mounting Z-brackets that fit 2 3/8-inch post and pourable hydraulic cement for setting of concrete post anchor, as shown in plans.

C Construction

Install Round Aluminum Sign Post System in Concrete Surface as shown in plans.

D Measurement

The department will measure Round Aluminum Sign Post System in Concrete Surface 7-Foot by each unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0158	Round Aluminum Sign Post System in Concrete Surface 7-Foot	EACH

Payment is full compensation for furnishing and placing the Round Aluminum Sign Post System in Concrete Surface 7-Foot.

124. Round Aluminum Sign Post System in Concrete Surface 10-Foot, Item SPV.0060.0159.

A Description

Work under this item consists of furnishing and installing sign post, post anchor, anchoring cement and sign mounting hardware at the locations shown on the plans. All sign posts shall be round tubular aluminum and installed as shown in the plans.

B Materials

Furnish a round aluminum 2-inch Schedule 40 6061-T6 Extruded Aluminum post with a length of 10 feet, a V-loc Concrete 8-inch post anchor for 2 3/8-inch round post (TAPCO SKU 037-00012B, Traffic Safety Supply Company SKU DP00241, Custom Products Corporation Item RPORZVR12382OR or approved equal), 5/16-inch x 1 1/4-inch Stainless Steel Fender Washers, one- or two-sided sign mounting Z-brackets that fit 2 3/8-inch post and pourable hydraulic cement for setting of concrete post anchor, as shown in plans.

C Construction

Install Round Aluminum Sign Post System in Concrete Surface as shown in plans.

D Measurement

The department will measure Round Aluminum Sign Post System in Concrete Surface 10-Foot by each unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0159	Round Aluminum Sign Post System in Concrete Surface 10-Foot	EACH

Payment is full compensation for furnishing and placing the Round Aluminum Sign Post System in Concrete Surface 10-Foot.

125. Round Aluminum Sign Post System in Concrete Surface 11-Foot, Item SPV.0060.0160.

A Description

Work under this item consists of furnishing and installing sign post, post anchor, anchoring cement and sign mounting hardware at the locations shown on the plans. All sign posts shall be round tubular aluminum and installed as shown in the plans.

B Materials

Furnish a round aluminum 2-inch Schedule 40 6061-T6 Extruded Aluminum post with a length of 10 feet, a V-loc Concrete 8-inch post anchor for 2 3/8-inch round post (TAPCO SKU 037-00012B, Traffic Safety Supply Company SKU DP00241, Custom Products Corporation Item RPORZVR12382OR or approved equal), 5/16-inch x 1 1/4-inch Stainless Steel Fender Washers, one- or two-sided sign mounting Z-brackets that fit 2 3/8-inch post and pourable hydraulic cement for setting of concrete post anchor, as shown in plans.

C Construction

Install Round Aluminum Sign Post System in Concrete Surface as shown in plans.

D Measurement

The department will measure Round Aluminum Sign Post System in Concrete Surface 11-Foot by each unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0160	Round Aluminum Sign Post System in Concrete Surface 11-Foot	EACH

Payment is full compensation for furnishing and placing the Round Aluminum Sign Post System in Concrete Surface 11-Foot.

126. Exposing Existing Infrastructure Paved Area, Item SPV.0060.0170.

A Description

This work includes locating and exposing existing infrastructure in paved areas as directed by the engineer. The contractor shall be responsible for compliance with s.182.0175 (2), Stats., with respect to precautions to be taken to avoid and prevent damage to utility facilities. The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. Conform to Wisconsin State Statute 182.0175 (2) and Wisconsin Administrative code Trans 220. The work includes exposing existing infrastructure, including utilities, under paved surfaces and providing both lateral and depth measurements for use in determining potential infrastructure conflict solutions, and backfilling the locate.

B Materials

B.1 Backfill Slurry

Utilize backfill slurry as specified elsewhere in these special provisions.

C Construction

C.1 General

The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. This item will only be used as determined by the department for unique locations as directed by the engineer. It does not remove the contractor's obligation to locate utilities as specified by Wisconsin Administrative code Trans 220 and Wisconsin State Statute 182.0175. The engineer will direct all exposing existing infrastructure in writing. Coordinate infrastructure exposures with the engineer and notify the infrastructure owner or their agents of this work 2 working days in advance so that they may be present when the work commences.

C.2 Excavation

Remove all paved surfaces at locations where the existing infrastructure is being exposed. Saw or remove concrete and asphaltic pavements to the nearest joint. Remove all pavement surfaces in such a way that all existing edges consist of a true line having a perpendicular edge with no unraveling. Maintain drainage at all times according to standard spec 205.3.3. Take precautions, including temporary shoring, in order to prevent any undermining of the existing roadway. Perform work according to all applicable laws, ordinances, rules, regulations, and OSHA standards.

Expose all infrastructure locations within a given location to a minimum depth of 18-inches below the bottom of each infrastructure. Excavate in a manner that protects the integrity of the infrastructure and prevents any damage to wrappings or protective coatings such as by any mechanical method or hand digging. Notify the infrastructure owner promptly if damage or interruption of service occurs. Repair all damage caused to such infrastructure resulting from negligence or carelessness at own expense.

Take all lateral and depth measurements in US feet and tenths thereof. Identify horizontal locations of each exposed infrastructure with a coordinate northing and easting referenced to the Wisconsin County Coordinate System (WCCS), Milwaukee County, NAD 83 (97). Provide vertical elevations for each exposed infrastructure and reference to NAVD 88 (91).

The infrastructure location shall remain exposed and available for visual inspection until the completion of all work in a given location. If the infrastructure shall remain exposed overnight or for prolonged periods of time, protect the location with traffic-rated steel plating, safety barriers, and all necessary traffic control devices that may be required under applicable standards or as directed by the engineer.

C.3 Backfilling

Upon completion of the infrastructure exposure, restore the location in kind to its original condition. When exposed infrastructure locations fall within local streets or city right-of-way, use slurry backfill to fill the entire location to the subgrade elevation.

Restore concrete pavement and concrete base course to the depth found in the existing roadway. Replace all locations that fall within live lanes of any roadway or pedestrian traffic with a high early-strength concrete pavement mix design having a depth equivalent to the existing pavement structure unless directed otherwise by the engineer. Locations that are closed to through traffic may use an approved concrete pavement mix conforming to standard spec 501. If directed by the engineer, tie concrete pavement and/or dowe it to the existing pavement according to the standard detail drawing for concrete pavement. All locations requiring asphaltic pavement shall consist of HMA Pavement Type E-3 unless otherwise directed by the engineer. Place the HMA pavement in lifts to a depth as directed by the

engineer. Apply tack coat to composite pavement structures and between lifts. Alternate restoration methods may be used upon written approval from the engineer.

Place base aggregate dense between the subgrade surface and the bottom of the pavement.

C.4 Documentation

Provide documentation to the engineer and include the coordinates, elevations, and sketches of the infrastructure locations tied to known features in the plans. Reference each infrastructure to a proposed alignment with a station and offset. Where near a ramp, reference the ramp alignment. Document the size and/or diameter, composition, and a description of each infrastructure and the location of the elevation with respect to each infrastructure noted. Supply digital photographs of the uncovered infrastructure to the engineer in .jpeg format for future reference.

D Measurement

The department will measure Exposing Existing Infrastructure Paved Area as a unit for each location. A location may have multiple infrastructures located within the same exposure area. An exposure area will include all infrastructures within 6 lateral feet of each other and payment will only be made for one unit regardless of the number of infrastructures exposed. If the distance from the existing ground elevation, located above the existing infrastructure, to a point 18 inches below the exposed infrastructure is between 0 and 6 feet, the department will measure each location as a single unit of work. If the distance from the existing ground elevation, located above the existing infrastructure, to a point 18 inches below the exposed infrastructure is greater than 6 feet and less than 12 feet, the department will pay for the item as two units of work.

E Payment

The department will pay for the measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0170	Exposing Existing Infrastructure Paved Area	EACH

Payment is full compensation for mobilization; for all excavation; for disposing of all materials; for locating all infrastructure within each respective location; for providing documentation and photographs of infrastructure locations to the engineer; for all surveying associated with exposing existing infrastructure; for all maintenance of the location during construction; for all traffic control, safety barriers, and steel plating required; for temporary shoring; and for all finishing items including, but not limited to, base aggregate dense, slurry backfill, concrete pavement, HMA pavement, curb and gutter, and sidewalk located above the subgrade elevation.

127. Exposing Existing Infrastructure Unpaved Area, Item SPV.0060.0171.

A Description

This work includes locating and exposing existing infrastructure in unpaved areas as directed by the engineer. The contractor shall be responsible for compliance with s.182.0175 (2), Stats., with respect to precautions to be taken to avoid and prevent damage to utility facilities. The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. Conform to Wisconsin State Statute 182.0175 (2) and Wisconsin Administrative code Trans 220. The work includes exposing existing infrastructure, including utilities, under unpaved surfaces and providing both lateral and depth measurements for use in determining potential infrastructure conflict solutions, and backfilling the locate.

B Materials

B.1 Backfill Slurry

Utilize backfill slurry as specified elsewhere in these special provisions.

C Construction

C.1 General

The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. This item will only be used as determined by the department for unique locations as directed by the engineer. It does not remove the contractor's obligation to locate utilities as specified by Wisconsin Administrative code Trans 220 and Wisconsin State Statute 182.0175. The engineer will direct all exposing existing infrastructure in writing. Coordinate infrastructure exposures

with the engineer and notify the infrastructure owner or their agents of this work 2 working days in advance so that they may be present when the work commences.

C.2 Excavation

Remove all unpaved surfaces at locations where the existing infrastructure is being exposed. Maintain drainage at all times according to standard spec 205.3.3. Take precautions, including temporary shoring, in order to prevent any undermining of the existing roadway. Perform work according to all applicable laws, ordinances, rules, regulations, and OSHA standards.

Expose all infrastructure locations within a given location to a minimum depth of 18-inches below the bottom of each infrastructure. Excavate in a manner that protects the integrity of the infrastructure and prevents any damage to wrappings or protective coatings such as by any mechanical method or hand digging. Notify the infrastructure owner promptly if damage or interruption of service occurs. Repair all damage caused to such infrastructure resulting from negligence or carelessness at own expense.

Take all lateral and depth measurements in US feet and tenths thereof. Identify horizontal locations of each exposed infrastructure with a coordinate northing and easting referenced to the Wisconsin County Coordinate System (WCCS), Milwaukee County, NAD 83 (97). Provide vertical elevations for each exposed infrastructure and reference to NAVD 88 (91).

The infrastructure location shall remain exposed and available for visual inspection until the completion of all work in a given location. If the infrastructure shall remain exposed overnight or for prolonged periods of time, protect the location with traffic-rated steel plating, safety barriers, and all necessary traffic control devices that may be required under applicable standards or as directed by the engineer.

C.3 Backfilling

Upon completion of the infrastructure exposure, restore the location in kind to its original condition. Use slurry backfill, conforming to standard spec 501, to backfill the exposed infrastructure locations to the subgrade elevation except for areas located within local streets. In grassy areas, place 6-inches of topsoil, sod or seed and mulch, and fertilizer. Alternate restoration methods may be used upon written approval from the engineer.

C.4 Documentation

Provide documentation to the engineer and include the coordinates, elevations, and sketches of the infrastructure locations tied to known features in the plans. Reference each infrastructure to a proposed alignment with a station and offset. Where near a ramp, reference the ramp alignment. Document the size and/or diameter, composition, and a description of each infrastructure and the location of the elevation with respect to each infrastructure noted. Supply digital photographs of the uncovered infrastructure to the engineer in .jpeg format for future reference.

D Measurement

The department will measure Exposing Existing Infrastructure Unpaved Area as a unit for each location. A location may have multiple infrastructures located within the same exposure area. An exposure area will include all infrastructures within 6 lateral feet of each other, and payment will only be made for one unit regardless of the number of infrastructures exposed. If the distance from the existing ground elevation, located above the existing infrastructure, to a point 18 inches below the exposed infrastructure is between 0 and 6 feet, the department will measure each location as a single unit of work. If the distance from the existing ground elevation, located above the existing infrastructure, to a point 18 inches below the exposed infrastructure is greater than 6 feet and less than 12 feet, the department will pay for the item as two units of work.

E Payment

The department will pay for the measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0171	Exposing Existing Infrastructure Unpaved Area	EACH

Payment is full compensation for mobilization; for all excavation; for disposing of all materials; for locating all infrastructure within each respective location; for providing documentation and photographs of infrastructure locations to the engineer; for all surveying associated with exposing existing infrastructure; for all maintenance of the location during construction; for all traffic control, safety barriers, and steel plating required; for temporary shoring; for furnishing backfill slurry and backfilling the locate.

128. Vibration Control and Monitoring of 122-Inch Combined Sewer, Item SPV.0060.0200.

A Description

Vibration producing activities such as pile driving, vibratory compaction, pavement breaking, or operation of heavy construction equipment may be required for construction of this project. The Contractor is advised that structures are located close to the proposed work and that construction activities shall be conducted so as to preclude damage to same. The Contractor is responsible for any damage caused by his activities.

The vibration control and monitoring shall consist of two parts. A preconstruction survey of existing 122-inch combined sewer pipe and structures adjacent to the proposed Temporary Shoring Left in Place B-40-57 shall be conducted by the contractor prior to the commencement of any vibration producing activity. The survey shall include a visual inspection, photographs, and a written report describing the existing defects in the pipe being inspected and any structural elements that may require support or repair. The second part, performed after vibration causing construction activities, shall also include a visual inspection, photographs, describing any change in pipe and storm sewer structure condition and proper corrective action taken to repair or replace any portion of pipe and/or structure with a written report shall be submitted detailing all activities.

B (Vacant)

C Construction

Prior to any construction activities, thoroughly inspect the pipe and storm sewer structures for existing defects, including interior walls. Submit a written report of the inspector's name, date of inspection, descriptions and locations of defects, and photographs. The intent of the written report and photographs is to procure a record of the general physical condition of the pipe and storm sewer structure interior walls.

Install crack displacement monitoring gages as appropriate across any significant existing cracks to help verify any additional distress if it should develop. Establish the appropriate location, number, and type of gages. The gages will be read prior to vibration producing activities, as well as during these activities. Obtain data on a weekly basis for as long as vibration-producing activities are being conducted. Submit a report summarizing the data. Alert the Engineer if any significant movement is detected by the monitoring gages.

The photographs shall be taken by a professional photographer capable of producing sharp, grain free, high-contrast-colored pictures with good shadow details. The photographs shall be 3½ inch by 5-inch color prints, glossy, and mounted in protective storage pages with clear slip-in pockets and clear background. Each sheet shall hold four prints. The back of each photograph shall contain the following information:

ID _____

Location _____

View looking _____

Date _____

Photographer _____

Prior to the start of any construction activities pertinent to this survey, submit a copy of the written report and photographs to the engineer.

Pumping may be required for initial survey, monitoring, any repairs if required and final inspection.

Provide the corrective action procedure in writing to the Engineer and obtain acceptance from the Engineer prior to starting the repair work for the damaged portion.

After the construction activities are complete, conduct another survey in the same manner, take photographs, and submit another written report to the engineer.

In lieu of photographs, a professional videographer may be hired to use a video camera capable of producing a video with the clarity required to perform this work.

D (Vacant)

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0200	Vibration Control and Monitoring of 122-Inch Combined Sewer	EACH

Payment is full compensation for vibration control and monitoring of 122-inch combined sewer pipe and structures including all work required to complete the surveys and required corrective work. No separate payment will be made for vibration control, monitoring and repairing any damaged portion of 122-inch pipe and/or combined sewer structures.

129. Crash Cushions Temporary Low Maintenance Left In Place, Item SPV.0060.0552.

A Description

This special provision describes providing and removing Crash Cushions Temporary Low Maintenance Left In Place in accordance to pertinent requirements of standard spec 614.

Crash Cushions Temporary Left In Place becomes property of the department after final acceptance by the engineer.

B Materials

Use materials as described in standard spec 614.2.7 for the installation of temporary crash cushions, except provide crash cushions meeting the requirements of Crash Cushions Permanent Low Maintenance from the department's APL.

C Construction

Perform work as specified in standard spec 614.3.4 except meeting requirements for permanent installations and immediate replacement of components damaged during construction.

D Measurement

The department will measure Crash Cushions Temporary Low Maintenance Left In Place as each crash cushion, acceptably completed and left in place after final acceptance.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0552	Crash Cushions Temporary Low Maintenance Left In Place	EACH

Payment is full compensation for providing crash cushions; for the foundation pads, connections, transitions, and backup blocks; for installing, maintaining, and replacing damaged components; and leaving in place the crash cushions.

130. Emergency Response to Traffic Incident Involving Concrete Barrier Temporary Precast, Item SPV.0060.0554.

A Description

This special provision describes providing prompt response to an emergency repair request for damaged and/or dislodged temporary concrete barrier, including temporary concrete barrier to be left in place, and existing temporary concrete barrier located within the project limits that is damaged or displaced due to a vehicular collision during the time this contract is in effect.

B (Vacant)

C Construction

The contractor shall provide staff, equipment, and materials to the incident site within one hour of receiving a repair request from the responding agency. The contractor shall consult with the department's representative on potential repair or replacement options to restore the temporary concrete barrier to proper working condition. Staff and equipment deployed shall be capable of completing the needed repairs as quickly as possible once repair work is started. Repair work shall be completed off the traveled way to the maximum extent allowable. The contractor shall provide a time

log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating and completing repair efforts) shall be submitted to the engineer at the pre-construction meeting. This person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff and equipment within one hour of receiving a repair request, the department will assess the contractor \$500 in liquidated damages for each 15-minute interval that the contractor is not present following the allotted one-hour response time. Increments of 15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Liquidated damages will be assessed under the administrative item Failing to Open Road to Traffic.

For contractor owned temporary barrier, repair work shall be completed according to standard spec 603 and 643, and as directed by the engineer.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Traffic Incident Involving Concrete Barrier Temporary Precast as each individual response, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0554	Emergency Response to Traffic Incident Involving Concrete Barrier Temporary Precast	EACH

Payment is full compensation for providing a prompt staff response to an emergency repair request for a damaged concrete barrier temporary precast located within the project limits.

The cost of providing the appropriate level of on-call staff for 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

131. Emergency Response to Traffic Incident Involving Crash Cushion, Item SPV.0060.0555.

A Description

This special provision describes providing prompt response to an emergency repair request involving a damaged crash cushion located within the project limits that is displaced or damaged due to a vehicular collision during the time this contract is in effect.

B (Vacant)

C Construction

The contractor shall provide appropriate staff to the incident site within one hour of receiving a repair request from the responding agency. Staff deployed shall be capable of immediately assessing the severity of the damage to the device and consult with the department's representative on potential repair or replacement options and the projected timeline to restore the roadside device to its proper working condition. The contractor shall provide a time log of when the repair request was received and when staff arrived at the incident site. This information shall be submitted to the engineer, for verification, within 24 hours of the repair completion.

Contact information for the contractor's responsible party (the person or persons in charge of coordinating repair efforts) shall be submitted to the engineer at the pre-construction meeting. This

person(s) shall be available 24/7 during the duration of this contract. The contact information for the department's representative will be supplied to the contractor at the pre-construction meeting.

If the contractor fails to be on-site of an incident with appropriate staff within one hour of receiving a repair request, the department will assess the contractor \$500 in liquidated damages for each 15-minute interval that the contractor is not present following the allotted one-hour response time. Increments of

15 minutes or less will be assessed as a 15-minute increment. The engineer, or designated representative, will be the sole authority in determining assessable 15-minute increments. Liquidated damages will be assessed under the administrative item Failing to Open Road to Traffic.

Repair work shall be completed according to standard spec 614, and as directed by the engineer. Once repair work has been started, work shall continue until completion. Repair work shall be completed off the traveled way to the maximum extent allowable.

Additional traffic control measures may be required depending on the severity and duration of the incident. The contractor shall provide any needed traffic control measures as directed by the department's representative.

D Measurement

The department will measure Emergency Response to Traffic Incident Involving Crash Cushion as each individual response, acceptably completed during the time this contract is in effect.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0555	Emergency Response to Traffic Incident Involving Crash Cushion	EACH

Payment is full compensation for providing prompt response to an emergency repair request for displaced or damaged crash cushion located within the project limits.

The cost of providing the appropriate level of on-call staff, equipment, and materials for 24/7 incident response shall be included in the Mobilization bid item for this project.

The department will pay for any additional traffic control measures, if required, under the respective traffic control bid items in the contract.

132. Emergency Response to Pavement Repair, Item SPV.0060.0556.

A Description

This special provision describes mobilizing personnel, equipment, traffic control, and materials to the project site to repair the existing pavement for emergencies as the engineer directs. An emergency is a sudden occurrence of a serious and urgent nature, beyond normal maintenance of the existing pavement.

B (Vacant)

C Construction

Mobilize with sufficient personnel, equipment, traffic control, materials, and incidentals on the jobsite within 4 hours of the engineer's written order to repair the existing pavement on an emergency basis.

D Measurement

The department will measure Emergency Response to Pavement Repair as each individual Response, acceptably completed. The department will pay separately for delivery and installation of pavement repair materials under the other bid items in this contract. Quantity for Emergency Pavement Repair has been allocated in this contract as found in the plans.

The department will pay for any traffic control measures under the respective traffic control bid items in the contract.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0556	Emergency Response to Pavement Repair	EACH

Payment is full compensation for the staged moving of personnel, moving equipment, setting up and removing traffic control, and moving materials. The department will pay separately for delivery and installation of pavement repair materials under the other bid items in this contract. The department will pay separately for traffic control items and materials under other bid items in this contract.

sef-999-025 (20170310)

133. Fixed Message Sign Portable Support Special, Item SPV.0060.0557.

A Description

This special provision describes the construction of special portable sign supports for fixed message signs for shielded applications only, as the plans show.

B Materials

Use lumber and hardware conforming to standard spec 634.2.1.

C Construction

Construct the Fixed Message Sign Portable Support Special as the plans show. Remove at the completion of the work.

D Measurement

The department will measure Fixed Message Sign Portable Support Special as each location, 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.0060.0557	Fixed Message Sign Portable Support Special	EACH

Payment is full compensation for providing, maintaining, and removing fixed message sign special portable supports.

sef-634-000 (20170310)

134. Maintain and Repair Existing Crash Cushions, Item SPV.0060.0559.

A Description

This special provision describes maintaining and repairing existing crash cushions located within the project limit that are damaged within the duration of this contract to standard spec 614 and as hereinafter provided.

B Materials

Furnish any replacement materials for the existing permanent crash cushions according to the pertinent requirements of standard spec 614.2.

C Construction

Maintain and repair the existing crash cushion according to standard spec 614.3.4 as directed by the engineer.

D Measurement

The department will measure Maintain Existing Crash Cushions as each individual crash cushion location, 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.0060.0559	Maintain and Repair Existing Crash Cushions	EACH

Payment is full compensation for maintaining and repairing the crash cushions.

135. Maintain and Repair Existing Sand Barrel Arrays, Item SPV.0060.0560.**A Description**

This special provision describes maintaining and repairing existing sand barrel arrays located within the project limit that are damaged within the duration of this contract to standard spec 614 and as hereinafter provided.

B Materials

Furnish any replacement materials for the existing permanent sand barrel arrays according to the pertinent requirements of standard spec 614.2.

C Construction

Maintain and repair the existing sand barrel arrays according to standard spec 614.3.3 as directed by the engineer.

D Measurement

The department will measure Maintain Existing Sand Barrel Arrays as each individual sand barrel array location, 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.0060.0560	Maintain and Repair Existing Sand Barrel Arrays	EACH

Payment is full compensation for maintaining and repairing the sand barrel array.

136. Traffic Control Close-Open Freeway to Freeway System Ramp, Item SPV.0060.0564.**A Description**

This special provision describes closing and re-opening a freeway-to-freeway system ramp.

B (Vacant)**C Construction**

Install or reposition traffic control devices required for closing a freeway system ramp and adjacent auxiliary lanes. Remove or return traffic control devices to their previous configuration when the closure is no longer required.

D Measurement

The department will measure Traffic Control Close- Open Freeway to Freeway System Ramp by each individual closure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0564	Traffic Control Close- Open Freeway to Freeway System Ramp	EACH

Payment is full compensation for closing and re-opening a freeway-to-freeway system ramp. Traffic Control devices will be paid separately.

sef-643-002 (20180627)

137. Traffic Control Close-Open Freeway Entrance Ramp, Item SPV.0060.0565.

A Description

This special provision describes closing and re-opening a freeway entrance ramp and associated auxiliary lane.

B (Vacant)

C Construction

Install or reposition traffic control devices required for closing a freeway entrance ramp and adjacent auxiliary lanes. Remove or return traffic control devices to their previous configuration when the closure is no longer required.

D Measurement

The department will measure Traffic Control Close-Open Freeway Entrance Ramp by each individual ramp closure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0565	Traffic Control Close-Open Freeway Entrance Ramp	EACH

Payment is full compensation for closing and re-opening a freeway entrance ramp. Traffic Control devices will be paid separately.

sef-643-001 (20180627)

138. Traffic Control Full Freeway Closure, Item SPV.0060.0566.

A Description

This special provision describes closing and re-opening a freeway or expressway.

B (Vacant)

C Construction

Install or reposition traffic control devices required for a full freeway closure. Remove or return traffic control devices to their previous configuration when the full closure is no longer required.

D Measurement

The department will measure Traffic Control Full Freeway Closure by each individual freeway closure that is set up and later removed in each traffic direction, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0566	Traffic Control Full Freeway Closure	EACH

Payment is full compensation for closing and re-opening the freeway. Traffic Control devices will be paid separately.

sef-643-003 (20180627)

139. Traffic Control Signs Left In Place, Item SPV.0060.0567.

A Description

This special provision describes furnishing, installing, and maintaining Traffic Control Signs Left In Place as shown on the plans.

Traffic Control Signs Left In Place becomes property of the department after final acceptance by the engineer.

B Materials

Use materials in accordance to the pertinent provisions of section 643.2 of the standard specifications and as hereinafter provided.

C Construction

Perform work in accordance to the pertinent provisions of section 643.3 of the standard specifications, as shown on the plans, and as hereinafter provided.

D Measurement

The department will measure Traffic Control Signs Left In Place as each sign acceptably left in place.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0567	Traffic Control Signs Left In Place	EACH

Payment is full compensation for furnishing, installing, maintaining, and leaving in place traffic control signs.

140. Traffic Control Warning Lights Type A Left In Place, Item SPV.0060.0569.

A Description

This special provision describes furnishing and installing Traffic Control Warning Lights Type A Left In Place as shown on the plans.

Traffic Control Warning Lights Type A Left In Place will become property of the department after final acceptance by the engineer.

B Materials

Use materials in accordance to the pertinent provisions of section 643.2 of the standard specifications and as hereinafter provided.

C Construction

Perform work in accordance to the pertinent provisions of section 643.3 of the standard specifications, as shown on the plans, and as hereinafter provided.

D Measurement

The department will measure Traffic Control Warning Lights Type A Left In Place as each unit acceptably left in place.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0569	Traffic Control Warning Lights Type A Left In Place	EACH

Payment is full compensation for furnishing, installing, maintaining, and leaving in place Traffic Control Warning Lights Type A.

141. Traffic Control Barricades Type III Left In Place, Item SPV.0060.0570.

A Description

This special provision describes furnishing and installing Traffic Control Barricades Type III Left In Place as shown on the plans.

Traffic Control Barricades Type III Left In Place will become property of the department after final acceptance by the engineer.

B Materials

Use materials in accordance to the pertinent provisions of section 643.2 of the standard specifications and as hereinafter provided.

C Construction

Perform work in accordance to the pertinent provisions of section 643.3 of the standard specifications, as shown on the plans, and as hereinafter provided.

D Measurement

The department will measure Traffic Control Barricades Type III Left In Place as each unit acceptably left in place.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0570	Traffic Control Barricades Type III Left In Place	EACH

Payment is full compensation for furnishing, installing, maintaining, and leaving in place Traffic Control Barricades Type III.

142. Traffic Control Local Road Lane Closures, Item SPV.0060.0571.

A Description

This special provision describes closing and reopening a local road lane or lanes, including full closure conforming to standard spec 643, the plans, and as directed by the engineer.

B (Vacant)

C Construction

Install or reposition traffic control devices required for closing a local road or lanes of a local road. Remove or return traffic control devices to their previous configuration when the closure is no longer required.

D Measurement

The department will measure Traffic Control Local Road Lane Closures by each individual closure acceptably completed. The department will not measure the closure of a local road not deemed necessary by the engineer.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0571	Traffic Control Local Road Lane Closures	EACH

Payment is full compensation for closing and re-opening a local road lane or lanes. Traffic Control devices will be paid separately.

sef-643-035 (20171004)

143. Thrie Beam Connection to Concrete Barrier Temporary Precast, Item SPV.0060.0572.

A Description

This special provision describes temporary connections between two Concrete Barrier Temporary Precast alignments.

B Materials

Use materials according to standard spec 603.2 and for steel rail and fittings according 614.2

C Construction

Where temporary barrier abuts an adjacent temporary barrier alignment, connect the two temporary alignments together with steel rail and install concrete anchor on the first abutting section of temporary barrier.

D Measurement

The department will measure Thrie Beam Connection to Concrete Barrier Temporary Precast as each individual connection acceptably complete. Anchoring barrier will be measured separately.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.0572	Thrie Beam Connection to Concrete Barrier Temporary Precast	EACH

Payment is full compensation for each installation including providing steel rail connections and all fittings for temporary barrier installations abutting adjacent temporary barrier.

144. Poles Wood 60-FT, Item SPV.0060.1001.

A Description

This special provision describes furnishing and installing a 60 foot wood pole and other incidental items as required as shown on the plans, in accordance to standard specs 651 and 657, and as hereinafter provided.

B Materials

Furnish wood poles that are Class 4 or larger with a 60-foot minimum overall length. The poles shall be shaved the entire length and conforming to ANSI 05.1.

C Construction

Install the pole in accordance to the pertinent provisions of section 657.3.1.1 of the standard specs and as shown on the plans. As necessary, install #4 AWG grounding wire exothermically bonded to a 5/8-inch by 8-foot copper clad grounding electrode, cable guard, NEMA 3R junction box 3ft above grade level for splice, and incidentals as necessary.

D Measurement

The department will measure Poles Wood 60-Ft 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.0060.1001	Poles Wood 60-FT	EACH

Payment is full compensation for furnishing and installing wood poles; junction boxes, grounding wire including grounding lugs, all hardware and fittings, guy wires, leveling shims, corrosion prevention, and for all excavation and backfill.

145. Wood Pole Lighting 60-FT, Item SPV.0060.1002.

A Description

This special provision describes furnishing and installing a 60-foot wood pole, arm(s) and floodlight(s), junction box, grounding system, and a lightning protection system, as shown on the plans, in accordance to standard specs 651, 657, and 659, and as hereinafter provided.

B Materials

Furnish wood poles, Class 4 or larger with a 60-foot minimum overall length. The poles shall be western red cedar in accordance to ANSI standards 05.1.

Luminaire arm and luminaire for wood pole lighting units and temporary wood pole lighting units shall be per standard specs 657.2 and 659.2, respectively.

Floodlight mounting bracket arms for wood pole lighting units will be as shown on plan details. The floodlights are provided under separate bid item.

C Construction

This work shall be done in accordance to the pertinent provisions of standard spec 651.3 and as shown on the plans. Install #4 AWG equipment grounding wire exothermically bonded to a 5/8 inch by 8 foot copper clad grounding electrode. Install cable guard, NEMA 3R junction box near mounting arm, and NEMA 4X junction box at 3 feet above grade for fuses and splice on wood pole units. Install air terminal with #2 AWG grounding wire exothermically bonded to a 5/8-inch by 8-foot copper clad grounding electrode for lightning protection. Install #2 AWG bare copper exothermically bonding between grounding electrodes. Install conduit and wiring between junction boxes, wire racks, and required hardware as necessary and as shown on lighting plans and detail drawings.

Install luminaire arm for wood pole lighting units as shown on the plans and details and as per applicable portion of standard specs 657.3 and 659.3.

D Measurement

The department will measure Wood Pole Lighting 60-Ft as each individual unit, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1002	Wood Pole Lighting 60-FT	EACH

Payment is full compensation for providing and installing items as mentioned above; for all excavation and backfill.

146. Luminaires Utility Floodlight, Item SPV.0060.1004.

A Description

This special provision describes furnishing and installing 1000 watt HPS floodlight luminaires or LED equivalent with photoelectric control in both a 240V and 480 Volt configuration as shown on the plans, in accordance to pertinent provisions of standard spec 659, and as hereinafter provided.

B Materials

Appropriate 240V Floodlight Models include or approved equal:

American Electric Lighting, Model 77X1SRNMT266TMLC1023PCSS

Cooper Lighting, Model HPNKS1000LLOA/RA1016

Lithonia, Model TFA1000SRBTBFSC22PERLPI

Appropriate 480V Floodlight Models include or approved equal:

American Electric Lighting, Model 77X1SRN5T466TMLC1023PCSS

Cooper Lighting, Model HP-NKS-1000-480V-LL-OA/RA1027

Lithonia, Model TFA-1000S-RB-480FTS-C22-PE4-LPI

Appropriate 240/480V Floodlight Models include or approved equal:

American Electric Lighting, Model ACP2LEDP10MVOLTT66BLANK

Phillips Signify, Model FLDLA23740WFLSFC240

Cree Lighting, Model OSQXB50L40K766UL

Units shall have a 6X6 or 7X7 light distribution. Units shall have a photoelectric cell for control of the fixture operation.

C Construction

The following lighting control cabinets will supply 480V power to flood lights for temporary lighting: HL-40-PH.

The following lighting control cabinets will supply 240/480V power to flood lights for temporary lighting: HL-40-MT.

The contractor shall install the luminaire on the light poles at locations specified in lighting plan and in accordance to standard specs 659.2 and 659.3, wired and fused in accordance to standard spec 659.3.2 and as shown on the plans. Luminaires shall be orientated (0 deg = North) as shown and at an angle of 60-degrees from the vertical

D Measurement

The department will measure Luminaires Utility Floodlight as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1004	Luminaires Utility Floodlight	EACH

Payment is full compensation for providing materials including luminaires, fittings, brackets, hardware and attachments; and for luminaire fusing.

147. Poles Type 30-AL-BD, Item SPV.0060.1005.

A Description

This special provision describes furnishing and installing a 30'-0" bolt down aluminum street lighting pole assembly. All parts not specifically mentioned, which are necessary or which are regularly furnished in order to provide this pole, shall be furnished, and shall conform in strength, quality of material and workmanship to that usually provided by the engineering practice indicated in this specification. All work shall be in accordance with section 651.

The aluminum street lighting pole assembly to be furnished under this specification is to be round and tapered. The pole assembly shall be complete with shaft, pole cap, hardware, and base coating. All screws and fasteners shall be stainless steel or other approved materials.

The bolt down 30'-0" aluminum street lighting pole assembly shall be in accordance with this specification and City of Milwaukee (DPW-Infrastructure Services Division) Drawing #B-14-14.

Minor deviations on the rest of the pole assembly that will not affect the strength, appearance, vertical and horizontal stability of the pole will be permitted, but all such deviations shall be approved by the City of Milwaukee Street Lighting Engineering.

The work under this item is for furnishing and installation of the following materials as shown in plans and in accordance with the following.

B Materials

B.1 Pole

The 30'-0" aluminum pole shaft shall be tapered from the top of the pole to the mounting plate. Dimensions from the pole top to the bracket mounting plate and from the base plate to the top of the pole, as shown on the drawing, shall be rigidly adhered to.

The base plate shall be cast from either type 319 or 356T6 aluminum. The four elongated mounting holes shall be on 90-degree centers on an 11" bolt circle. The mounting slots shall be sized for 1-inch mounting bolts. The base shall be welded to the shaft so the arms bisect the angle between mounting holes at 45 degrees.

The poles shall be built as a double bracket unit and supplied with one cover plate per pole.

The pole cap is to be cast aluminum, and be secured to the pole by three equally spaced ¼"-20 hex head stainless steel screws.

B.1.2 Hand Hole & Grounding

The hand hole shall be 4" x 6" nominal. A ¼"-20 NC taped hole and bolt shall be provided in the shaft opposite the hand hole for grounding purposes. The hand hole cover shall be secured to the pole using ¼"-20 NC by ¾" long 18-8 stainless steel button head Torx T27H tamper proof screws. The hand hole is to be 90 degrees from the arms. The center line of the hand hole shall be 14 inches above the mounting plate.

B.1.3 Loading and Stability

The 30'-0" assembly furnished under this specification shall support a fifty-pound fixture of an EPA of 3 on each arm when equipped with a pair of 6' upsweep arms. All pole designs shall meet the latest revision of the AASHTO specifications for these poles as defined in their STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. The manufacturer shall submit engineering calculations for lighting poles to show that maximum stress and deflections do not exceed specified performance requirements under full design loading, as well as other certified reports and data which indicate that the poles meet all load requirements, within 30 days of the bid award. Engineering calculations shall be prepared and sealed by an engineer licensed in the State of Wisconsin.

The entire horizontal and vertical "wind sail" area of the pole assembly subject to wind load including arm and luminaire shall be designed to withstand the AASHTO standard specifications, from above, for wind load requirements for a 90 MPH wind load with gust factor computed per section 3.8.5. and height and exposure factors from table 3-5.

All Welding shall be in accordance with the latest applicable A.S.M.E. Standards.

The manufacturer warrants that the pole supplied will be of merchantable quality will conform to applicable specifications, drawings, designs, samples, or descriptions, will be free from defects in materials and workmanship and will be fit for the particular purpose intended.

A plaque with the pole number as shown on the plans shall be affixed onto the pole shaft.

B.2. Riser Cable

Pole is to be wired as shown on the plans. A separate riser cable will be required to be installed inside of pole for each lighting fixture on the pole. The riser cable shall be 40 feet in length and cut from copper 2#12 UF with ground cable. One wire shall be black, the other shall be white, and the ground can be either bare or green. All splicing is to be done inside the metal housing. The ground wires shall be spliced inside the metal housing and grounded to the housing and each fixture. The cable shall conform to NEC Article 340. The riser cable shall be continuous without splices. The electrical system in use utilizes a full system ground. The neutral is not to be grounded at any point.

C Construction

Install the bolt down pole as specified in the plan and details. After razing the pole use normal pole shaft raking techniques to ensure the centerline of shaft appears vertical to the horizon.

D Measurement

The department will measure Poles Type 30-AL-BD as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1005	Poles Type 30-AL-BD	EACH

Payment is full compensation for the pole, riser cable(s), and all connections. This bid price also includes for furnishing labor, equipment, coordination and all materials and incidentals necessary to complete the work.

148. Poles Type 25-AL-BD, Item SPV.0060.1006.

A Description

This special provision describes furnishing and installing a 25'-0" bolt down aluminum street lighting pole assembly. All parts not specifically mentioned, which are necessary or which are regularly furnished in order to provide this pole, shall be furnished, and shall conform in strength, quality of material and workmanship to that usually provided by the engineering practice indicated in this specification. All work shall be in accordance with section 651.

The aluminum street lighting pole assembly to be furnished under this specification is to be round and tapered. The pole assembly shall be complete with shaft, pole cap, hardware, and base coating. All screws and fasteners shall be stainless steel or other approved materials.

The bolt down 25'-0" aluminum street lighting pole assembly shall be in accordance with this specification and City of Milwaukee (DPW-Infrastructure Services Division) Drawing #B-14-13.

Minor deviations on the rest of the pole assembly that will not affect the strength, appearance, vertical and horizontal stability of the pole will be permitted, but all such deviations shall be approved by the City of Milwaukee Street Lighting Engineering.

The work under this item is for furnishing and installation of the following material as shown in plans and in accordance with the following.

B Materials

B.1 Pole

The 25'-0" aluminum pole shaft shall be tapered from the top of the pole to the mounting plate. Dimensions from the pole top to the bracket mounting plate and from the base plate to the top of the pole, as shown on the drawing, shall be rigidly adhered to.

The base plate shall be cast from either type 319 or 356T6 aluminum. The four elongated mounting holes shall be on 90-degree centers on an 11" bolt circle. The mounting slots shall be sized for 1-inch mounting bolts. The base shall be welded to the shaft so the arms bisect the angle between mounting holes at 45 degrees.

The poles shall be built as a double bracket unit and supplied with one cover plate per pole.

The pole cap is to be cast aluminum, and be secured to the pole by three equally spaced ¼"-20 hex head stainless steel screws.

B.1.2 Hand Hole & Grounding

The hand hole shall be 4" x 6" nominal. A ¼"-20 NC taped hole and bolt shall be provided in the shaft opposite the hand hole for grounding purposes. The hand hole cover shall be secured to the pole using ¼"-20 NC by ¾" long 18-8 stainless steel button head Torx T27H tamper proof screws. The hand hole is to be 90 degrees from the arms. The center line of the hand hole shall be 14 inches above the mounting plate.

B.1.3 Loading and Stability

The 25'-0" assembly furnished under this specification shall support a fifty-pound fixture of an EPA of 3 on each arm when equipped with a pair of 6' upsweep arms. All pole designs shall meet the latest revision of the AASHTO specifications for these poles as defined in their STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. The manufacturer shall submit engineering calculations for lighting poles to show that maximum stress and deflections do not exceed specified performance requirements under full design loading, as well as other certified reports and data which indicate that the poles meet all load requirements, within 30 days of the bid award. Engineering calculations shall be prepared and sealed by an engineer licensed in the State of Wisconsin.

The entire horizontal and vertical "wind sail" area of the pole assembly subject to wind load including arm and luminaire shall be designed to withstand the AASHTO standard specifications, from above, for wind

load requirements for a 90 MPH wind load with gust factor computed per section 3.8.5. and height and exposure factors from table 3-5.

All Welding shall be in accordance with the latest applicable A.S.M.E. Standards.

The manufacturer warrants that the pole supplied will be of merchantable quality will conform to applicable specifications, drawings, designs, samples, or descriptions, will be free from defects in materials and workmanship and will be fit for the particular purpose intended.

A plaque with the pole number as shown on the plans shall be affixed onto the pole shaft using high intensity reflective 2" silver numerals on black background.

B.2. Riser Cable

Pole is to be wired as noted on the plans. A separate riser cable will be required to be installed inside of pole for each lighting fixture on the pole. The riser cable(s) shall be 35 feet in length and cut from copper 2#12 UF with ground cable. One wire shall be black, the other shall be white, and the ground to be green. The cable shall conform to NEC Article 340. The riser cable shall be continuous without splices.

C Construction

Install the bolt down pole as specified in the plan and details. After razing the pole use normal pole shaft raking techniques to ensure the centerline of shaft appears vertical to the horizon.

D Measurement

The department will measure Poles Type 25-AL-BD as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1006	Poles Type 25-AL-BD	EACH

Payment is full compensation for the pole, riser cable(s), and all connections. This bid price also includes for furnishing labor, equipment, coordination and all materials and incidentals necessary to complete the work.

149. Luminaire Historic Milwaukee Lantern LED3, Item SPV.0060.1010.

A Description

The work under this item is for furnishing and installation of the following material as Milwaukee Lantern shown in plans and in accordance with the following.

B Materials

Furnish Luminaire Historic Milwaukee Lantern LED.

1. GENERAL APPEARANCE: The Milwaukee Lantern Holophane MLNB20KvB4G shall replicate and conform to the shape and size as shown on plan set.
2. HOUSING: The Lantern Housing shall be cast from ASTM #319 or #356T6 aluminum alloy. The casting shall be free from pits, blowholes, or other irregularities and shall have smooth surfaces. Manufacturer's Logo or identification shall not be visible on the exterior of the casting.
3. REFLECTOR: The reflector shall be aluminum not less than 0.046" in thickness, and of such uniform thickness and strength to protect against dents or deformations. The entire surface of the reflector shall have a minimum of an Alzak finish to provide a permanent and efficient reflecting surface, which may be easily cleaned and maintained. The reflector is to be mounted in such a manner to allow its removal without removal of mounting hardware. The reflector shall not extend beyond the frame of the luminaire in such a manner that it interferes with the proper operation of the refractor hinge assembly.
4. REFRACTOR: The refractor is to be manufactured from **borosilicate glass** to provide the most efficient distribution of lighting. The shape and size of the refractor is to be similar to original Milwaukee Lantern refractors. It shall not extend beyond the frame of the luminaire in such a manner that it interferes with the proper operation of the refractor hinge assembly. Refractor gasket(s) are not to be installed.
5. LIGHTING DISTRIBUTION: The reflector/refractor combination shall be A.S.A.- IES Type IV distribution pattern. Manufacturer shall provide the City with a printed photometric report based on IES Testing

Procedures showing footcandles, lumens, coefficient of utilization and isocandela from an independent test facility. Manufacturer shall also provide the City, on diskette, the photometric report in I.E.S. recommended standard file format for electronic transfer of photometric data (IES Publication LM-63-1986 or later).

6. MOUNTING: The Large Milwaukee Lantern is to be pendant mounted using the ball coupling and canopy lock nut. The lock nut used to secure the lantern to the arm is to be provided with the lantern. It is to be made from stainless steel.

7. BALLAST: There will be no ballast or ignitor in the lantern arm.

8. SURGE PROTECTOR: The luminaire is to be wired with a surge protector Littlefuse LSP10277S-LSP10 in series on the hot and neutral between the input power and the mogul socket in the Milwaukee Lantern in order to protect the LED lamp. The surge protector shall be secured inside the Milwaukee Lantern Arm, easily accessible without causing any interference with the wiring.

9. ELECTRICAL CONNECTIONS: All electrical connections shall be accessible by removing the reflector only. Electrical components are to be listed by Underwriters Laboratory or other nationally recognized testing organizations.

10. LEADS: The power leads are to be routed through the top of the luminaire, (through the ball socket) and have a pigtail length of 12 inches minimum. They are to be #16 AWG stranded copper wire with insulation able to withstand the pulses from the starters and all environmental conditions that could be reasonably encountered in the typical use of the Lantern. They will consist of a black wire (line) white wire (neutral) and green wire (ground, connected to the casting). All paths of the leads are to be protected by insulating bushings or other suitable protection per standard or code.

11. HARDWARE: All clips, springs, bolts, etc. which are required to assemble the luminaire shall be made of stainless steel, brass or aluminum. This requirement includes the hinge pin. There shall be no ferrous materials used.

12. SOCKET: The Mogul socket shall be constructed from rugged, high grade porcelain, rated at not less than 600 volts and be able to withstand the voltage stresses generated by the starting device. It shall have lamp grips to hold the lamp securely. The center contact shall be spring loaded for positive electrical contact. The socket shall be located so the lamp's light center is at the focal point of the reflector/refractor combination.

11. HINGE AND LATCH ASSEMBLY: The hinge assembly shall not be an integral part of the main housing casting. It shall be a replaceable part attached to the main housing casting with hardware. The hinge assembly shall be consistent from unit to unit. The latch assembly must allow release without tools. All materials shall be aluminum.

12. FINISH: The finish shall consist of one primer coat (2 to 3 mils) X-I-M Flash Bond 400 White or equal and two prime finish coats, applied electrostatically with the color specified on the order and as follows:

Black enamel: Gloss, oil, quick dry enamel, RAL 9005, Jet Black.

(2 coats applied electrostatically 2 to 2.5 mils dry film)

Accent panels: Gloss, oil, quick dry enamel, RAL 1000 Green Beige

(2 coats applied electrostatically 2 to 2.5 mils dry film).

The accent panels may also be highlighted with tape colored to the RAL 1000 (Green Beige) specification. The tape must be able to withstand all environmental conditions that could be reasonably be encountered in the typical use of the Harp. The tape must be fade resistant.

Note: Supplier to submit color sample and specification data for approval and supply one gallon of finish paint and one quart of accent panel paint per 25 luminaires.

13. LAMP: The luminaire shall be equipped with Keystone KT-LED80HID-EX39-830-D or Halco HID80-CS-EX39-LED.

C Construction

The Lantern 1-1/4" tenon is to be threaded into the bracket and 1-1/4" stainless steel hex head nut installed on pipe tenon, lock nutting the fixture to the bracket. Perform all splices and connections needed for the operation of fixture.

D Measurement

The department will measure Luminaire Historic Milwaukee Lantern LED3 by the each acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1010	Luminaire Historic Milwaukee Lantern LED3	EACH

Payment is full compensation for the Luminaire Historic Milwaukee Lantern LED fixture, surge protector, screw in bulb, and all connections needed for complete installation.

This bid price also includes furnishing labor, equipment, coordination and all materials and incidentals necessary to complete the work.

150. Inline 5A Fast Acting Fuse with Holder; Item SPV.0060.1013.

A Description

This special provision describes materials, general requirements, personnel qualifications, construction methods, and testing requirements used to perform electrical connections/splices required.

All work shall be in accordance with the current Wisconsin Standard Specification for Highway and Structure Section 651.

B. Materials

Furnish materials conforming to the WSEC, consisting of chapter comm. 16 of the WEC combined with the NEC.

All materials furnished under this contract for street lighting installation are subject to approval by the City of Milwaukee street lighting project engineer. A prototype maybe requested for submittal by the project engineer with a cable sample installed and spliced for approval prior to field installation.

The contractor shall furnish a complete list of materials to be furnished and used for street lighting. Such list shall include names and addresses of manufactures, together with catalog numbers, certificates of compliance, specifications, and other product information requests by the project engineer. The list shall be submitted within ten (10) calendar days of execution of contract. No material shall be incorporated into the lighting system prior to the written approval of the engineer. Approval does not change the intent of the specifications. The contractor shall not substitute or make changes in material without resubmitting for approval

Use either the KLM-5 Bussmann Limitron Fast Acting Fuse housed in 1-Pole Midget Fuse Holder HEB-AA Bussmann 10A 600V with 2A0600 Bussmann insulator fuse boot or else an equal fuse assembly compatible with internal raceway of light unit.

C. Construction

C.1. General Requirements

Work under items related to the street lighting system shall conform to the National Electrical Code (NEC), 2020 Edition, or the latest edition adopted by the State of Wisconsin, Wisconsin Department of Commerce Chapter Comm 16 (Electrical) State of Wisconsin electrical code, City of Milwaukee code, and these special provisions and good electrical practices. The contractor shall not take advantage of lack of details in plans or these specifications where to do so would conflict with the applicable code and standards.

C.2. Personnel Qualifications

An electrician holding all appropriate licenses (including City of Milwaukee Licenses) shall supervise all work done referring to the street lighting system. All splices shall be made by an electrician. For the purposes of this contract, an electrician is a person who served a four (4) year apprenticeship and passed state exams.

C.3. Splices

The contractor shall perform water tight connections at pole's handhole with materials listed or equal on Street Lighting Standard Details 142. Conductor runs shall be continuous between pole locations, and no splicing of conductors outside the pull box will be allowed. The water tight splices shall reside in the pull box and above the wiring coils called for in Street Lighting Standard Details 145. The 2#12UF with ground cable (per luminaire) shall be brought to the pole hand hole where it will be spliced with the riser cable to

the light fixture. See luminaire specification for information on the installation of an in-line watertight fuse holder installed in-line with the hot conductor that leads to the luminaire and accessible in pole at the hand hole.

C.4. In Service Distribution Systems

The contractor shall not make splices to any underground connections or to any existing distribution system. As indicated on plans, underground splices and connections to existing underground circuitry will be completed by City electricians.

C.5. Testing

After the City makes preliminary acceptance of the street lighting system, it shall be monitored by the City of Milwaukee, Street Lighting Electrical Services during a 60-calendar day operational "burn in". Final acceptance of the lighting system will be based on its meeting standard operational criteria as stated in these specifications. The contractor shall be responsible for all necessary repairs and adjustments to the lighting system to meet standard operational criteria.

D. Measurement

The Department will measure this item Inline 5A Fast Acting Fuse with Holder 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.0060.1013	Inline 5A Fast Acting Fuse with Holder	EACH

Payment is full compensation for furnishing and installing inline fuse holder assemblies and for disposing of surplus material.

151. Luminaire Arms Single Member 6-Ft, Item SPV.0060.1014.

A Description

The work under this item is for furnishing and installation of the following material as shown in plans and in accordance with the following. All work shall be in accordance with section 651.

B Materials

City of Milwaukee per City Spec. and drawing C-87-76. Bracket arm material is Aluminum Alloy, with a satin finish.

- Bracket arm is 2" schedule 80 (2.375" O.D. x .218" wall) Aluminum pipe arm (6061-T6 Alloy).
- Bracket arm has a 7'-3" radius bend, with a 9-inch straight piece at the end of the arm for mounting the luminaire.
- Mounting plate is ½" thick Aluminum (6061-T6 Alloy).
- ¾" I.D. rubber grommet inserted in 1 1/16" Diameter hole located 8 inches from mounting plate.
- 1-inch I.D. rubber grommet for use in pole shaft.

C Construction

The bracket shall be attached to the pole with two (2) ½" x 13 NC x 1 ½" long stainless-steel hex bolts, two (2) 1 ¼" O.D. stainless steel flat washers and two (2) ½" stainless steel lock washers. Anti-seize needs to be applied to the threads of the bolts before assembly.

D Measurement

The Department will measure Luminaire Arms Single Member 6-Ft. 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.0060.1014	Luminaire Arms Single Member 6-Ft.	EACH

Payment is full compensation for the bracket arm, and all connections. This bid price also includes for furnishing labor, equipment, coordination and all materials and incidentals necessary to complete the work.

152. Luminaire Utility 2LED, Item SPV.0060.1017; Luminaire Utility 3LED, Item SPV.0060.1018.

A Description

This special provision describes furnishing and installing luminaires in accordance with current City of Milwaukee Electrical methods and National Electrical Code standards. All work shall be in accordance with section 651.

B Materials

Luminaire Utility conforms with street lighting details and plans.

TECHNICAL SPECIFICATIONS:

All features below shall be incorporated into the equipment and all items shall be furnished and installed into a complete unit ready for operation.

TYPE: The LED luminaires purchased under this contract will be of utility style and shall conform with luminaire appearance shown on street lighting details and plans. The luminaires shall be designed so it can efficiently produce uniform illumination in accordance with I.E.S. Type II, Type III and Type V light distribution according to the lighting plan.

- A. TYPE: The luminaries purchased under this contract will be of standard design of a regular production LED fixture. The luminaries shall conform in overall specification as shown on Table A.
- B. HOUSINGS: The housing shall be rugged, high quality, cast aluminum for maximum strength, durability and lasting beauty. All castings shall be free from pits, blowholes, or other irregularities. All edges are to be free from burrs. The door is to be cast aluminum for durability.
 1. Level: The housing shall have an integral leveling pad or other suitable means for quick, easy and proper positioning of the luminaire.
 2. Door: The door shall be hinged and easily opened downward for routine maintenance. All component parts shall be easily accessible with the lower housing opened. Tool-less entry is required.
 3. Hinges: Hinges shall be constructed and designed to accurately position the door and assure a positive locking with the housing. The hinges shall be provided with a safety catch to prevent the accidental disengagement of the door during servicing.
 4. Finish: The entire housing shall be polyester powder-coated for durability and corrosion resistance (4 mils/100 microns) with a ± 1 mils/24 microns of tolerance. The surface treatment shall yield >3000 hours of salt spray resistant finish per ASTM B117 standard. The housing shall have: 1) discoloration resistant finish in accordance with ASTM D2244 standard, 2) luster retention that meets ASTM D523 standard, 3) humidity proof that meets ASTM D2247 standard. The surface treatment shall yield >3000 hours of salt spray resistant finish that meets testing performed per ASTM B117 standard.
 5. Color: The luminaire shall be grey in color unless otherwise specified.
 6. Label: There shall be a NEMA label as shown on Table A (clearly visible at 30 feet height) furnished separately with the luminaire. In addition, the luminaire model number and manufacturing date shall be indicated inside the housing.

Table A

	Luminaire 90W LED (Type II, III distribution)	Luminaire 135W LED (Type II and III light distribution)	Luminaire 90W LED (Type V distribution)
Factory set input power (Watt)	90 ± 5%	135 ± 5%	90 ± 5%
# of LED	≥ 40	≥ 40	≥ 48
NEMA Label	2LED2 (for Type II) 2LED3 (for Type III)	3LED2 (for Type II) 3LED3 (for Type III)	2LED5 (Type V)
Max. Dimension	22.75" (D) * 4.38" (H)*11"(W)	23.25" (D) * 4.38" (H)*11"(D)	23.25" (D) * 4.38" (H)*11"(D)
EPA (sq. ft.)	≤ 0.53	≤ 0.53	≤ 0.53
Weight	≤ 12.5 lbs.	≤ 12.5 lbs.	≤ 12.5 lbs.
BUG Rating	B3-U0-G3	B3-U0-G3	B4-U0-G2
Min. Efficacy (lumen/Watt)	117	112	134
Min. Delivered Lumens	10,618	15,160	10,830

C. LED/OPTICAL ASSEMBLY:

There shall be a minimum 40 LED on the optical assembly system. The refractor shall be UV stabilized optical grade polymer refractor lenses for optimal lighting distribution and superior lighting uniformity over time. The system is to be NEMA IP66 rated for dust and water resistant. The luminaires shall meet LM-63, LM-79 and TM-15(IESNA) standard for photometric performance.

The L₇₀ for the luminaires, per IESNA TM-21, must be ≥ 60,000 hours. The Lumen maintenance % is to be >97.5% at 60,000 hours of operation.

The color temperature is to be 3,000K CCT.

D. THERMAL MANAGEMENT

The fixture shall be designed and built with passive cooling mechanism (no cooling device with moving parts) by natural vertical convection air flow. The fixture shall be designed and built with openings to enable natural cleaning and removal of dirt and debris, and resistant to animal trapped or building nest on the luminaire. The luminaire shall be rated for operation in ambient temperature of -40°F to 104 °F.

E. DIMMER AND FIELD ADJUSTABLE OUTPUT SELECTOR

For Type II and Type III luminaire, a single type of luminaire (one for each type of light distribution) shall satisfy the different wattage requirement. The luminaire's input power should be factory set as shown on Table A.

The luminaire shall be supplied with dimmable driver and field adjustable output selector which enable the luminaire to provide 10,618 lumens to 15,160 lumens with efficacy >110. The field adjustable wattage chart shall be attached on the inside of the door opening

For Type V luminaire, due to the light distribution pattern and uniformity, a separate type of luminaire is acceptable but it is to meet the requirements shown on Table A.

F. POWER SUPPLY

The electronic driver must have an expected lifespan of ≥60,000 hours at 25°C ambient. The supplied driver shall be auto adjusting type with universal voltage input from 120 Volts to 277 Volts @ 60Hz.

G. SURGE PROTECTION

A surge protector which provides a minimum of 20kV/10kA protection as per IEEE/ANSI C62.41 Category C and ANSI C136.2-2015 is to be included. There shall be a visual indicator showing the surge protector is operational.

H. TERMINAL BLOCK

A heavy-duty terminal block shall be provided which will accept wire sizes up to #6 A.W.G. The terminal block shall be compatible with either aluminum or copper wire.

I. MOUNTING:

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter with option to mount the fixture at $\pm 5^\circ$ in 2.5° step. Provide a 2-bolt clamping mechanism with 3G vibration rating per ANSI C136.31. A built-in bird guard shall be standard with the fixture.

J. HARDWARE:

All nuts, bolts, latches, etc. furnished with the luminaire shall be fabricated from stainless steel or non-ferrous materials.

K. CONTROL:

The luminaire is to be equipped with 7 pins receptacle and shorting cap.

L. SMART INVENTORY AND MAINTENANCE DESIGN

Each luminaire should be uniquely identifiable by having a QR Code on each luminaire for app scanning to access the luminaire specification and configuration, in addition to the geographical location at point of installation. The app should be free of charge to purchaser for the lifetime of the luminaire.

M. ENERGY EFFICIENCY:

The luminaire is to be DLC certified for energy efficiency at time of purchase.

N. ACCESSORIES:

The luminaire shall be designed to seamlessly equip with optional light shield for further lighting control. The optional light shield for the luminaire shall be of standard product from the same manufacturer and readily available.

O. SENSOR READY:

The luminaire is to be equipped with D4i driver and Zhaga socket in protective cap for future sensor installation.

C Construction

Install lighting fixture on the mounting bracket on the pole according to manufacturer standards. Provisions for inserting 2#12UF with ground riser cable between the fixture and cable connecting point at the transformer base/ hand hole shall be included per applicable details within design set.

Contractor is responsible to scan the QR code of each fixture with the Signify app at point of installation. Details will be provided by Street Lighting field office.

D Measurement

The Department will measure Luminaire Utility 2LED or Luminaire Utility 3LED by each individual unit, acceptably completed.

E Payment

The Department will pay for measured quantities at the contract unit price under the following bid items:

Item Number	Description	UNIT
SPV.0060.1017	Luminaire Utility 2LED	EACH
SPV.0060.1018	Luminaire Utility 3LED	EACH

Payment is full compensation for furnishing labor, equipment, coordination and all materials and incidentals necessary to complete the work.

153. Pull Boxes 17-Inch x 30-Inch x 24-Inch, Item SPV.0060.1020.

A Description

This special provision describes furnishing and installing Pull Boxes 17-Inch x 30-Inch x 24-Inch at the locations shown on the plans according to standard spec 653.

B Materials

Furnish fiberglass/polymer concrete vaults of rectangular composite enclosure with Tier 15 Rating (15,000 lb Design Load), and (22,500 lb Test Load), nominal 17" wide x 30" long and 24" total depth,

flared wall style #CHB173024 as by Highline Products or #B12173024A, as by Hubbell Power Systems, Inc. or approved equal. Cover shall be Tier 15 Rating (15,000 lb Design Load), and (22,500 lb Test Load), bolted cover with logo "Street Lighting" #CHC1730HL1 as by Highline Products, #C12173002A41 as by Hubbell Systems, or approved equal. The pull box shall be listed and labeled by (UL) or other Nationally Recognized Testing Laboratory.

C Construction

Conform to standard spec. 673.3 and City of Milwaukee standards. The vaults shall be installed on 12-inches of crushed stone, set flush with grade and backfilled.

D Measurement

The department will measure Pull Boxes 17-Inch x 30-Inch x 24-Inch as each individual pull box, 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.0060.1020	Pull Boxes 17-Inch x 30-Inch x 24-Inch	EACH

Payment is full compensation for furnishing and installing all materials, including pull box, crushed aggregate, for excavation, backfill, for disposing of surplus material.

154. Submersible Multitap 3-Port Pre-Insulated Connector; Item SPV.0060.1023; Submersible Multitap 4-Port Pre-Insulated Connector; Item SPV.0060.1024.

A Description

This section describes materials, general requirements, personnel qualifications, construction methods, and testing requirements used to perform electrical connections/splices required.

All work shall be in accordance with section 651 of the WisDot Standard Spec.

B Materials

B.1.

Furnish materials conforming to the WSEC, consisting of chapter comm. 16 of the WEC combined with the NEC.

B.2.

All materials furnished under this contract for street lighting installation are subject to approval by the City of Milwaukee street lighting project engineer. A prototype maybe requested for submittal by the project engineer with a cable sample installed and spliced for approval prior to field installation.

B.3.

The contractor shall furnish a complete list of materials to be furnished and used for street lighting. Such list shall include names and addresses of manufactures, together with catalog numbers, certificates of compliance, specifications, and other product information requests by the project engineer. The list shall be submitted within ten (10) calendar days of execution of contract. No material shall be incorporated into the lighting system prior to the written approval of the engineer. Approval does not change the intent of the specifications. The contractor shall not substitute or make changes in material without resubmitting for approval

Use either the Polaris Edge (ISPB2) or Morris Product submersible insulated connector or else an equal connector that is 3, or 4 Port Pre-Insulated, that is designed for use in below grade boxes, direct burial, and submersible. The Conductors Range from #2/0 - #14 Rated for 600 Volts Dual Rated for CU. or AL.

C Construction

C.1. General Requirements

Work under items related to the street lighting system shall conform to the National Electrical Code (NEC), 2020 Edition, or the latest edition adopted by the State of Wisconsin, Wisconsin Department of Commerce Chapter Comm 16 (Electrical) State of Wisconsin electrical code, City of Milwaukee code, and

these special provisions and good electrical practices. The contractor shall not take advantage of lack of details in plans or these specifications where to do so would conflict with the applicable code and standards.

C.2. Personnel Qualifications

An electrician holding all appropriate licenses (including City of Milwaukee Licenses) shall supervise all work done referring to the street lighting system. **All splices shall be made by an electrician.** For the purposes of this contract, an electrician is a person who served a four (4) year apprenticeship and passed state exams.

C.3. Splices

The contractor shall perform water tight splicing in a pull box. Conductor runs shall be continuous between pole locations, and no splicing of conductors outside the pull box will be allowed. The water tight splices shall reside in the pull box and above the 3 foot wiring coils. The 2#12UF with ground cable (per luminaire) shall be brought to the pole hand hole where it will be spliced with the riser cable to the light fixture. An in-line watertight fuse holder needs to be installed in-line with the hot conductor that leads to the luminaire and should be accessible in pole at the hand hole. Oxide inhibitor (OX4) or equivalent shall be applied on all splice's points.

Contractor is to bundle circuit conductors together and identify circuit at every split point.

Hand hole splices if needed should be completed using a multi-tap connector. The connector should be rated for 600 volts, conductor range #1/0 through #14 AL-CU, have a insulating cover rated at 105 degrees Celsius, and meet or exceed ANSI 119.4 Class A specifications for reliability.

C.4. In Service Distribution Systems

The contractor shall not make splices to any underground connections or to any existing distribution system. As indicated on plans, underground splices and connections to existing underground circuitry will be completed by City electricians.

C.5. Testing

After the City makes preliminary acceptance of the street lighting system, it shall be monitored by the City of Milwaukee, Street Lighting Electrical Services during a 60-calendar day operational "burn in". Final acceptance of the lighting system will be based on its meeting standard operational criteria as stated in these specifications. The contractor shall be responsible for all necessary repairs and adjustments to the lighting system to meet standard operational criteria.

D Measurement

The Department will measure the item Submersible Multitap Pre-Insulated Connectors as each splice location as one unit. The Department will measure this item Submersible Multitap Pre-Insulated Connectors by the each (EACH) unit of measure. This covers both of the Submersible Multitap 3-Port and 4-Port Pre-Insulated Connectors in the pull box.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1023	Submersible Multitap 3-Port Pre-Insulated Connector	EACH
SPV.0060.1024	Submersible Multitap 4-Port Pre-Insulated Connector	EACH

Payment is full compensation for furnishing labor, equipment, coordination and all materials such as the multi-port submersible insulated connectors, anti-oxidant for wire connections, and incidentals necessary to complete the work to make operational one luminaire.

155. Maintenance of Lighting Systems (1060-27-74), Item SPV.0060.1034.

A Description

Maintain existing and proposed lighting system beginning on the date that the contractor's activities (electrical or otherwise) at the job site begin. Take responsibility for the proper operation and maintenance of all existing and proposed lighting systems which are part of, or which may be affected by, the work until final acceptance or as otherwise determined by the engineer.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the engineer and a representative of the party or parties responsible for maintenance of any lighting systems which may be affected by the work. Make the request for the maintenance preconstruction inspection no less than seven calendar days prior to the desired inspection date.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. Visit the site to confirm and ascertain the exact condition of the electrical equipment and systems to be maintained. Condition issues found during contractor assessment can be discussed and addressed by contacting the SE Region Lighting Engineer (Eric Perea) prior to maintenance responsibility being transferred to the contractor.

B (Vacant)

C Construction

C.1 Existing Lighting Systems

Existing lighting systems are defined as any lighting system or part of a lighting system in service prior to this contract. The contract drawings indicate the general extent of any existing lighting. Ascertain the extent of effort required for compliance with these specifications; failure to do so will not be justification for extra payment or reduced responsibilities. Clear and replace any knockdowns or damage caused to the existing lighting system, regardless of who causes the damage. Maintain existing lighting system as follows:

Partial Maintenance: Only maintain the affected circuits if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work unless otherwise indicated. Ensure engineer approval to isolate the affected circuits by means of in-line waterproof fuse holders as specified elsewhere.

Full Maintenance: Maintain the entire controller and all associated circuits if the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller, or if the controller is modified in any way under the contract work.

C.2 Proposed Lighting Systems

Proposed lighting systems are any temporary or final lighting systems or part of a lighting system to be constructed under this contract.

Maintain all items installed under this contract, including, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the motoring public, contractor operations, or other means.

Excluding damage due to contractor operations, the contractor will be reimbursed for replaced equipment, materials only, if the invoice paid for the individual piece of equipment is greater than \$500. The cost of maintaining equipment installed under this contract, labor, mobilization, tools and incidentals along with repairs due to contractor operations are incidental to this bid item.

C.3 Maintenance Operations

Maintain lighting units (including sign lighting), cable runs, and lighting controls. In the case of a pole knockdown or sign light damage caused by normal vehicular traffic, promptly clear the lighting unit and circuit discontinuity and restore the system to service. Reinstall the lighting unit (if salvageable), or install a new one.

Provide weekly night-time patrol of the lighting system, with patrol reports filed immediately with the engineer and copied to the region lighting coordinator with deficiencies corrected within 24 hours of the patrol. Present patrol reports on standard forms as designated by the engineer. Uncorrected deficiencies may be designated by the engineer as necessitating emergency repairs as described elsewhere herein.

Perform corrective action on specific lighting system equipment according to the following chart. The chart lists the maximum response, service restoration, and permanent repair time.

Incident or Problem	Service Response Time	Service Restoration Time	Permanent Repair Time
Control cabinet out	1 hour	4 hours	7 Calendar days
Hanging mast arm	1 hour to clear	N/A	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	N/A
Circuit out – Cable trouble	1 hour	24 hours	21 Calendar days
Outage of 3 or more successive lights	1 hour	4 hours	N/A
Outage of 75% of lights on one tower	1 hour	4 hours	N/A
Outage of light nearest RR crossing approach, Islands and gores	1 hour	4 hours	N/A
Outage (single or multiple) found on night outage survey	N/A	N/A	7 Calendar days

C.4 Lighting

1. **Serve Response Time:** The amount of time from the initial notification to the contractor until a patrolman physically arrives at the location.
2. **Service Restoration Time:** The amount of time from the initial notification to the contractor until the time the system is fully operational again. (In cases of motorist-caused damage, the undamaged portions of the system are operational.)
3. **Permanent Repair Time:** The amount of time from initial notification to the contractor until the time permanent repairs are made if the contractor was required to make temporary repairs to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the department reserves the right to assign any work not completed within this timeframe to the State Electrical Engineering and Electronics Unit. Reimburse all costs associated to repair this uncompleted work. Failure to pay these costs to the State Electrical Engineering and Electronics Unit within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from the cost of the contract. Repeated failures and/or a gross failure of maintenance shall result in the State's Electrical Engineering and Electronics Unit being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

C.5 Operation of Lighting

Maintain operational lighting every night, dusk to dawn. Do not operate duplicate lighting systems (such as temporary lighting and proposed new lighting) simultaneously. Do not keep lighting systems in operation during long daytime periods. Ensure that the lighting system is fully operational and approved by the engineer prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

D Measurement

The department will measure Maintenance of Lighting Systems as a single unit of work per 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.0060.1034	Maintenance of Lighting Systems (1060-27-74)	EACH

Payment is full compensation for Maintenance of Lighting Systems, both existing and proposed, weekly night-time patrol of the lighting system, mobilization, and filed patrol reports. No payment will be considered for damage or repairs due to contractor operations.

156. Lighting System Integrator Project (1060-27-74), Item SPV.0060.1044.

A Description

This special provision describes coordinating lighting with various parties; record keeping, and documentation. Where the department is responsible for freeway lighting operation, maintenance, or utility locates on existing systems or systems overlapping project boundaries, the contractor's freeway lighting integrator will serve as the contractor's liaison to the department's electrical operations unit.

B Personnel Qualifications

Assign personnel experienced in underground utility construction and department lighting specifications and practices.

C Construction

At any one time during the project, the contractor shall assign one individual person as the freeway lighting integrator.

The freeway lighting integrator shall:

1. Familiarize himself with the location and nature of existing lighting circuits. This familiarity shall include the extent of any lighting system that overlaps project limits.
2. Maintain a file of applicable permits or licenses issued to the contractor, and convey copies to the engineer.
3. Keep with him at all times a contact list of affected lighting personnel.
4. Maintain a record of tagouts and the clearance of tagouts.
5. Interface with department electrical personnel to determine how contract limits might affect maintenance or operation of existing systems.
6. Maintain ongoing contact with the department's Diggers' Hotline Coordinator to ensure that each of the two persons knows that all requested utility locates are marked in the field by the appropriate party. The intent here is to assure coordination. This special provision does not transfer additional utility locating responsibilities to the contractor, beyond those responsibilities already assigned to him by other provisions of the contract.
7. Inform the department of any lighting outages, including outside the project limits where a lighting system crosses the project boundary.
8. Maintain in any format real-time records of existing, removed and new lighting facilities. Include utility service extensions. Additional required records will include temporary connections and their ultimate removal.
9. Maintain records of tests, including: "meg" tests, amperage draw per circuit leg, voltage reading at the disconnect, and voltage reading at the furthest pole per circuit leg. Convey these records at time of acceptance or partial acceptance.
10. At the time of acceptance or partial acceptance, convey as-built drawings in both the following formats: plan redlines and .dgn electronic. Include utility service extensions.
11. Secure copies of operator's manuals, tear sheets, etc. as may be provided by manufacturers of some lighting materials, and convey a minimum of three sets to the department.
12. Work with the engineer to notify department electrical personnel of acceptance or partial acceptance.
13. Perform related duties as may be needed to ensure continuity of freeway lighting during construction, and orderly transfer upon completion.

D Measurement

The department will measure Lighting System Integrator as a single unit, acceptably completed.

E Payment

The department will pay for the measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.1044	Lighting System Integrator (1060-27-74)	EACH

Payment will be full compensation for providing specified expertise, assistance and documents, and personnel costs.

157. Lighting Equipment Painting Project (1060-27-74), Item SPV.0060.1060.

A Description

This special provision describes the painting of the exterior surfaces of street lighting equipment and associated mounting hardware as shown on the lighting plans. Individual lighting equipment is paid for in separate bid items.

B Materials

Contact City of Milwaukee Neal Karweik, (414) 286-5943, prior to ordering lighting equipment to obtain the exact color code from the City of Milwaukee. Obtain lighting equipment powder-coated in the black color from the manufacturer or supplier. Lighting equipment includes luminaire arms, lighting poles, and metal bases. All black items shall match in color. All lighting hardware, sign hardware, and stainless steel banding used on standards and poles, shall be cleaned and painted with a primer and two finish coats of the best rust resistant synthetic resin enamel in the color that exactly matches the color code provided by the City of Milwaukee.

C Construction

Install per manufacturer's instructions. Marks and scratches on painted equipment and lighting hardware shall be touched up with two coats of synthetic resin enamel consistent in color and texture to the original finish, or as directed by the engineer.

D Measurement

The Department will measure Lighting Equipment Painting Project (1060-27-74) 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.0060.1060	Lighting Equipment Painting Project (1060-27-74)	EACH

Payment is full compensation furnishing lighting equipment, hardware, and banding in the color specified by the City of Milwaukee.

158. Removing Electrical Service Meter Breaker Pedestal, Item SPV.0060.2000.

A Description

This special provision describes removing an existing electrical service meter breaker pedestal, disconnecting all connected power wires, and disposing of the equipment appropriately.

B (Vacant)

C Construction

Coordinate for removal of the existing electrical service meter breaker pedestal with WE Energies.

Disconnect all connected power wires, remove the pedestal and dispose of all materials properly away from the project area.

D Measurement

The department will measure Removing Electrical Service Meter Breaker Pedestal by each unit, acceptably completed.

E Payment

The department will pay for the measured quantity at the contract unit price under the following item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2000	Removing Electrical Service Meter Breaker Pedestal	EACH

Payment is full compensation for coordination with WE Energies; for disconnection of all wiring connections; removing all conduit connections; and for removal and disposal of materials; and any necessary restoration, including backfill, topsoil, and seeding.

159. Enter Existing Splice Enclosure, Item SPV.0060.2050.

A Description

Work under this item shall consist of opening, cleaning, resealing, and reinstalling an existing fiber optic splice enclosure, as shown in the plans or as direct by the engineer.

B Materials

None.

C Construction

Open, clean, reseal, and reinstall the fiber optic splice enclosure according to the manufacturer's recommended guidelines. All work shall be done in accordance with Section 678 of the State of Wisconsin Department of Transportation Standard Specifications and as described in these specifications.

Affix the fiber optic splice enclosure to the side of the manhole or vault using the cable support brackets. All cables shall be properly dressed and affixed to rails or racks within the manhole or vault. No cables or enclosures will be permitted to lie on the floor.

D Measurement

The department will measure Enter Existing Splice Enclosure by each unit, acceptably completed.

E Payment

The department will pay for the measured quantity at the contract unit price under the following item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2050	Enter Existing Splice Enclosure	EACH

Payment is full compensation for opening, cleaning, resealing, and reinstalling the enclosure, including all labor, tools, materials, equipment, mobilization, permits, troubleshooting, acceptance, and incidentals necessary to complete the work.

160. Salvaged Signal Assembly Advance Flasher Type 2, Item SPV.0060.2057.

A Description

This special provision describes installing salvaged advance flasher traffic signal assemblies for use with ramp meters on new or existing poles. This includes the traffic signal heads, traffic signal mounting brackets, sign mounting brackets, signs, and wiring within the assembly.

B Materials

Two previously removed and salvaged single-section 12-inch yellow face traffic signal heads meet the requirements of Section 658 of the Standard Specifications.

Previously removed and salvaged traffic signal mounting hardware.

Previously removed and salvaged sign mounting brackets.

Previously removed and salvaged sign.

Provide wiring within the assembly and from the signal heads to the pedestal base that meets the requirements of Section 655.2.2 of the Standard Specifications.

C Construction

Perform work conforming to Sections 637, 657, and 658 of the Standard Specifications and the WSEC, and as the plans show.

Ensure that the positioning, mounting height, and lateral placement of signal heads are according to the MUTCD. The contractor may be required to revisit locations to re-adjust the signal heads once the engineer observes the metering operation of the ramp.

For traffic signal cable that extends from the signal base to the terminal strips in the signal heads, provide the number of conductors as the plans show. Match the color of the conductor to the lens color.

Install conductors in continuous lengths without splices from terminal to terminal. Splice only at hand holes at the bases of the standards or poles. Do not splice in underground pull boxes or conduit.

Group and identify sets of conductors in signal cables, 3 each per signal phase, whether insulated with red, yellow, green, or other colors, at each pertinent termination. Use conductors colored to match lens colors first. The engineer shall approve the method of identification. Furnish 2 as-built cable layout drawings with labeling to the engineer upon completion of the work. Place one of those copies in the cabinet.

Connect the white 14 AWG wires to a 10 AWG current carrying neutral. Make the connection with a wire-nut. Extend the 10 AWG wire from the current carrying neutral grounding strip in the ramp meter processor assembly cabinet, being installed from base to base to the far end of each signal conduit run.

Furnish the 10 AWG USE XLP current carrying grounded conductor in white colored insulation.

Furnish the 10 AWG USE XLP equipment-grounding wire in green colored insulation.

Furnish equipment and appliances necessary to test the complete installation of the ramp meter control signal assembly, including electrical conductors.

D Measurement

The department will measure Salvaged Signal Assembly Advance Flasher Type 2 as each individual assembly acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price each under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.2057	Salvaged Signal Assembly Advance Flasher Type 2	EACH

Payment is full compensation for installing salvaged signal heads, signal mounting brackets, cabling within the assembly, sign, and the sign support system; for providing electrical connections and grounding; and for testing.

161. Removing Monotube Concrete Bases, Item SPV.0060.3101.

A Description

This special provision describes removing and disposing of existing monotube traffic signal concrete bases.

B (Vacant)

C Construction

Construction shall be according to standard spec 204.3.

At locations of concrete bases where complete removal of the base will impact construction of new monotube concrete bases and location of existing monotube does not interfere with construction of new monotube, break down and remove the concrete material to a depth of 2' below grade. Fill the area to grade with similar material as adjacent to the base (topsoil/seed, concrete sidewalk, asphalt, etc).

If the location of the existing monotube interferes with the construction of new monotube, or other facilities, then remove the entire monotube concrete base per standard spec 204.3.

D Measurement

The department will measure Removing Monotube Concrete Bases bid items as each individual monotube base, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3101	Removing Monotube Concrete Bases	EACH

Payment is full compensation for breaking down and removing; for hauling and disposing of materials; for restoring the roadway cross-section, and for backfilling.

162. Temporary EVP System Left in Place W St Paul Ave & N 27th St, Item SPV.0060.3143.

A Description

This special provision describes furnishing, installing, maintaining, and surrendering a temporary EVP system with confirmation lights at the temporary signalized intersection as shown in the plans.

B Materials

Furnish an emergency vehicle preemption system, with confirmation lights, compatible with the local municipal systems and users.

C Construction

The Temporary EVP System, as shown in the temporary traffic signal plans or as directed by the engineer, shall be complete in place, tested, and in full operation during each stage and sub-stage of construction.

Install the temporary EVP system as shown in the plans and according to the manufacturer's recommendations. Determine a suitable location for the temporary EVP detectors for each stage and sub-stage of construction. Detectors may be mounted on the temporary traffic signal span wire or wood poles. Relocate the temporary EVP detectors to a suitable location if construction activities and/or construction staging changes impede the detector operation. Arrange for testing of equipment prior to acceptance of the installation for each construction stage.

All cables associated with the temporary EVP system shall be routed to the cabinet. Each lead shall be appropriately marked as to which EVP channel it is associated.

Periodic adjustment and/or moving of the temporary EVP detectors may be required due to changes in traffic control, staging, or other construction operations.

Ensure that the temporary EVP system stays in clean working order. Periodic cleaning of the equipment may be required due to dirt and dust build-up.

Surrender the temporary EVP system to the contractor for Project I.D.1060-27-72 upon project completion.

Upon completion of the contract, the contractor for Project I.D. 1060-27-72 shall have the opportunity to inspect the EVP system for defects and deficiencies. It shall be the contractor's responsibility to correct any defects or deficiencies prior to surrendering the EVP system.

Provide the engineer records of all EVP settings used during construction.

D Measurement

The department will measure Temporary EVP Left in Place System [Location] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3143	Temporary EVP System Left In Place W St Paul Ave & N 27th St	EACH

Payment is full compensation for furnishing and installing all required equipment, materials, and supplies; for maintaining and changing the EVP detectors to match the plans, traffic control, and construction staging; for relocating the temporary EVP detectors due to construction activities, if required; for testing the EVP system for each stage and sub-stage of construction; for periodically cleaning all temporary EVP detectors; and for surrendering the Temporary EVP System.

163. Monotube Base Anchor Bolt Cover Type 10 Special, Item SPV.0060.3145.

A Description

This special provision includes furnishing and installing protective covers for monotube base anchor bolts. The purpose of the covers is to protect the anchor bolts until monotube poles are installed with Project I.D. 1060-27-72. This work shall be in accordance with the requirements of standard spec 657, the plans, standard detail drawings, and as hereinafter provided.

B Materials

Furnish and install a metal protective cover matching the bolt pattern of Type 10S monotube bases. The cover shall attach to the concrete base anchor bolts and have an attached cap to prevent anything from accessing the conduit.

C Construction

Attach covers in accordance with section 657.3 of the standard special provisions. Attach caps using bolts, rivets, or other approved fastener that allows for future removal.

D Measurement

The department will measure Monotube Base Anchor Bolt Cover [Type] as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.3145	Monotube Base Anchor Bolt Cover Type 10 Special	EACH

Payment is full compensation for transporting all materials; installing a complete unit; for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

164. Covering Traffic Signal Heads, Item SPV.0060.3146.

A Description

This special provision describes covering permanent traffic signal equipment as shown in the plans.

B Materials

Hood materials shall be burlap, canvas, nylon, or other materials approved by the engineer and black in color. Plastic trash bags or similar materials are not acceptable. The hood shall cover the entire face of the traffic signal indication to the backplate, if present. The hoods must not damage the existing traffic signal equipment.

The hoods must be securely fastened to the existing traffic signal equipment with nylon rope, straps, or other materials approved by the engineer. Tape or similar materials are not acceptable. The straps must not damage the existing traffic signal equipment.

C Construction

Hood the permanent traffic signal heads immediately upon the beginning of each construction stage. Cover the entire face of the signal head to the backplate with the approved cover materials. Securely fasten the hood to the existing traffic signal equipment with the approved materials. Ensure that the traffic signal indications are not visible.

D Measurement

The department will measure Covering Traffic Signal Heads as a unit of work for each head, 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.0060.3146	Covering traffic Signal Heads	EACH

Payment is full compensation for furnishing and installing all required traffic signal hoods, materials, and supplies; for maintaining the traffic signal hoods during construction; and for removing the traffic signal hoods, cleaning up, and properly disposing of waste.

165. Anchor Assemblies Light Poles on Structures, Item SPV.0060.4000.

A Description

This special provision describes furnishing and installing anchor bolt assemblies for light poles as shown on the plans, and as hereinafter provided.

B Materials

Furnish anchors of the size and spacing as given on the plans, and that conform to ASTM A449 or AASHTO M314 GR 55. The upper 8 inches of the bolts, nuts, and washers shall be hot-dipped galvanized in accordance to ASTM A153, Class C. Provide enlarged threads on nuts for proper fit after galvanizing.

C Construction

Provide two nuts and two washers per anchor bolt and install per light standard manufacturer's recommendations.

D Measurement

The department will measure Anchor Assemblies Light Poles on Structures as a unit for each individual anchor bolt assembly acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4000	Anchor Assemblies Light Poles on Structures	Each

166. Bridge Jacking, B-40-513_5, Item SPV.0060.4010.

A Description

This special provision describes using a hydraulic jacking system to temporarily transfer support of B-40-513_5 to the proposed Pier 1 of B-40-1083. While B-40-513_5 is temporarily supported, portions of the B-40-513_5 superstructure will be partially removed and portions of the remaining B-40-513_5 girders will be retrofit as detailed in the plans. After the B-40-513_5 partial superstructure removals and girder retrofits are complete, temporary support of B-40-513_5 will be transferred to new permanent bearings on B-40-1083 Pier 1 by minimally raising the north end of B-40-513_5 and lowering it onto the new permanent bearings.

B (Vacant)

C Construction

Provide a hydraulic jacking system to temporarily support B-40-513_5 at the locations shown on the plans. The system shall consist of individual jacks located at each girder hydraulically interconnected so that the individual girders of the B-40-513_5 superstructure are equally raised, temporarily supported, and lowered without creating differential deflections between the girders. The individual jacks and overall jacking system shall have a minimum ultimate jacking capacity of at least 100% greater than the temporary support load indicated on the plans.

Follow the sequence of construction shown on the plans. In general, this entails actuating the jacks to temporarily support the existing girders at the locations shown on the plans. For transfer of temporary support to the jacks, the girders shall not be raised more than 1/4". The jacks shall be locked off and / or temporary blocking installed so that temporary support of the girders is not reliant on sustained hydraulic pressure from the jacking system.

After partial superstructure removals and girder retrofits are complete the jacking system shall be used to transfer support of the B-40-513_5 girders to the permanent bearings. The jacks shall be used to lift the existing girders no more than 1/2" to facilitate placement of permanent bearings at the locations shown on

the plans. The jacks and jacking system shall be capable of lowering the girders onto the new bearings in a slow and controlled manner.

At least 14 days prior to commencement of jacking operations, submit to the engineer for approval, plans showing the method of temporarily supporting the bridge. Show type of jacks, size of jacks, shoring or falsework, and sequence of work in the plan.

D Measurement

The department will measure Bridge Jacking, B-40-513_5 as a single unit of work consisting of raising one structure minimally, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4010	Bridge Jacking, B-40-513_5	EACH

Payment is full compensation for furnishing all equipment and shoring; temporarily support the bridge, minimally jacking the bridge to transfer support to new permanent bearings; and lowering the bridge onto the bearings.

**167. Thermal Integrity Profiler (TIP) Testing, Drilled Foundation Shaft 34.65-Inch, Item SPV.0060.4100;
Thermal Integrity Profiler (TIP) Testing, Drilled Foundation Shaft 59.06-Inch, Item SPV.0060.4110.**

A Description

A.1 General

This special provision describes providing specialized equipment and trained testing personnel and to perform Thermal Integrity Profiler (TIP) testing of drilled shafts in accordance to the plans and as hereinafter provided.

Thermal Integrity Profiler (TIP) testing records temperature of curing concrete (hydration energy) along the length of a drilled shaft to assess the quality of drilled foundation shafts, drilled tangent pile wall shafts or drilled secant pile wall shafts hereinafter referred to as "drilled shafts". Data will be acquired using Thermal Wires™, hereinafter referred to as "thermal wires", tied to the reinforcement bar cage and installed prior to concreting. The expected temperature at any location is dependent on the shaft diameter, mix design, time of measurement and distance to the center of the shaft. TIP measurements are used to estimate the shape of the shaft along the length of the shaft. These estimates are compared with concreting logs to assess the overall quality of the shaft.

TIP testing can be performed using embedded thermal wires or using probes lowered into embedded tubes. This special provision specifies the thermal wire method.

A.2 TIP Testing Personnel Requirements

Provide a TIP testing expert to direct and perform all aspects of the TIP testing and provide interpretation of results. The TIP testing expert must be a professional engineer licensed in the State of Wisconsin. The TIP testing expert shall be employed by an independent testing agency with documented and approved experience in TIP testing. Submit the qualifications of the proposed TIP testing expert to the engineer for approval prior to beginning drilled shaft installation.

B Materials

Provide a TIP testing data acquisition system consisting of multiple thermal wires embedded in the drilled shaft concrete to be TIP tested and connected to a computer-based data recorder. The data collection system shall be capable of automatically collecting temperature verses time after casting data along the length of the drilled shaft at intervals of 15 minutes. The thermal wires and TIP testing data acquisition system shall be as manufactured by:

Pile Dynamics Incorporated
30725 Aurora Road
Cleveland Ohio 44139
Phone: (216) 831-6131

Provide equipment with the following minimum requirements:

- A computer-based TIP Data Acquisition System to monitor and download temperature versus time after casting.
- Ability to automatically collect data at user defined time intervals (typically 15 minutes).

C Construction

C.1 TIP Testing Coordination

Schedule and coordinate drilled shaft construction with the TIP testing expert. Alter normal construction procedures as necessary to facilitate the TIP testing procedure. This includes providing suitable and safe access to the site and specific locations of drilled shafts to be tested and providing assistance to the TIP expert to facilitate the TIP testing.

C.2 Thermal Wire Installation

Install thermal wires as shown in the plans and in accordance to the procedures and recommendations of the TIP expert. For the initial installation of thermal wires on the contract, the TIP expert shall be on site to provide guidance and training on the installation and hookup of the thermal wires.

For the drilled shafts indicated on the plans to be TIP tested, the contractor shall install the number of thermal wires that is equal to or greater than the shaft diameter. For example, a drilled shaft diameter of 4.5 feet shall have minimum 5 thermal wires evenly spaced around the perimeter of the reinforcement cage and as shown in the plans. The minimum number of thermal wires for any shaft diameter shall be 4.

Align and attach the thermal wires to the main longitudinal reinforcement of the drilled shaft spaced approximately equally around the perimeter of the drilled shaft reinforcement cage. Stretch the thermal wires to minimize the wire slack and tie vertically at a maximum of every 3 feet to the main longitudinal reinforcement. Locate the thermal wire on the main longitudinal reinforcement bar such that it is 90° to the line connecting the reinforcement to the center of the shaft.

Extend TIP wires from the bottom of the drilled shaft to at least 3 feet above the top of the drilled shaft, or 2 feet above the ground surface, whichever is higher, for shafts cut-off below the ground surface. TIP wires extending beyond the top of the drilled shaft shall be attached to a CSL tube or similarly rigid support at frequent and regular intervals. Connect the thermal wires to the Thermal Access Port, acquire and analyze data, as detailed in this special provision.

Provide and install one additional thermal wire supported and attached to a longitudinal reinforcement bar positioned parallel to and offset from the perimeter reinforcement at a fixed and known radial distance closer to the center of the shaft; typically, at least 2 inches or as shown in the plans. Record the offset distance to the closest perimeter thermal wire before placing the reinforcement bar cage into the drilled shaft.

C.3 TIP Testing

The contractor shall connect the thermal wires to a Thermal Access Port (TAP) prior to or immediately following drilled shaft concrete placement. The exact timing and duration of data measurement will be determined by the contractor's TIP testing expert. Data shall be collected at time intervals of 15 minutes for the duration of time sufficient to reach and record the peak heat of hydration temperature, but for a minimum of 48 hours or longer minimum duration as recommended by the TIP expert. After completion of the data collection period, the TAP shall be connected to the main TIP data acquisition unit and the data files shall be downloaded for inspection and evaluation of temperatures versus time for depth along the length of the drilled shaft.

Potential local defects indicated by locally low temperatures relative to the average temperature at that depth, or average temperatures significantly lower than the average temperatures at other depths, shall be immediately reported to the engineer.

C.4 TIP Testing Reports

Within three working days of completion of TIP testing and receipt of shaft construction record, submit a TIP Testing Report for each drilled shaft tested to the engineer summarizing TIP testing results. At a minimum the TIP testing reports must include:

- (1) Graphical displays of temperature measurements in each thermal wire versus depth at peak temperature.

- (2) Indication of unusual temperatures, particularly significantly cooler local deviations of the average at any depth from the overall average over the entire length, in either probe or thermal wire measurements
- (3) The overall average temperature at peak temperature. This temperature is proportional to the average radius computed from the actual total concrete volume installed. Radius at any point can then be determined from the temperature at that point compared to the overall average temperature.
- (4) A depiction of the shaft radius vs. depth including the concrete cover at peak temperature. Variations in temperature between wires (at each depth) which in turn correspond to variations in cage alignment should be noted. The cage alignment or offset from center should be noted.
- (5) Shaft specific construction information (e.g. elevations of the top of shaft, bottom of casing, bottom of shaft, cage alignment or offset from center, etc.), should be noted on all pertinent graphical displays.
- (6) Conclusions or recommendations concerning the acceptability of the drilled shaft based on the interpretation of the TIP testing results obtained.

D Measurement

The department will measure Thermal Integrity Profiler (TIP) Testing pay items by the unit for each drilled shaft tested, acceptably completed, regardless of the number of thermal wire strings in the shaft.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4100	Thermal Integrity Profiler (TIP) Testing, Drilled Foundation Shaft 34.65-Inch	EACH
SPV.0060.4110	Thermal Integrity Profiler (TIP) Testing, Drilled Foundation Shaft 59.06-Inch	EACH

Payment will be full compensation for furnishing and installing the thermal wires, data collection unit, evaluation and interpretation of results, providing test reports.

168. Crosshole Sonic Log (CSL) Testing, Drilled Foundation Shaft 34.65-Inch, Item SPV.0060.4200; Crosshole Sonic Log (CSL) Testing, Drilled Foundation Shaft 59.06-Inch, Item SPV.0060.4210.

A Description

A.1 General

This special provision describes providing specialized equipment and trained testing personnel and to perform Crosshole Sonic Log (CSL) testing of drilled shafts according to the plans and as hereinafter provided.

Crosshole Sonic Logging, (CSL), is a nondestructive testing (NDT) method that measures the time for an ultrasonic pulse to travel from a signal source inside an access tube to a receiver inside another access tube and evaluates the integrity of drilled shafts.

A.2 CSL Testing Personnel Requirements

The contractor shall provide a CSL testing expert to direct and perform all aspects of the CSL testing and provide interpretation of results. The CSL testing expert shall be a professional engineer licensed in the State of Wisconsin, be employed by an independent testing agency, and have experience on a minimum of 5 projects performing CSL testing of drilled shafts. The independent testing agency shall have a minimum of 3 years of experience in performing CSL testing of drilled shafts. Submit the qualifications of the proposed CSL testing expert to the engineer for approval prior to beginning drilled shaft installation.

B (Vacant)

C Construction

C.1 CSL Testing Coordination

Schedule and coordinate drilled shaft construction with the CSL testing expert. Alter normal construction procedures as necessary to facilitate the CSL testing procedure. This includes providing suitable and safe

access to the site and specific locations of drilled shafts to be tested and aiding the CSL expert to facilitate the CSL testing.

C.2 CSL Testing

Perform CSL testing and analysis on each completed drilled shaft. Conduct CSL testing in accordance with ASTM D 6760. Notify the engineer, and the UPRR engineer if applicable, of the date and time of each CSL test at least 48 hours prior to the scheduled test. Perform CSL testing after the drilled shaft concrete has cured at least 72 hours and after the concrete compressive strength reaches or exceeds 2,500 psi.

Pull the CSL probes simultaneously, starting from the bottoms of the access tubes, over an electronic depth measuring device. Perform the CSL tests with the source and received probes in the same horizontal plane. Continuously record CSL signals at depth intervals of 2.5 inches or less from the bottom of the tubes to the top of each shaft. Perform CSL testing on every possible tube combination.

Immediately report potential local defects indicated by testing to the engineer.

Grout the access tubes after testing is complete, at the direction of the engineer. Place the grout with a pump, starting at the bottom of each access tube.

C.3 CSL Evaluation

Evaluate the concrete in the shaft using the following classification on each CSL profile:

- Satisfactory:
 - FAT increase 0% to 20%, and;
 - Energy reduction less than or equal to 9 decibels
- Defect:
 - FAT increase greater than 20%, or;
 - Energy reduction greater than 9 decibels

C.4 CSL Testing Reports

Within three working days of completion of CSL testing and receipt of shaft construction record, submit a CSL Testing Report for each tested drilled shaft to the engineer summarizing CSL testing results. At a minimum the CSL testing reports must include:

- (1) A description of the testing equipment, the date and location of test, and the number of days between concrete placement and CSL testing.
- (2) The CSL ultrasonic profiles with analyses of the following all tube pair combinations tested:
 - a. First pulse arrival time (FAT) versus depth.
 - b. Relative pulse energy / amplitude versus depth.
 - c. A presentation of the nested signal peak as a function of time plotted versus depth (waterfall diagram).
 - d. Note all shaft-specific construction information (e.g. elevations of the top of shaft, bottom of casing, bottom of shaft, etc.), on all pertinent graphical displays.
- (3) Indication of size and location along the depth of the shaft of all defects.
- (4) A discussion and assessment of the data quality and integrity of the tested drilled shaft, including a discussion of all interpretations in conflict with the evaluation criteria in subsection C.3, as well as a discussion of all other unusual results.
- (5) Conclusions or recommendations concerning the acceptability of the drilled shaft based on the interpretation of the CSL testing results against the evaluation criteria in subsection C.3.

D Measurement

The department will measure Crosshole Sonic Log (CSL) Testing pay items by the unit for each drilled shaft tested, acceptably completed, regardless of the number of access tubes in the shaft.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4200	Crosshole Sonic Log (CSL) Testing, Drilled Foundation Shaft 34.65-Inch	EACH
SPV.0060.4210	Crosshole Sonic Log (CSL) Testing, Drilled Foundation Shaft 59.06-Inch	EACH

Payment will be full compensation for furnishing testing equipment and performing CSL testing, evaluating and interpreting results, and providing test reports.

Furnishing and installing CSL access tubes are included in the shaft bid items.

169. Tieback Anchors, Item SPV.0060.4400; Tieback Anchors Performance Tests, SPV.0060.4410.

A Description

A.1 General

The work under this item consists of permanent, pressure-grouted or post grouted, ground anchors designed, furnished, installed, tested, and stressed.

Install ground anchors that shall develop the load carrying capacity indicated on the plans conforming to the testing subsection of these special provisions.

The contractor has the option to provide an alternate permanent grouted earth anchor system with the approval of the department. The contractor shall then be responsible for selecting the permanent earth anchor type, method of installation, and for determining the bond length and anchor diameter that shall develop the factored design loads indicated on the plans. The analysis, design, construction and testing of the post tiebacks shall conform to the AASHTO LRFD Bridge Design Specifications and the AASHTO LRFD Bridge Construction Specifications.

A.2 Qualifications of the Contractor

The contractor performing the work described in these special provisions must have installed ground anchors for excavation retaining walls for a minimum of 5 years. Submit a list containing at least five projects where the contractor has installed ground anchors. Specifically, experience must demonstrate competence in the use of pressure or post grouting. At least one project must show evidence of permanence with a 5-year minimum age. The project experience documentation must include a brief project description, construction methods used during installation, local soil conditions, actual construction time and contact information consisting of an individual's name and current phone number. Contacts must be capable of verifying project participation.

Submit staff experience records of the engineer, drill operators, and on-site supervisors who will be assigned to the project. The staff records must contain a summary of each individual's experience and it must be complete enough for the engineer to determine whether each individual has satisfied the following qualifications.

Assign an engineer to supervise the work who has at least four years of experience in the design and construction of anchored earth retaining structures in similar soils. Do not use consultants or manufacturer's representatives in order to meet the requirements of this section. Drill operators and on-site supervisors must have a minimum of one-year experience installing ground anchors with the contractor's organization.

Submit your qualifications and staff experience records at the preconstruction meeting or 21 calendar days prior to the start of ground anchor installation, whichever date is earlier. The engineer will approve or reject the contractor's qualifications and staff experience records within 14 calendar days after receipt of the submission. Do not start work on any ground anchor installation until approval of the contractor's qualifications and staff experience are given by the engineer. The engineer may suspend the ground anchor work if the contractor substitutes unqualified personnel for approved personnel during construction. If work is suspended due to the substitution of unqualified personnel, the adjustment in contract time resulting from the suspension of work will not be allowed.

A.3 Submittals

Prepare and submit to the engineer for review and approval working drawings and a design submission describing the ground anchor system or systems intended for use. The working drawings and design

submission must be submitted thirty business days before the commencement of the ground anchor work. The working drawing and design submission must include certificates of compliance for the following materials, if used. The certificates must state that the material or assemblies to be provided will fully comply with the requirements of the contract.

- Prestressing steel or bar;
- Portland cement;
- Prestressing hardware;
- Bearing plates.

The engineer will approve or reject the contractor's submittals within 14 calendar days after receipt of the submission.

Submit to the engineer for review and approval or rejection mill test reports for the prestressing steel and the bearing plate steel. The engineer may require the contractor to provide samples of any ground anchor material intended for use on the project. The engineer will approve or reject the prestressing steel and bearing plate steel within five business days after receipt of the test reports. Do not incorporate the prestressing steel and bearing plates in the work without the engineer's approval.

Submit to the engineer for review and approval or rejection calibration data for each test jack, pressure gauge and reference pressure gauge to be used. The engineer will approve or reject the calibration data within 5 business days after receipt of the data. Do not commence testing until the engineer has approved the jack, pressure gauge, and reference pressure gauge calibrations.

Submit to the engineer within 10 calendar days after completion of the ground anchor work, a report containing the following information:

- As-Built plans showing the location and vertical and horizontal orientation of the tiebacks, capacity, tendon type, total length, and unbonded length as installed.
- Steel tendon, corrosion protection elements and grout certifications and/or mill reports.
- Grouting records indicating the following:
 - Cement type
 - Cube test strength results
 - Grout volume for bonded and unbonded lengths
 - Grout pressure
- Show on the as-built plans the type of testing performed for each post tieback.
- Tieback tests results (Performance and proof test data with load-anchor elongation curves).
- Other records as required per standard spec 106.

A.4 Definitions

Anchorage Devices. The anchor head wedges or nuts, which grip the prestressing steel.

Bearing Plate. The steel plate, which distributes the ground anchor force to the structure.

Bond Length. The length of the ground anchor, which is bonded to the ground and transmits the tensile force to the soil or rock.

Factored Design Load. The factored design load is the maximum anticipated factored load that will be applied to the ground anchor during its service life after stressing and testing have been completed. Design loads and applicable load factors are per AASHTO LRFD Bridge Design Specifications.

Ground Anchor. A system, referred to as a tieback or an anchor, used to transfer tensile loads to soil or rock. A ground anchor includes all prestressing steel, anchorage devices, bearing plates, grout, coatings, corrosion protection, and sheathings and couplers if used.

Minimum Specified Ultimate Tensile Strength. The minimum breaking strength of the prestressing steel as defined by the specified standard.

Tendon Bond Length. The length of the tendon, which is bonded to the anchor grout.

Total Anchor Length. The unbonded length plus the tendon bond length.

Unbonded Length. The length of the tendon, which is not bonded to the grout. The grout surrounding the unbonded length is a void filler and provides corrosion protection.

B Materials

B.1 References

AASHTO Standards

- M85 Portland Cement
- M183 Structural Steel
- M275 Threadbar Prestressing Steel
- M203 Seven-wire, low relaxation strands
- M222 High-Strength Low-alloy Structural Steel with 50,000 psi Minimum Yield Point to 4 Inches Thick
- M252 Corrugated Polyethylene Drainage Tubing

ASTM Standards

- A53 Specification for Steel Pipe
- A252 Specification for Welded and Seamless Steel Pipe Files
- A500 Specification for Cold-formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- A722 Threadbar Prestressing Steel
- A779 Compact Seven-wire, low relaxation strands
- D1248 Specification for Welded and Seamless Steel Pipe Files
- D1784 Specification for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds
- D4101 Specification for Propylene Plastic Injection and Extrusion Materials

Post-Tensioning Institute Standards

- "Guide Specification for Post-Tensioning Materials," Post-Tensioning Manual, Post Tensioning Institute.
- "Specification for Unbonded Single Strand Tendons," Post-Tensioning Institute.
- "Recommendations for Prestressed Rock and Soil Anchors," Post-Tensioning.

B.2 Tieback Anchors

Admixtures that control bleed, improve flowability, reduce water content, and retard set may be used in the grout subject to the approval of the engineer. Expansive admixtures may only be added to the grout used for filling sealed encapsulations, trumpets, and anchorage covers. Accelerators are not permitted. Admixtures, if used, must be compatible with the prestressing steels and mixed per the manufacturer's recommendations.

Fabricate exposed anchorage covers from steel or ductile cast iron with a minimum thickness of 0.10 inches. Securely attach the cover to the anchorage device or bearing plate. If the cover is to be grease filled, then the cover must form a permanent watertight enclosure for the anchorage device.

Use anchorage devices capable of developing 95 percent of the minimum specified ultimate tensile strength of the prestressing steel tendon. The anchorage devices must conform to the static strength requirements of section 3.1.6 (1) and section 3.1.8 (1) of the PTI "Guide Specification for Post-Tensioning Materials".

Fabricate the bearing plate from steel conforming to ASTM A572 Grade 50 or AASHTO M223 Grade 50 specifications.

Fabricate the bond breaker from a smooth plastic tube or pipe having the following properties:

- Resistant to chemical attack from aggressive environments, grout or grease.

- Resistant to aging by ultra-violet light.
- Fabricated from material non-detrimental to the tendon or bar.
- Capable of withstanding abrasion, impact, and bending during handling and installation.
- Enable the tendon to elongate during testing and stressing.
- Allow the tendon to remain unbonded after lock-off.

Use Type I, II, or III Portland cement conforming to AASHTO M85 for grout. The corrosion inhibiting grease must conform to the requirements of section 3.2.5 of the PTI, "Specification for Unbonded Single Strand Tendons".

Fabricate heat shrinkable tubes from a radiation crosslinked polyolefin tube internally coated with an adhesive sealant. Before shrinking, the tube must have a nominal wall thickness of 24 mils. The adhesive sealant inside the tube must have a nominal thickness of 20 mils.

Fabricate ground anchor tendons from a single bar. Additionally, the ground anchor tendons must conform to the following:

Steel bars conforming to AASHTO M275, or ASTM A722.

Seven-wire, low relaxation strands conforming to M203.

Use steel couplers capable of developing 95 percent of the minimum specified ultimate tensile strength of the tendon.

Use a sheath as part of the corrosion protection system for the unbonded length portion of the tendon. Fabricate the sheath from one of the following:

- A polyethylene tube pulled or pushed over the prestressing steel. The polyethylene must be Type II, III, or IV as defined by ASTM D1248 (or approved equal). The tubing must have a minimum wall thickness of 60 mils plus/minus 10 mils.
- A hot melt extruded polypropylene tube. The polypropylene must be cell classification PP 210 B5554211 as defined by ASTM D4101 (or approved equal). The tubing must have a minimum wall thickness of 60 mils plus/minus 10 mils.
- A hot melt extruded polyethylene tube. The polyethylene must be high density Type III as defined by ASTM D3350 and ASTM D1248 (or approved equal). The tubing must have a minimum wall thickness of 60 mils plus/minus 10 mils.
- Steel tubing conforming to ASTM A500, minimum wall thickness of 0.20 inches.
- Steel pipe conforming to ASTM A53, Schedule 40 minimum.
- Plastic pipe conforming to ASTM A1185, Schedule 40 minimum.
- A corrugated tube conforming to the requirement of the tendon bond length encapsulation.

Spacers must permit grout to freely flow up the drill hole. Fabricate spacers from plastic, steel, or material that is non-detrimental to the prestressing steel. Do not use wood. A combination centralizer-spacer may be used.

Fabricate the trumpet used to provide a transition from the anchorage to the unbonded length corrosion protection from a steel pipe or tube conforming to the requirements of ASTM A53 for pipe or ASTM A500 for tubing. The trumpet must have a minimum wall thickness of 0.125 inches for diameters up to 4 inches and 0.20 inches for larger diameters.

Use potable water for mixing grout.

Fabricate tendons conforming to the following specifications.

- The tendons shall be shop fabricated from prestressing steel and materials conforming to the requirements of the Materials subsection of these special provisions. Fabricate the tendon as shown on the approved working drawings.
- The cement grout cover must provide corrosion protection of the tendon.
- Position spacers so their center-to-center spacing does not exceed ten feet. In addition, locate the upper spacer a maximum of five feet from the top of the tendon bond length, and locate the lower spacer a maximum of five feet from the bottom of the tendon bond length.

- The minimum unbonded length of the bar tendon must be 15 feet or as indicated on the plans or the approved working drawings, whichever is greater. The unbonded length must extend a minimum of 5 feet beyond the critical failure surface measured from the lowest subgrade level from the back of the retaining wall in the soil mass being retained by the wall. If the entire drill hole (tendon bond length and unbonded length) is grouted in one operation, then for the corrosion protection of the unbonded length provide either a sheath completely filled with corrosion inhibiting grease or grout, or a heat shrinkable tube internally coated with an elastic adhesive. If grease is used under the sheath, make provisions to prevent the grease from escaping at the ends of the sheath. The grease must completely coat the tendon, fill the void between the tendon and the sheath, and fill the interstices between the wires of the seven-wire strands. Provide a transition between the bond length and the unbonded length corrosion protection as illustrated in the working drawings. If the sheath is grout filled, a separate bond breaker must be provided. The bond breaker must prevent the tendon from bonding to the grout surrounding the unbonded length. If a grease-filled sheath corrosion protection is provided and the drill hole above the bond length is grouted after the ground anchor has been locked off, then grout the tendon inside a second sheath.
- The total anchor length must not be less than the minimum length indicated on the plans or the approved working drawings.
- Size the bearing plates so that:
 1. The bending stresses in the plate do not exceed the yield strength of the steel when a load equal to 95 percent of the minimum specified ultimate tensile strength of the tendon is applied;
 2. The average bearing stress on the concrete does not exceed that recommended in section 3.1.7 of the PTI, "Guide Specification for Post-Tensioning Materials".

Weld the trumpet to the bearing plate. The trumpet must have an inside diameter equal to or larger than the hole in the bearing plate. The trumpet must be long enough to accommodate movements of the structure during testing and stressing. For strand tendons with encapsulation over the unbonded length, the trumpet must be long enough to enable the tendon to make a transition from the diameter of the tendon in the unbonded length to the diameter of the tendon at the anchor head without damaging the encapsulation. Trumpets filled with corrosion-inhibiting grease must have a permanent Buna-N synthetic rubber or approved equal seal provided between the trumpet and the unbonded length corrosion protection. Trumpets filled with grout must have a temporary seal provided between the trumpet and the unbonded length corrosion protection or the trumpet must overlap the unbonded length corrosion protection by a minimum of one foot and fit tightly over the unbonded length corrosion protection.

Damage to the prestressing steel because of abrasions, cuts, nicks, welds and weld splatter will be cause for rejection by the engineer. Welding is not to be performed in the vicinity of the prestressing steel. Grounding of welding leads to the prestressing steel is forbidden. Protect the prestressing steel from dirt, rust or deleterious substances. If heavy corrosion or pitting is noted, the engineer will reject the affected tendons.

Use care in handling and storing the tendons at the site. Before inserting a tendon in the drill hole, the contractor and the engineer will examine the tendon for damage to the encapsulation and the sheathing. If, in the opinion of the engineer, the smooth sheathing has been damaged, repair it with ultra-high molecular weight polyethylene tape.

C Construction

C.1 Anchor Installation

C.1.1 General

Unless otherwise directed, select the drilling method, pressure grouting, post grouting, the grouting procedure, and the grouting pressure used for the installation of the ground anchor.

C.1.2 Drilling Method

Unless otherwise directed, the contractor may choose to utilize rotary drilling with casing, duplex or dual rotary drilling method, rotary drilling with stabilizing fluid, percussion drilling with casing, hollow stem auger drilling or driven casing provided that the anchor hole is maintained in a stable condition at all times, preventing collapse or excessive over-excavation of soils. Pervasive hole caving or ground loss problems

must be repaired by grouting at the contractor's expense to prevent damage to the adjacent ground mass and supported structures.

At the ground surface, locate the drill hole within twelve inches of the location shown on the plans or the approved working drawings. Locate the drill hole so the longitudinal axis of the drill hole and the longitudinal axis of the tendon are parallel. In particular, do not drill the ground anchor hole in a location that requires the tendon to be bent in order to enable the bearing plate to be connected to the supported structure. At the point of entry, the horizontal angle made by the ground anchor and the structure must be within plus/minus three degrees of a line drawn perpendicular to the plane of the structure unless otherwise shown on the plans or approved working drawings. Do not extend the ground anchors beyond the right-of-way or easement limits shown on the plans.

The tendon must be inserted into the drill hole to the desired depth without difficulty. When the tendon cannot be completely inserted, remove the tendon from the drill hole and clean or redrill the hole to permit insertion. Do not drive or otherwise force partially inserted tendons into the hole.

C.1.3. Grouting Method

Use a neat cement grout. The cement must not contain lumps or other indications of hydration. Admixtures, if used, must be mixed conforming to the manufacturer's recommendations.

Use grouting equipment that produces a grout free of lumps and undispersed cement. Use a positive displacement grout pump. The pump must be equipped with a pressure gauge in order to monitor grout pressures. The pressure gauge must be capable of measuring pressures of at least 150 psi or twice the actual grout pressures used by the contractor whichever is greater. The grouting equipment must be sized to enable the grout to be pumped in one continuous operation. The mixer must be capable of continuously agitating the grout.

Inject the grout from the lowest point of the drill hole. The grout may be pumped through grout tubes, casing, hollow-stem-augers, or drill rods. The grout may be placed before or after insertion of the tendon. Record the quantity of the grout and record the grout pressures. The grout pressures and grout takes must be controlled to prevent uncontrolled heave or fracturing.

The grout above the top of the bond length may be placed at the same time as the bond length grout but it may not be placed under pressure. The grout at the top of the drill hole must not contact the back of the structure or the bottom of the trumpet.

Upon completion of grouting and post grouting, the grout tube may remain in the hole, but it shall be filled with grout. Do not load the tendon for a minimum of three days after grouting.

C.2 Installation of Trumpet and Anchorage

The corrosion protection surrounding the unbonded length of the tendon must extend up beyond the bottom seal of the trumpet or one foot into the trumpet if no trumpet seal is provided. If the protection does not extend beyond the seal or sufficiently far enough into the trumpet, extend the corrosion protection or lengthen the trumpet.

The corrosion protection surrounding the unbonded length of the tendon must not contact the bearing plate or the anchor head during testing and stressing. If the protection is too long, trim the corrosion protection to prevent contact.

Completely fill the trumpet with corrosion inhibiting grease or grout. Trumpet grease can be placed any time during construction. Place trumpet grout after the ground anchor has been tested and stressed. Demonstrate to the engineer that the procedures selected for placement of either grease or grout will produce a completely filled trumpet.

Cover all anchorages permanently exposed to the atmosphere with a corrosion inhibiting grease-filled or grout-filled cover. Demonstrate to the engineer that the procedures selected for placement of either grease or grout will produce a completely filled cover.

C.3 Anchor Testing

C.3.1 General

Test each ground anchor. Do not apply any load greater than 10 percent of the factored design load to the ground anchor prior to testing. The maximum test load must not exceed 80 percent of the minimum specified ultimate tensile strength of the tendon. The test load must be simultaneously applied to the entire tendon. Stressing of single elements of multi-element tendons is not permitted.

Supply the following testing equipment:

- A dial gauge or veneer scale capable of measuring to 0.01 inches used to measure the ground anchor movement. The movement-measuring device must have a minimum travel equal to the theoretical elastic elongation of the total anchor length at the maximum test load and it must have adequate travel so the ground anchor movement may be measured without resetting the device.
- A hydraulic jack and pump used to apply the test load. The jack and a calibrated pressure gauge must be used to measure the applied load. The jack and pressure gauge must be calibrated as a unit by an independent firm. The calibration must have been performed within forty-five business days of the date submitted. Testing cannot commence until the engineer has approved the calibration. The pressure gauge must be graduated in 100-psi increments or less. The ram travel of the jack must not be less than the theoretical elastic elongation of the total anchor length at the maximum test load.
- A calibrated reference pressure gauge must also be kept at the site. Calibrate the reference gauge with the test jack and pressure gauge.
- Provide an electrical resistance load cell and readout for use when performing a creep test.
- Place the stressing equipment over the ground anchor tendon in such a manner that the jack, bearing plates, load cells and stressing anchorage are axially aligned with the tendon and the tendon is centered within the equipment.

C.3.2 Performance Tests

Install and conduct the performance tests. The anchors for the performance test must be similar to the production anchors shown on the plans and must be selected as directed by the engineer. Record the encountered soil information through the entire depth of drilling holes. Submit performance test results and soil information to the engineer for approval. If the tested anchor(s) fail(s) to pass the performance tests, at least five workdays shall be allowed for the engineer to evaluate the test anchor(s) and the soil condition. Additional performance tests may be required upon request from the engineer. The additional performance test(s), as required, and time for the engineer to evaluate the test anchor(s), will be included in the work and will not be paid for separately. Do not order material for production anchors until the approval of the performance test results are given.

Conduct performance tests according to the following procedures on five percent of the ground anchors or a minimum of three ground anchors per wall, whichever is greater. The engineer will select the ground anchors to be performance tested. Test the remaining ground anchors according to the proof test procedures.

Conduct performance tests by incrementally loading and unloading the ground anchor according to the following schedule. Raise the load from one increment to another immediately after recording the ground anchor movement. Measure and record the ground anchor movement to the nearest 0.01 inches with respect to an independent fixed reference point at the alignment load and at each increment of load. Monitor the load with a pressure gauge. Place the reference pressure gauge in series with the pressure gauge during each performance test. If the load determined by the reference pressure gauge and the load determined by the pressure gauge differ by more than ten percent, recalibrate the jack, pressure gauge and reference pressure gauge at no expense to the department. At load increments other than the maximum test load, hold the load just long enough to obtain the movement reading.

Performance Test Schedule

Load
AL
0.20 FDL*
AL
0.20 FDL
0.40 FDL*
AL
0.20 FDL
0.40 FDL
0.60 FDL*
AL
0.20 FDL
0.40 FDL

0.60 FDL
0.75 FDL
AL
0.20 FDL
0.40 FDL
0.60 FDL
0.75 FDL
1.00 FDL*
AL
0.20 FDL
0.40 FDL
0.60 FDL
0.75 FDL
0.90 FDL
1.15 FDL* (Max. test load)
Reduce to lock-off load – 0.60 FDL

Where, AL = Alignment Load

FDL = Factored Design Load for Tieback

* = Graph required

Hold the maximum test load in a performance test for ten minutes. Repump the jack as necessary in order to maintain a constant load. Start the load-hold period as soon as the maximum test load is applied. Measure and record at 1, 2, 3, 4, 5, 6, and 10 minutes the ground anchor movement with respect to a fixed reference. If the ground anchor movement between one minute and ten minutes exceeds 0.04 inches, hold the maximum test load for an additional 50 minutes. If the load-hold period is extended, record the ground anchor movement at 15, 20, 25, 30, 45 and 60 minutes.

Plot the ground anchor movement versus load for each load increment marked with an asterisk (*) in the performance test schedule and plot the residual movement of the tendon at each alignment load verses the highest previously applied load.

C.3.3 Proof Tests

Perform the proof test by incrementally loading the ground anchor according to the following schedule. Raise the load from one increment to another immediately after recording the ground anchor movement. Measure and record the ground anchor movement to the nearest 0.01 inches with respect to an independent fixed reference point at the alignment load and at each increment of load. Monitor the load with a pressure gauge. At load increments other than the maximum test load, hold the load just long enough to obtain the movement reading.

Hold the maximum test load in a proof test for ten minutes. Repump the jack as necessary in order to maintain a constant load. Start the load-hold period as soon as the maximum test load is applied. Measure and record the ground anchor movement with respect to a fixed reference at 1, 2, 3, 4, 5, 6, and 10 minutes. If the ground anchor movement between 1 minute and 10 minutes exceeds 0.04 inches, hold the maximum test load for an additional 50 minutes. If the load-hold period is extended, record the ground anchor movements at 15, 20, 25, 30, 45 and 60 minutes.

Proof Test Schedule

Load
AL
0.20 FDL
0.40 FDL
0.60 FDL
0.75 FDL
1.00 FDL
Reduce to lock-off load – 0.60 FDL

Where, AL = Alignment Load

FDL = Factored Design Load for Tieback

Plot the ground anchor movement versus load for each load increment in the proof test.

Submit proof tests for review by the engineer within 7 days of testing.

C.3.4 Ground Anchor Load Test Acceptance Criteria

A performance- or proof-tested ground anchor with a 10-minute load-hold period is acceptable if the:

- The tieback resists the maximum test load with less than 0.04-inches of movement between 1 minute and 10 minutes.
- The total elastic movement of the tendon measured at the anchor head obtained from a proof or performance test must exceed 80 percent of the theoretical elastic elongation of the stressing or unbonded length for load increments 0.25 DL and above.
- The total movement of tendon must not exceed 100 percent of the theoretical elastic elongation of the unsupported length plus 50 percent of the supported length.

A performance- or proof-tested ground anchor with a 60-minute load-hold period or a creep-tested ground anchor is acceptable if the:

- Ground anchor carries the maximum test load with a creep rate that does not exceed 0.08 inches/log cycle of time; and
- Total movement at the maximum test load exceeds 80 percent of the theoretical elastic elongation of the unbonded length.

If the total movement of the ground anchors at the maximum test load does not exceed 80 percent of the theoretical elastic elongation of the unbonded length, replace the ground anchor at no additional cost to the department.

Ground anchors that have a creep rate greater than 0.08-inches/log cycle of time can be incorporated in the finished work at a load equal to one-half its failure load. The failure load is the load carried by the ground anchor after the load has been allowed to stabilize for ten minutes.

When a ground anchor fails, modify the design and/or the construction procedures. These modifications may include, but are not limited to, installing replacement ground anchors, reducing the factored design load by increasing the number of ground anchors, modifying the installation methods, increasing the bond length or changing the ground anchor type. Any modifications of design or construction procedures including installing additional anchors shall be at the contractor's expense and at no additional charge to the department.

Upon completion of the test, reduce the load to the lock-off load indicated on the plans and transfer the load to the anchorage device. The ground anchor may be completely unloaded prior to lock off. After transferring the load and before removing the jack, record a lift-off reading. The lift-off reading must be within ten percent of the specified lock-off load. If the load is not within ten percent of the specified lock-off load, reset the anchorage and record another lift-off reading. Repeat this process until the desired lock-off load is obtained.

D Measurement

The department will measure Tieback Anchors by each individual tieback anchor, acceptably completed, that are capable of carrying the load specified on the plans, which includes a proof test of each anchor.

The department will measure Tieback Anchor Performance Tests by each individual performance test, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4400	Tieback Anchors	EACH
SPV.0060.4410	Tieback Anchor Performance Tests	EACH

Payment for Tieback Anchors and Tieback Anchor Performance Tests is full compensation for drilling; grouting/post grouting; furnishing all steel, bearing plates and corrosion-protection materials required and tensioning.

Hauling and disposal of contaminated material will be measured and paid for separately under the bid items, "Excavation, Hauling, and Disposal of Petroleum Contaminated Soil", "Excavation, Hauling, and Reuse of Low-Level Petroleum Contaminated Soil", "Management of Solid Waste – Greves St, West of 27th St", or "Management of Solid Waste – Greves St, West of 27th St" included in the contract.

170. Trial Drilled Foundation Shaft 34.65-Inch, Item SPV.0060.4600.

A Description

The work included herein consists of installing a non-production, trial drilled foundation shaft to verify the proposed means and methods of drilled foundation shaft installation for construction of drilled foundation shafts shown in the plans.

Engineer acceptance of a successfully constructed trial drilled foundation shaft is required prior to beginning the installation of any other drilled foundation shafts for the contract.

B Materials

All materials for the trial drilled foundation shaft are to be as specified in the bid item Drilled Foundation Shaft 34.65-Inch.

C Construction

The trial drilled foundation shaft must be installed by the same contractor and work crews who will perform the production drilled foundation shaft installation work on the contract. Submit a Drilled Foundation Shaft Installation Plan at least 14 days prior to beginning work on the trial drilled foundation shaft per section C.1 of SPV article Drilled Foundation Shaft (diameter) included in the contract. Use the same low overhead equipment and installation procedures intended to be used for the pier 1 production work on the contract and in accordance to the accepted Drilled Foundation Shaft Installation Plan.

The trial drilled foundation shaft is intended to be installed in the same or similar soil profile as the production drilled foundation shafts included in the contract. Construct the trial drilled foundation shaft within a 100-foot radius of Pier 1 of B-40-1083 or as approved by the engineer. The drilled foundation shaft bottom elevation must match the drilled foundation shaft bottom elevation shown in the plans for pier 1 of B-40-1083. The overall length of the shaft must be within +/- 5 feet of the drilled foundation shaft for 1 of B-40-1083.

The trial drilled foundation shaft shall consist of one 34.65-inch diameter drilled shaft as shown on the plans for pier 1 of B-40-1083. The trial drilled foundation shaft shall be reinforced the same as the production drilled foundation shaft for pier 1 of B-40-1083 including bar coupler splices of the vertical reinforcement cage and the extension of reinforcement out the top of the foundation shaft. Include four crosshole sonic logging (CSL) tubes and 4 Thermal Wires™ within the trial drilled foundation shaft as shown on the plans and as specified for SPV pay items Drilled Foundation Shaft 34.65-Inch, Thermal Integrity profiler (TIP) Testing, Drilled Foundation Shaft 34.65-Inch and Crosshole Sonic Log (CSL), Drilled Foundation Shaft 34.65-Inch.

Construction of the trial drilled shaft shall be as specified under the SPV item Drilled Foundation Shaft 34.65-Inch and the accepted Drilled Foundation Shaft Installation Plan. Dispose of all soil excavation and excess materials removed for construction of the trial drilled foundation shaft in accordance to the requirements of the contract.

After installation of the trial drilled foundation shaft, perform thermal integrity profile testing in accordance with the SPV pay item Thermal Integrity Profiler (TIP) Testing, Drilled Foundation Shaft 34.65-Inch and Crosshole Sonic Log (CSL), Drilled Foundation Shaft 34.65-Inch.

Acceptance of the trial drilled foundation shaft will be as specified for SPV pay item Drilled Foundation Shaft 34.65-Inch including non-destructive testing as specified for SPV pay item Drilled Foundation Shaft 34.65-Inch.

Upon acceptance by the engineer, cutoff the trial drilled foundation shaft and remove as necessary so as to be at least 2 feet below finished grade, or 4 feet below proposed top of pavement, and abandoned in place.

D Measurement

The department will measure Trial Drilled Foundation Shaft (diameter) as each unit of work, acceptably completed.

Unsuccessful or rejected trial drilled foundation shaft installations, or trial drilled foundation shafts not meeting specifications, will not be measured for payment or be cause for additional compensation.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4600	Trial Drilled Foundation Shaft 34.65-Inch	EACH

Payment is full compensation for rock core drilling; drilling and excavating the trial drilled foundation shaft; handling and properly disposing of excavated, augured and cored soils; placing the concrete for drilled foundation shaft to the required diameter and depth; furnishing and installing the reinforcing steel; furnishing and placing CSL tubes and TIP wires; accommodating CSL and TIP testing; meeting QMP drilled shafts special provision; removal; backfilling; and for site restoring.

Providing and installing Thermal Wires™ and performing thermal integrity profile testing will be measured and paid for separately under the SPV pay item Thermal Integrity Profiler (TIP) Testing included in the contract. Furnishing testing equipment and performing CSL testing, evaluating and interpreting results, and providing test reports.

If encountered, clearing unknown manmade obstructions as defined in Section C.3.6.4 of SPV article Drilled Foundation Shaft (diameter) and SPV article Obstructions Drilled Foundation Shaft will be measured and paid for separately under the SPV pay item Obstructions Drilled Foundation Shaft.

171. Underdeck Utility Structure B-40-1083 Item SPV.0060.4700.

A Description

This section describes installing a duct package of three (3), 4-inch diameter, Fiberglass Reinforced Epoxy (FRE) conduits, the conduit support system including all support hangers, connections to utility support angles, and the concrete backwall penetration on Structure B-40-1083 as shown on the plans.

AT&T will furnish underdeck utility installation plans, specifications, and hardware; including conduits, support system, and connections.

B Materials

Materials to be supplied by AT&T.

C Construction

Construct according to the details shown in the plans furnished by AT&T.

The three-duct package to be installed on B-40-1083 consists of three (3) 4-inch ducts, one high by three wide.

Install the conduit 5 feet beyond the back of the bridge abutment backwall. Install a fiberglass to PVC adaptor on the end of each duct and temporarily cap.

Coupling of the duct sections shall be accomplished and secured by first applying epoxy adhesive then mating a spigot end into an integral bell end with a blow to the open end of the duct section.

To request specifications and shop drawings for conduits, hanger support tubes, hanger support assemblies, expansion couplings and hanger layout contact:

AT&T

Attn: Mr. Jay Bulanek
Sr. Specialist, OSP Design Engineer
435 South 95th Street
Milwaukee, WI 53214

Submit request at least 60 business days in advance of the bridge deck placement.

Notify Mr. Jay Bulanek at (414) 491-2855 of AT&T five (5) business days in advance of the final installation of the conduit system.

Install all FRE duct and components according to the manufacturer's instructions.

D Measurement

The department will measure Underdeck Utility B-40-1083 as a single unit acceptably completed.

E Payment

The department will pay for the measured quantity at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4700	Underdeck Utility Structure B-40-1083	EACH

Payment is full compensation for installing the underdeck utility ducts and the complete conduit support system including galvanized steel hanger support tubes, pultruded FRP and stainless-steel components of the utility hanger assembly, stainless steel hanger rods, expansion couplings, abutment and backwall penetration, miscellaneous hardware, and for furnishing all labor, equipment, tools and incidentals necessary to complete the work in accordance to the contract. Duct and associated fittings rendered unfit for use by the contractor through the contractor's operations shall be replaced by the contractor in kind at the contractor's own cost and expense.

172. Retaining Wall Instrumentation (R-40-761), Item SPV.0060.4800; Retaining Wall Instrumentation (R-40-767), Item SPV. 0060.4810.

A Description

A.1 General

This work involves installing geotechnical instrumentation and collecting data on or near the Retaining Wall structures R-40-761 and R-40-767 for the purpose of monitoring the wall movement as well as ground movement in the vicinity of structure excavations and any nearby properties during the construction of the two Retaining Walls. The instrumentation program specified herein and shown on the plans is not intended to be used to ensure the safety of the work.

The contractor shall be responsible for installing the required instrumentation and collecting the required monitoring data as specified herein. The instrumentation program required by this article does not relieve the contractor of responsibility for providing additional instrumentation and monitoring if, in the contractor's opinion, such additional instrumentation and monitoring are necessary to accomplish the work.

This article covers the work necessary to furnish and install geotechnical instrumentation, maintaining installed instruments, taking initial and subsequent instrument readings, and removal and abandonment, if necessary, of the instruments after construction.

All the vibrating wire piezometer, inclinometer, multiple position borehole extensometer, and 3-axis tiltmeters, along with the necessary data loggers and any necessary data acquisition system, shall be purchased (not rented) to enable long-term monitoring after construction is completed (by others). The contractor shall hand over these instruments and an active website, that contains the previous instrumentation measurements during construction, to the owner at the end of construction.

A.2 Submittals

Submit the following specific information for information only, at least 30 days prior to the start of instrument installation, except submit copies of DNR forms as soon as possible after instruments are installed or abandoned:

1. Submit qualifications and experience of instrumentation specialists and personnel.
2. Instrumentation shop drawings detailing locations, depths based on general information shown on the plans, type, details, and other pertinent information showing the installation details for each type of instrumentation required.
3. Drawing that indicates the locations of control points and benchmarks associated with surveys for monitoring geotechnical instrumentation.
4. Description of methods for installing and protecting all instruments.
5. Materials and mix portions for cement-bentonite or cement-lime grout for installing inclinometers.
6. Schedule of instrument installation related to significant activities or milestones in the overall project.
7. Following installation of the instruments and prior to the start of retaining wall construction, submit as-built shop drawings showing the exact installed location, the instrument identification number, the instrument type, the installation date and time, the heading station or portal or shaft excavation depth on the installation date, when applicable, and the anchor or tip elevation and instrument length, when applicable, and installed locations of control

- points and benchmarks associated with surveys for monitoring geotechnical instrumentation. Include details of installed instruments, gateway(s), accessories, and protective measures including all dimensions and materials used.
8. Manufacturer's literature describing installation, operation, and maintenance procedures for all instruments, materials, data logger units, and accessories.
 9. Drilling and installation logs for instrumentation installations prepared by the instrumentation specialist.
 10. Submit for each instrument to be installed, as applicable, a certificate issued by the instrument's manufacturer stating that the manufacturer has inspected and tested each instrument before it leaves the factory to see that the instrument is working correctly and has no defects or missing parts.
 11. Submit permits and consents for drilling holes from ground surface and conducting monitoring activities.
 12. Plans for geotechnical instrumentation to be installed at contractor's option.

A.3 Definitions

Open Ground: Ground without any above- or below-grade facilities, paved or unpaved roads, and utilities within a 25-foot horizontal radius.

Surface Settlement Marker (SM): Stakes, rods, or nails installed in unpaved or paved areas at predetermined locations to measure vertical (elevation) changes of the ground surface.

Structure Settlement Marker (SSM): A readily identifiable existing feature or new paint marking on an existing building; or an inscribed marking, approved surveyor's nail, or brass or stainless-steel rod (pin) installed onto a manhole, vault, or other similar structure at predetermined locations to measure vertical elevation changes of a facility or structural element.

Inclinometer (INC): Instrument for measuring relative horizontal displacements affecting the shape of a guide casing embedded in the ground or a structure.

Wireless 3-Axis Tiltmeters (TM): Instruments that measure relative rotations using MEMS (Micro-Electro-Mechanical Systems) accelerometers. Tiltmeters provide high-resolution measurements and record the tilt along two axes of rotation from the horizontal. Tiltmeters typically come with long-lasting batteries capable of providing measurements for several years, depending on the frequency of the measurement intervals.

Multiple Position Borehole Extensometer (EXT): The multiple position borehole settlement extensometer is a device capable of measuring vertical settlement at multiple points along its length. It measures changes in distance between multiple anchors placed at different depths within a borehole and a reference point at or near the surface.

Vibrating Wire Piezometer (VWP): A vibrating wire piezometer converts water pressure to a frequency signal via a diaphragm, a tensioned steel wire, and an electromagnetic coil. The piezometer is designed so that a change in pressure on the diaphragm causes a change in tension of the wire. When excited by the electromagnetic coil, the wire vibrates at its natural frequency. The vibration of the wire in the proximity of the coil generates a frequency signal that is transmitted to the readout device. The readout device processes the signal, applies calibration factors, and displays a reading in the required engineering unit.

Observation Well (OW): A monitoring well-constructed in a borehole using a casing section near the ground surface and a specially slotted pipe section (well screen) above the bottom of the well. The well screen length and position normally extends from several feet above to several feet below the anticipated water table range.

Jackout Earth Pressure Cells (EP): Instruments used to measure earth pressures. These cells are designed to fit inside a plate that is pressed against the side of an excavation using a hydraulic jack arrangement.

Vibrating Wire Load Cell (LC): Devices used to measure compressive loads in structures. They work by converting the load into a frequency signal using vibrating wire technology, which provides accurate and reliable measurements. These load cells are used to monitor the loads applied to tieback anchors.

Strain Gauge (SG): An instrument designed to monitor strain in a structural member. Strain gauges convert the mechanical deformation (strain) into a measurable electrical signal.

Baseline Readings: A value or range of values obtained from a series of measurements taken over a period before any potential impact from construction activities. The purpose of these initial readings is to confirm the instrument's proper functioning, understand the influence of current conditions, and better

evaluate the construction's impact on the monitored instrument. Response Levels are determined with respect to these Baseline Readings.

Real Time Monitoring: Real time monitoring is defined as an automated, remote, and web-based monitoring system. This system shall be provided for all the instrumentation. All data collected shall be provided to the department and Engineer using an internet website. The data collection data loggers, gateway(s), any other necessary data acquisition system equipment, and any subscription fees for website access should be included in the instrumentation pricing. The collection data box shall contain full backup power and backup memory to store data for at least 72 hours.

A.4 Quality Assurance

A.4.1 General

The contractor shall notify the engineer at least 24 hours prior to all instrumentation installation operations so that the engineer may monitor the installation work.

Each instrument specified herein shall be the product of an acceptable manufacturer currently engaged in manufacturing geotechnical instrumentation hardware of the specified types.

A.4.2 Personnel Qualifications

Qualified technicians with a minimum of 2 years experience in the installation of geotechnical instrumentation similar to those specified herein.

Instrumentation Specialist: A professional civil or geotechnical engineer or engineering geologist, registered in the State of Wisconsin with a minimum of 5 years experience in the installation of instrumentation specified herein. The instrumentation specialist shall prepare instrumentation shop drawings, supervise and direct technicians, and be responsible for the installation of required instruments. The instrumentation specialist shall be physically present at the installation sites to supervise the installations.

A.4.3 Control Points

Surveys for monitoring geotechnical instrumentation shall be referenced to the same control points and benchmarks established for setting out the work. Control points shall be tied to benchmarks and other monuments outside of the zone of ground movements that might result from fills or excavations.

A.4.4 Tolerances

Instruments shall be installed within 12 inches of the horizontal locations indicated on the plans or approved shop drawings.

Should actual field conditions prohibit installation at the locations and elevations indicated on the plans, prior acceptance shall be obtained from the engineer for new instrument locations and elevations.

A.4.5 Project Conditions

Obtain necessary permits for the installation of monitoring systems.

The entire instrumentation system, including the instruments, data loggers, gateway(s), and any other necessary data acquisition equipment, shall be protected from theft, vandalism or other accidental damage using steel locking covers or traffic-rated flush bolt-down covers. Any repairs or replacement to the real-time monitoring system or the protective housing shall be done at no additional cost to the department.

A.4.6 User Security and Authorization

The instrumentation system access shall be password protected, including web interface access and direct connections to the instrumentation data logging equipment. The project database shall be backed up regularly to a separate physical location from the web server to avoid loss of data.

Provide the engineer and the department access to the instruments at all times. Project users, including the department and engineer, and any additional third party authorized by the department, shall have access to the data presentation and reporting system/website. The instrumentation specialist may restrict the access to view, print, and download/export data.

All electronic equipment shall be equipped with firewalls and other appropriate protection measures to prevent unauthorized use and entry.

B Materials

B.1 Protection

Provide a protective cover for all instruments installed in boreholes from the ground surface. Instrument heads for in-ground instruments shall be contained within manholes large enough to accommodate the instrument head and any supporting devices such as data loggers. Protective covers shall be guard casings or valve boxes depending upon installation location, as specified in this article.

Guard casing shall consist of Schedule 40 steel pipe, or equal. Guard casing shall be of such length that it will have a minimum depth below ground surface of 2 feet, and a height above ground surface of 2 feet to 4 feet, or as instructed by the engineer. Guard casing shall have a bolting or screw-type cover that is free of sharp edges and burrs and is easy to remove for monitoring.

Valve boxes shall be cast iron or steel designed to resist traffic loading typical for roadway installation. Valve box shall be of such length that it will have a minimum depth below the ground surface of 1.5 feet when installed flush with the ground surface. The valve box shall have a bolting cover.

B.2 Filter Pack

Filter pack shall be clean natural silica sand; graded such that all of the material passes the No. 4 sieve and is retained on the No. 30 sieve.

B.3 Filter Pack Seal

Filter pack seal shall be clean natural silica sand; graded such that all of the material passes the No. 10 sieve and is retained on the No. 40 sieve.

B.4 Bentonite Seal

Bentonite pellets used to form bentonite seals shall be 3/8-inch diameter compressed pellets made from high swelling montmorillonite.

B.5 Grout

Grout mixes for each instrument type are specified herein.

B.6 Piezometers and Observation Wells Casing

Casing for piezometers and observation wells shall consist of schedule 40 or thicker PVC pipe with flush threaded couplings. All PVC pipe shall have a nominal diameter of 2 inches. A PVC cap for the casing shall be provided. Sensing tips shall consist of 2-inch ID factory-slotted PVC threaded pipe, with 0.02-inch size openings, 60 inches in length.

B.7 Piezometer (VWP) Vibrating Wire Probe and Electronic Data Loggers

The vibrating wire piezometer monitoring system shall include probe, 100 feet of cable, and a data logger unit. The vibrating wire piezometer system shall be rated for 3.5 bar (50 psi), measure water pressure. The vibrating wire piezometer system shall have a remote wireless setup capable of reading and data logging. The vibrating wire piezometer probes, cables, remote monitoring system, data logging instruments, and data reduction software should all be compatible by design. Coordinate VWP installation with the MSE wall construction to avoid any damage to the instruments.

B.8 Inclinator Casing

Inclinometer casing shall be grooved plastic 2.75-inch OD casing that is compatible with the inclinometer being provided. The casing shall be complete with necessary rigid self-aligning couplings and end plugs. Grout backfill for the inclinometer casing shall be designed to conform to the surrounding ground based on subsurface material as recommended by the instrument manufacturer.

B.9 Inclinator (INC) Probe and Electronic Data Loggers

The inclinometer monitoring system shall be an in-place inclinometer that includes probe, 100 feet of cable, cable relief, pulley assembly, cable hold, and data logger unit. The inclinometer resolution of data shall be at least to within 0.001 inches per foot, accuracy of 0.25-inch per 100 feet or better. Couplings, locking devices, caps and grout shall be the sizes and types as recommended by the manufacturer. All cables connected to the real-time monitoring device shall be protected and routed through schedule 80 PVC pipe to ensure that these are not damaged during construction activities. Any other devices needed to facilitate and achieve the required real-time monitoring shall be furnished and installed.

B.10 Surface Settlement Markers (SM)

Surface settlement markers in paved areas shall be hardened steel markers treated or coated to resist corrosion, with an exposed convex head having a minimum diameter of 1/2 inch and similar to surveyor's PK nails.

Surface settlement markers in unpaved areas shall be a 2-inch by 2-inch by 18-inch-long hardwood hub driven to grade.

B.11 Structure Settlement Markers (SSM)

Settlement markers on roadway surfaces, retaining walls or buildings shall consist of a 3/16-inch diameter brass or stainless-steel rod, 2 inches in length or longer, epoxy grouted into a 1/4-inch diameter hole drilled into the building. The exposed end of the rod shall have no sharp edges.

B.12 Multiple Position Borehole Extensometer (EXT)

The multi-point settlement extensometers monitoring system shall include adequate cable length to facilitate the monitoring. The drilled holes shall be of a diameter recommended by the manufacturer to accommodate the number of anchors. The multiple position shall have at least three (3) anchor points. The extensometer readout shall measure multi-point settlements at the specified depth of the extensometer and shall digitally store, process and report the data as settlement movements from a stored baseline reading.

The multiple position settlement extensometers shall be capable of measuring up to 24 inches of settlement with readings precision of 0.002 inches and accuracy of 0.005 inches or better. The extensometer head shall include a method for backup mechanical readings concurrent with electrical readings and without disturbing electrical connections or transducers.

All cables connected to the real-time data logger equipment shall be protected and routed through schedule 80 PVC pipe to ensure that these are not damaged during construction activities.

Provide a remote monitoring system capable of wireless data transmission. Any other devices needed to facilitate and achieve the required real-time monitoring shall be furnished and installed.

B.13 Tiltmeters (TM)

Electronic 3-axis tiltmeters with anchors, brackets, and appropriate wireless capability with a minimum range of $\pm 10^\circ$ and resolution of 9 arc seconds or better. A remote wireless system that is capable of reading and data logging of tilt readings.

Strain Gauges (SG)

All Strain Gauges shall be capable of automated reading. Provide embedded vibrating wire strain gauges attached to reinforcement with appropriate welding, support bars, cable ties, and protective covers for use on drilled shafts as specified in the plans.

Vibrating Wire Load Cells (LC)

Vibrating wire load cells with appropriate mounting hardware to monitor the tieback anchors loading at the locations shown in the plans. The load cell capacity shall not be less than 500 kips with a resolution of 0.25 kips or less.

C Construction

C.1 General

Instrumentation shall be installed at the locations indicated on the plans or approved shop drawings, and as approved by the engineer. All instrumentation shall be installed under the direct supervision of the contractor's instrumentation specialist.

Locate conduits and underground utilities in all areas where borings are to be drilled and instruments installed. Instrument locations shall be modified, as approved by the engineer, to avoid interference with the existing conduits and utilities. Repair damage to existing utilities resulting from instrument installations at no additional cost to the department.

Geotechnical instrumentation shall be installed, and baseline surveys or initial readings completed before commencing any excavation work or fill. Tiltmeters located on soldier piles shall be installed before any excavation occurs. Tiltmeters on MSE walls shall be installed as soon as the MSE wall panel facing where the tiltmeter is located is completed. A qualified instrumentation specialist shall install the instrumentation as shown on the project plans and as specified herein. The instrumentation specialist shall have documented experience as set forth in the subsection, Quality Assurance.

An as-installed position survey shall be conducted to determine the horizontal and vertical positions of all instruments in accordance with the requirements herein. The specifications regarding drilling wells in section 639.3 do not apply to the installation of geotechnical instrumentation.

C.2 Review of Instrumentation Plan

The instrumentation plan specified herein and shown on the plans may be modified by the engineer prior to installation, to suit the contractor's means and methods of construction. Prior to ordering materials or installation of instruments, confer with the engineer as to the suitability of the planned instruments and locations, regarding proximity to excavations and compatibility with the means and methods of excavation, ground support and groundwater control.

Replace, at no cost to the department, instrumentation in place that becomes inaccessible or unreadable as a result of the contractor's means and methods of construction or changes in the contractor's means and methods of construction that could have been anticipated by the contractor prior to installation. The locations of replacement instruments shall be jointly determined by the engineer and contractor.

C.3 Installation

Complete installation and testing of each instrument located outside of excavations and fills a minimum of 1 week prior to excavation or fill within 100 feet of the instrument.

The anticipated general locations of instrumentation are shown on the plans. Check instruments to be installed in borings for interference with utilities and subsurface facilities. Mark locations of all instruments in the field prior to installation acceptance of the location obtained from the engineer. Confer with the engineer in the event that conflicts with utilities occur, and changes to the planned locations become necessary.

All instruments shall be clearly marked, permanently labeled, and protected to avoid being obstructed or otherwise damaged by construction operations or the general public. Protective housing and box or vault covers shall be marked.

After installation of each instrument, survey the as-built location to define the vertical and lateral positions of the exposed parts.

C.4 Protection and Maintenance

Flag and protect all locations. Exercise care during construction so as to avoid damage to instrumentation. Repair or replace instrumentation that is damaged as a result of the contractor's operation at his expense. The engineer will determine whether repair or replacement is required. Complete the repair or replacement as soon as practical after notification by the engineer as to whether a repair or replacement is required.

Maintain exposed parts of installed instruments as necessary to ensure their availability for use for the duration of the work. The engineer will perform maintenance and calibration of data logger devices.

C.5 Soil Drilling and Sampling

Hollow stem auger methods may be used to provide a casing for temporary soil support. Boreholes shall be oversized at the ground surface as necessary to accommodate the instrument head and any supporting devices such as data-loggers as well as the installation of protective covers.

Arrange ports in the drilling bit so that there is no jetting action of the drilling fluid ahead of the bit. Use the minimum amount of fluid necessary to carry away the cuttings.

Complete soil sampling at intervals of 2.5 feet or less using standard penetration tests that are conducted in accordance with ASTM D 1586.

Store representative sample portions not retained for analytical laboratory testing in glass jars approximately 5 inches high and 1-3/4 inches in inside diameter at the mouth. Provide jars with metal screw caps containing a rubber or waxed paper gasket that forms an airtight seal when closed. Provide jars with labels large enough to identify the jar with the project number and name, boring number, sample number, depths at top and bottom of sample, blow count and recovery. Perform the laboratory testing on retained samples as deemed necessary.

Observe all soil drilling and sampling and prepare a log of the boring.

Upon completion of drilling, flush the boring with clear water prior to instrument installation.

C.6 Potholing

Potholing is defined as the use of vacuum excavating or low-pressure water jetting and vacuum excavating to advance holes with a low risk of utility damage to confirm utility locations or to advance holes for grout pipes or geotechnical instrumentation to depths below utilities of concern. Perform

potholing to at least one foot below anticipated utility bottom levels when installing piezometers, extensometers, and inclinometers.

C.7 Tremie Grouting

Perform tremie grouting by pumping grout through a tremie pipe positioned 3 to 5 feet above the bottom of the space to be grouted. Keep the bottom end of the tremie pipe submerged in grout as the grout level is brought up to the ground surface. The density of the grout flowing from the space at the ground surface shall be the same as the density of the grout being placed. Allow the grout to set for a minimum 12-hour period before additional materials are placed on top of the grout. Top off any settling of grout.

C.8 Installing Protective Cover

Extend above the ground surface instruments that are installed in isolated, undeveloped, non-traffic or non-landscaped areas and cover them with a guard casing. Install the casing so as to prevent surface water from entering the installation, and to permit easy access to the instrument location.

Terminate instruments that are installed in roadways, parking lots or in landscaped areas below road or ground surface and cover them with a valve box. Install the valve box so as to prevent damage to or from vehicular traffic, to prevent traffic loads on the instrument installation, to allow free drainage of surface infiltration through the valve box, and to permit easy access for instrument monitoring.

There shall be no less than 2 inches and no more than 6 inches between the top of the instrument and the top of the protective cover.

Grout the protective cover securely in place. The grout shall consist of a mixture of equal proportions of coarse sand and cement, and the minimum amount of water necessary to provide a workable consistency.

C.9 Installing Vibrating Wire Piezometers

Drill, sample and log borings in soil drilled for the purpose of installing vibrating wire piezometers and observation wells as specified here in subsection, Soil Drilling and Sampling. Drill borings using 4-inch minimum inside diameter casing and water. Drill the borings so as not to damage adjacent utilities. If use of drilling fluid is necessary to stabilize the borehole, use a biodegradable organic polymeric drilling fluid. Perform a standard penetration test at 2.5-foot depth intervals.

Install the sensing tip, casing, filter pack, filter pack seal, and annular space seal as determined by the instrumentation specialists. The instrumentation specialist will determine the depth of the sensing zone for each piezometer installed based upon observations of retained soil samples. Make pipe joints secure and watertight. Withdraw the drill casing in small increments as the backfill materials are placed, so that collapse of the borehole does not occur. Do not rotate drill casing during withdrawal.

Place filter pack material slowly so that bridging does not occur in the boring and to prevent the instrument from being lifted as the casing is withdrawn. Use a measuring rod or similar device to measure the height of the filter pack to ensure that the filter pack is installed over the proper depth interval. Carefully raise and lower the measuring rod while the filter pack is installed, to prevent bridging and to tamp the filter pack in place.

Place a filter pack seal above the filter pack. Place the filter pack seal in a similar manner as for filter pack material. Place a bentonite seal above the filter pack seal.

Place the annular space seal by tremie grouting. Place the grout in such a manner as to not disturb the integrity of the filter pack and seal.

Grout for the annular space seal for observation wells shall consist of a bentonite to cement ratio of 0.15/1 by weight, with sufficient water to allow pumping. Mix bentonite and water first.

Provide the top of each casing with a cap in which an air vent hole 1/8 inch in diameter has been drilled. The cap shall be easy to remove.

Develop each installation a minimum of 24 hours after completion. Airlift water from the casing by injecting compressed air through a small tube inserted 3 to 5 feet above the top of the sensing tip. Take care not to inject air directly into the sensing tip. Continue development until the water becomes clear and, in the opinion of the engineer, the material soil filter has been developed. Perform a rising head sensitivity test.

C.10 Installing Inclinometer Casing

Install inclinometer casing (INC) at the locations as shown on the plans. Drill, sample and log borings in soil drilled for the purpose of installing inclinometer casing as specified in this article. Drill borings for

inclinometers using 6-inch minimum inside diameter casing and water or, where ground conditions permit, using drilling mud in a 6-inch minimum diameter borehole.

Install the inclinometer casing complete with end plug as shown on the plans. Carefully orient the casing grooves as instructed by the instrumentation specialist. Grout the inclinometer casing in place. Place grout by tremie method. If steel drill casing has been used to support the borehole, remove the drill casing in increments, and top off the grout level with each increment.

The grout shall consist of a cement to water ratio ranging from 2.5 to 1 for hard soil and 6.6 to 1 for soft soil by weight. The specific ratio to be used will be determined by the instrumentation specialist. The bentonite to cement ratio will be approximately 0.3 to 1 by weight, adjusted to produce grout with the consistency of heavy cream. Mix cement and water first. Add bentonite as necessary to achieve the specified consistency.

Provide the top of each inclinometer casing with a cap. The cap shall be easy to remove.

Perform a groove tracking test after the installation has been completed to ensure that the inclinometer casing has been properly installed. Lower the inclinometer sensor to the bottom of the casing in all four possible orientations, verifying that on raising to the top of the casing the inclinometer orientation is unchanged.

C.11 Installing Multi-Point Settlement Extensometers Casing

Drill, sample, and log borings of soil drilled for the purpose of installing extensometer casing. Borings for extensometer shall be drilled using at least a 6-inch inside diameter casing and water or, where ground conditions permit, using drilling mud in a 6-inch diameter borehole. This boring shall be used as a soil confirmation boring. Attach grout tubing to the multi-point settlement extensometer. Place the extensometer into the borehole. Grout the borehole from bottom to top.

C.12 Installing Surface Settlement Markers (SM)

Install surface settlement markers (SM) at the locations as shown on the plans. The method of installation shall be the contractor's option; however, the marker shall be rigidly affixed so as not to move relative to the surface to which it is attached.

C.13 Installing Structure Settlement Markers (SSM)

Install structure settlement markers (SSM) at the locations as shown on the plans. Permission to install markers will be obtained from the owner of the structure, by the department prior to installation. Extend the drill hole a minimum of 1 inch and a maximum of 2 inches into the structure. Extend the marker 1/2 inch from the face of the structure, or the minimum distance necessary to allow vertical positioning of an optical survey level rod. Install the marker so as not to damage the surface finish of the structure.

C.14 Vibrating Wire Piezometer Probe and Electronic Data Logger

Provide vibrating wire piezometer probe and electronic data logger unit as specified in section B.7. Install vibrating wire piezometer probe in piezometer casing according to the manufacturer's directions.

C.15 Inclinometer Probe and Electronic Data Logger

Provide inclinometer probe and electronic data logger units as specified in section B.10. Install inclinometer in inclinometer casing according to the manufacturer's directions.

C.16 Multi-Point Settlement Extensometers Probe and Electronic Data Logger

Provide multi-point settlement extensometer probe and electronic data logger units as specified in section B.13. Install multi-point settlement extensometers in casings according to the manufacturer's directions.

C.17 Schedule of Instruments Installed

Install instruments of the number and type, at the location and to the depths indicated on the plans.

C.18 Initial Readings

Record initial readings for each instrument before excavation in front of the soldier pile walls or MSE wall fill is made. The contractor shall notify the engineer when initial readings will be made, and the engineer may elect to participate or observe in taking initial readings.

The figures and tables on the website shall mark the baseline reading. All the initial readings and baseline values shall be performed according to the manufacturer's recommendations.

Record initial readings of settlement markers a minimum of 24 hours after completing each settlement marker installation. Obtain a minimum of two readings. The arithmetic average of the two initial recorded data readings will be recorded as the initial baseline reading.

C.19 Monitoring Instruments

Obtain and record data readings at regular intervals as specified herein. Submit any newly obtained recorded data to the engineer within 24 hours of obtaining new readings.

After initial readings, obtain and record subsequent regular data readings at each Retaining Wall structure on regular intervals based on the following criteria:

1. Prior to Retaining Wall excavation below the top of soldier piles:
 - Record a minimum of one reading per day per instrument.
2. During Retaining Wall exaction below the top of soldier piles:
 - Record one reading per instrument for every 4 feet of excavation depth or at least twice every day, whichever is the shorter interval.
3. After Retaining Wall excavation is completed prior to Retaining Wall backfill placement:
 - Record a minimum of one reading per instrument every day.
4. During Retaining Wall backfill placement:
 - Record a minimum of two readings per instrument for every 4 feet of backfill placement or at least every day, whichever is the more frequent.
5. After Retaining Wall structure is completely backfilled:
 - Obtain weekly readings from all settlement markers for a minimum of three months after Retaining Wall backfill placement is complete.

Unless otherwise specified, instrumentation shall not be abandoned or removed after project completion and should be left for future use by others. The vibrating wire piezometer, inclinometer, multiple position borehole extensometer, and 3-axis tiltmeter, along with the necessary data loggers, gateway(s) and any necessary data acquisition system, shall be purchased (not rented) to enable long-term monitoring after construction is completed (by others). The contractor should hand over these instruments and an active website, that contains the previous instrumentation measurements during construction, to the owner at the end of construction.

C.20 Abandonment of Instrumentation

At the completion of the job or as directed by the engineer, abandon or remove instrumentation that will not be used for long term monitoring. Grout the full depth of instrument casings and pipes by tremie method or by pressure injection from the ground surface. Grout shall consist of cement and water, with the minimum amount of water necessary to allow pumping. Remove guard casings and valve boxes, and patch holes with materials and to a durability consistent with the surrounding surface. Remove structure settlement markers and inclinometers and patch holes.

D. Measurement

D.1 Instrumentation and Monitoring

The department will measure Retaining Wall Instrumentation (Structure) as a complete single unit of work on an each basis.

E Payment

E.1 General

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4800	Retaining Wall Instrumentation (R-40-761)	EACH
SPV.0060.4810	Retaining Wall Instrumentation (R-40-767)	EACH

Payment is full compensation for providing submittals, furnishing materials, installation, testing, protection, maintenance, replacement or repair of damaged instruments or installations, obtaining data readings, website initiation and subscription fees, abandonment, and for all labor, tools, equipment and incidentals necessary to complete the work as specified herein.

173. Embedded Galvanic Anodes, Item SPV.0060.4900.

A Description

This special provision describes furnishing and installing embedded galvanic anodes in concrete.

B Materials

Furnish pre-manufactured galvanic anodes designed for cathodic protection when embedded in concrete and tied to steel reinforcing. The core of the anode shall consist of a minimum of 1.3 ounces of electrolytic zinc in compliance with ASTM B418 Type II, cast around a pair of steel tie wires and encased in a cementitious shell with a minimum pH of 14. The anodes shall have one side that is less than 1-1/2 inches in height.

Submit the product information to the engineer for approval. Supply a certification of compliance to the engineer a minimum of two weeks before starting work. Deliver, store, and handle all materials according to the manufacturer's instructions.

C Construction

C.1 Concrete Repair

Repair the concrete and prepare the exposed reinforcing steel conforming to standard spec 509.

C.2 Galvanic Anode Installation

C.2.1 Install embedded galvanic anodes conforming to the manufacturer's recommendations.

C.2.2 Attach galvanic anodes to existing reinforcement along the perimeter of the repair at spacing as specified on the plans. Space anodes no further than 24 inches apart.

C.2.3 Provide 3/4-inch clearance between anodes and substrate.

C.2.4 Secure the galvanic anodes as close as possible to the patch edge using the anode tie wires. Tighten the tie wires to allow no free movement.

If the anode is to be tied onto a single bar, or if less than 1-1/2 inch of concrete cover is expected, place anode beneath the uncoated bar and secure to reinforcing steel.

If 1-1/2 inch concrete cover will exist over the anode, the anode may be placed at the intersection between two bars and secured to each bar.

C.3 Electrical Continuity

Confirm electrical connection between anode tie wire and uncoated reinforcing steel with a multi-meter. The maximum DC resistance shall be 1 Ohm. Confirm electrical continuity of the exposed uncoated reinforcing steel within the repair area. Steel reinforcement shall be considered continuous when the DC resistance is 1 Ohm or less. If necessary, establish the electrical continuity with uncoated steel tie wire.

C.4 Inspection

Obtain Engineer's verification of proper installation of the galvanic anodes prior to placement of the concrete.

D Measurement

The department will measure Embedded Galvanic Anodes as each individual anode acceptably installed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.4900	Embedded Galvanic Anodes	EACH

Payment is full compensation for Embedded Galvanic Anodes is full compensation for furnishing and for properly installing anodes.

Concrete repair work, and concrete for that work, will be paid for separately.

**174. Installing Hydrant SPV.0060.5000;
Removing Hydrant/Major SPV.0060.5001;
Installing Hydrant - Alteration SPV.0060.5001;
Ductile Iron Hydrant Branch 6-Inch, Item SPV.0090.5002.**

A Description

This special provision describes removing existing hydrants, installing new hydrants and 6" diameter hydrant branch alterations.

A.1 General

Perform work under these items in accordance to the details as shown on the plans and the requirements of the City of Milwaukee Water Main Installation Specifications, dated January 2, 1987 (City Water Main Specifications). Additionally, perform all work in accordance to the City of Milwaukee - Milwaukee Water Works "Special Provisions for Water Main Construction". In case of conflicts between the City Water Main Specifications and the MWW Special Provisions or these special provisions, the requirements of the MWW Special Provisions and these special provisions shall govern.

The City of Milwaukee's installation specifications, special provisions for water main construction and material specifications can be found at the following website:

<https://city.milwaukee.gov/water/PermitsSpecs>

B Materials

B.1 General

Unless noted on the plan sheets, Contractor shall provide all water main materials for this special provision. Materials shall conform to the latest version of the City of Milwaukee's Material Specifications.

All materials will require inspection by the City.

Contact Mr. Ricardo Lopez, Inventory Services Manager, at (414)286-6123 (or Mr. Brian Kelly, Inventory Manager, at (414)286-0669) for City of Milwaukee supplied materials.

The Contractor shall allow four (4) working days notice prior to start of construction for material inspection and for scheduling construction inspection. Contractor shall contact watconst@milwaukee.gov for material inspection and construction inspection.

The Contractor shall provide a minimum two (2) working day notice to the Milwaukee Water Works Distribution when requesting a shut-off, wet connection, safe water sample, pressure testing, and chlorination. The Contractor shall coordinate via email watconst@milwaukee.gov.

The contractor shall return all abandoned hydrants to the DPW field headquarters - Infrastructure Operations Water Works. Contact the MWW distribution construction manager at 414-286-6305 or via email watconst@milwaukee.gov.

Milwaukee Water Works will test all pipe, in accordance to the City of Milwaukee Material Testing Specifications.

B.2 Valve Box Adapters

Install all valve boxes on gate valves with the use of valve box base adapters as detailed in the Milwaukee Water Works "Special Provisions for Water Main Construction". Install the adapter in addition to the hardwood blocking.

C Construction

All costs for completing the work required for valve installations on hydrant branches are to be included in the price for the Ductile Iron Hydrant Branch item.

Install fittings as shown on plans, incidental to respective ductile iron hydrant branch item. A list of fittings for each hydrant branch installation is provided on plans.

Unless shown otherwise, backfill all water main excavations with granular backfill as specified in the City of Milwaukee – Milwaukee Water Works "Special Provisions for Water Main Construction".

Consolidate all backfill by mechanical compaction per specification 2.6.14(B) of the Standard Specifications for Sewer and Water Construction in Wisconsin. Per specification, the initial compacted lift shall be two (2) feet, and the specification shall be modified to read, "each subsequent compacted lift of material shall be one (1) foot". Costs are to be included in the unit price bid for the water main. Settling the trench by flooding the backfill will not be allowed.

Installing Hydrant requires installing a new hydrant on an existing water main with a new connection to the main, new fittings (unless otherwise noted to reuse existing fittings), and new hydrant branch.

Installing Hydrant-Alteration requires installing a new hydrant by connecting new hydrant branch and new fittings (unless otherwise noted to reuse existing fittings) to the existing hydrant branch, but not making a new connection to the existing water main.

D Measurement

The department will measure Removing Hydrant/major as each individual hydrant acceptably removed, including all construction parameters and requirements as described in this special provision.

The department will measure Installing Hydrant as each individual hydrant acceptably installed, including all construction parameters and requirements as described in this special provision.

The department will measure Installing Hydrant – Alteration as each individual hydrant acceptably installed, including all construction parameters and requirements as described in this special provision.

The department will measure Ductile Iron Hydrant Branch 6-Inch by the linear foot of hydrant branch of the type and diameter specified acceptably completed, including all construction parameters and requirements as described in this special provision.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5000	Installing Hydrant	EACH
SPV.0060.5001	Removing Hydrant/Major	EACH
SPV.0060.5002	Installing Hydrant - Alterations	EACH
SPV.0090.5002	Ductile Iron Hydrant Branch 6-inch	LF

Payment is full compensation for providing all materials including all valves, fittings, and accessories required; for all excavating; for sheeting and shoring; for forming foundation; for laying pipe; for installing all valves and fittings; for concrete base, buttresses, and anchors; for strapping and rodding; for bulkheading and abandoning existing water mains; for sealing joints and making connections to new or existing facilities; for providing granular backfill material, including bedding material; for backfilling; for removing sheeting and shoring; for cleaning out the site of the work and incidentals necessary to complete the work.

175. Adjusting Water Valve Boxes, Item SPV.0060.5003.

A. Description

This special provision describes adjusting, protecting, and maintaining accessibility, for the duration of the paving project, to all City of Milwaukee water service boxes and water valve boxes located within the project limits.

B. Materials

All material for the adjustment of these facilities shall meet City of Milwaukee specifications and will be provided by the City of Milwaukee by contacting Andre Lee, Milwaukee Water Works, at (414)708-1321 (or Syreeta Woodley, Milwaukee Water Works at (414)286-6302). Milwaukee Water Works Distribution General Contact Number is (414) 286-3710.

If there is contractor damage, the materials must still be provided by the City of Milwaukee, however, in this case, the Contractor will be charged for all materials. Materials furnished by the City of Milwaukee and not used on the project shall be delivered back to DPW Field Headquarters – Infrastructure, Operations, Water Works at 3850 N. 35th St.

C. Construction

The Contractor, or authorized project representative, shall contact Milwaukee Water Works prior to the start of construction. The City will locate, mark, inspect and repair all water service boxes and water valve boxes within the limits of the project prior to commencement of work on the project.

All water service boxes and water valve boxes within the project limits shall be adjusted to proposed elevations by the Contractor using materials meeting city specifications.

Throughout the duration of the project, the Contractor must ensure that all water service boxes and water valve boxes are adequately located and identified by blue paint, and that at all times, all water appurtenances remain accessible for operation by city forces. Exercise caution working adjacent to water facilities to avoid damage and ensure accessibility.

Upon completion of the contract, the City will inspect all water facilities to ensure the water boxes are clean, properly aligned, and accessible. The Contractor shall be responsible to make identified repairs and adjustments, and if any repairs or adjustments are made by the City, the cost will be charged to the Contractor.

D. Measurement

The department will measure Adjusting Water Boxes as each individual unit acceptably completed.

E. Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5003	Adjusting Water Valve Boxes	EACH

Payment is full compensation for all excavation, backfilling, disposal of surplus materials, water box adjustments, water box clean-out, and restoration of the work site; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

176. Connect Original Service (C.O.S.), Item SPV.0060.5004.

A Description

This special provision describes reconnecting existing services to new water main.

A.1 General

Perform work under these items in accordance to the details as shown on the plans and the requirements of the City of Milwaukee Water Main Installation Specifications, dated January 2, 1987 (City Water Main Specifications). Additionally, perform all work in accordance with the City of Milwaukee - Milwaukee Water Works "Special Provisions for Water Main Construction". In case of conflicts between the City Water Main Specifications and the MWW Special Provisions or these special provisions, the requirements of the MWW Special Provisions and these special provisions shall govern.

The City of Milwaukee's installation specifications, special provisions for water main construction and material specifications can be found at the following website:

<https://city.milwaukee.gov/water/PermitsSpecs>.

A.2 Submittals

Address all required submittals to Milwaukee Water Works as follows:

Superintendent
Milwaukee Water Works
Zeidler Municipal Building
841 North Broadway, Room 409
Milwaukee, WI 53202

A.3 Sequence of Construction

Due to the nature of this work, including traffic staging and coordination with other work, the Contractor is advised there may be multiple mobilizations to complete the water main work. No additional payment will be made by the department for said mobilizations.

Determine sequence and schedule for water main construction, subject to the requirements herein.

Prepare and submit for review by the Superintendent of Milwaukee Water Works a detailed construction schedule stating the anticipated dates and duration of all interruptions in water service necessary to complete the work under the contract.

B Materials

B.1 General

Provide all materials required for this special provision including corporation stops, service saddles, adapters, piping and service insulators conforming to the latest version of the City of Milwaukee's Material Specifications.

The City of Milwaukee's installation specifications, special provisions for water main construction and material specifications can be found at the following website:

<https://city.milwaukee.gov/water/PermitsSpecs>.

All materials will require inspection by the City of Milwaukee.

Allow 4 working day notice prior to start of construction for material inspection and for scheduling construction inspection. Contact watengcon@milwaukee.gov for material inspection and construction inspection.

C Construction

When required and noted "C.O.S." on the plan(s), remove the service pipe from the old main and connect the service to the new main. Furnish and install the copper service piping and fittings required to extend the service from the existing to the new main and make all connections. Tap the new water main for the C.O.S.

The Milwaukee Water Works will shut off the water main to be altered and provide temporary hose connections to affected services as required.

Perform all surveying required to layout and locate the water services.

Unless shown otherwise, backfill all water main excavations with granular backfill as specified in Section 14 of the City of Milwaukee Standard Plan Notes Regarding Water Main Construction.

Consolidate all backfill by mechanical compaction per specification 2.6.14(B) of the Standard Specifications for Sewer and Water Construction in Wisconsin. Per specification, the initial compacted lift shall be 2 feet, and the specification shall be modified to read, "each subsequent compacted lift of material shall be 1 foot". Costs are to be included in the unit price bid for the water main. Settling the trench by flooding the backfill will not be allowed.

D Measurement

The department will measure Connect Original Service as each individual unit acceptably completed, including all construction parameters and requirements as described in this special provision.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5004	Connect Original Service (C.O.S.)	Each

Payment is full compensation for providing all labor, tools, equipment, materials and accessories required; for all surveying; for all excavating, for sheeting and shoring; for forming foundation; for sealing joints and making connections to new or existing facilities; for providing granular backfill material, including bedding material; for backfilling; for removing sheeting and shoring; and for cleaning out the site of the work.

177. Manholes Type TES 4-FT Diameter, Item SPV.0060.5200.

A Description

The work under this item consists of a 4'-0" round precast concrete manhole for the City of Milwaukee Underground Conduit Section at locations shown in the plans, in accordance to sections 301, 611 and 501 of the standard specifications, and as hereinafter provided.

B Materials

Furnish and install a 4' diameter precast concrete manhole. Concrete and steel reinforcement shall conform to ASTM specification: C478 (latest edition), except that the single cage circumferential

reinforcement in all vertical walls shall consist of lines of #6 steel wire spaced 3" horizontally and lines of #10 steel wire spaced 8" vertically located in the center of the wall.

Two lifting inserts for 1-1/2" diameter lifting eyes shall be cast in the wall of the base and all other riser sections except the top cap section.

Up to four 7/8" diameter galvanized steel 1-11/16" pulling-in eyes shall be cast in the wall of the base section directly across from each duct entrance.

Four 5/8" diameter plastic threaded cable rack bolt inserts shall be cast in the wall of the riser section.

Supply and lay a continuous Butyl Rubber gasket on the wall joint of the base and riser section when the manhole is being assembled at the job site.

The number of pulling-in eyes and/or cable rack bolt inserts may vary.

Additionally, the size, location, shape and number of duct entrances and/or knock-out area may vary. Unit price of manhole shall not vary for number of openings, pulling-in eyes and/or rack bolt inserts.

The City will supply a frame and lid for the manhole. Contractor shall contact Mr. Ricardo Lopez, Inventory Clerk at (414) 286-6123 prior to obtaining the frame and lid from the DPW Headquarters at 3850 N. 35th St. Contractor must have the "Casting Requisition Form" which shall be supplied by the City.

To obtain the "Casting Requisition Form" and/or for any questions on materials, contact Ms. Karen Rogney at (414) 286-3243.

C Construction

Manholes Type TES 4-FT Diameter shall be installed in accordance to subsection 611.3.

Install the top of the roof deck at a standard depth of 18" below finished grade where possible. A minimum depth of 12" from finished grade to the top of the roof deck must be maintained.

Install manhole cover to proposed grade using concrete rings and/or bricks. **Completely underpin entire flange area of manhole frame with mortar, bricks and/or concrete rings.** Remove wedges/shims. Fill voids with grout. Do not back plaster inside walls.

Notify Ms. Rogney three working days in advance of completion of each manhole, for inspection and acceptance of work performed. The contractor will receive no payment until the above work is approved by City Underground Conduit.

D Measurement

The department will measure Manholes Type TES 4-FT Diameter by each individual manhole acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5200	Manholes Type TES 4-FT Diameter	EACH

Payment is full compensation for all excavation work and disposal of material; for adjusting manhole frame to final grade; for picking up and installing covers; furnishing and installing all materials, including precast manhole, conduit, conduit fittings, end bells, bricks, and coarse aggregate, bedding and backfilling, concrete forms, concrete placement, appurtenances, and backfilling.

178. Manholes Type TES Doghouse 4-FT Diameter, Item SPV.0060.5201.

A Description

The work under this item consists of a 4'-0" round "doghouse" manhole for the City of Milwaukee Underground Conduit Section at locations shown in the plans, in accordance with sections 301, 611 and 501 of the standard specifications, and as hereinafter provided. This work includes providing and placing PVC pipe and associated fittings, cement encasement, and other appurtenances to extend existing conduit as required to provide a complete and fully functional communications manhole unit.

B Materials

B.1 Manhole

Furnish and install a 4' diameter precast concrete "doghouse" manhole. Concrete and steel reinforcement shall conform to ASTM specification: C478 (latest edition), except that the single cage circumferential reinforcement in all vertical walls shall consist of lines of #6 steel wire spaced 3" horizontally, lines of #10 steel wire spaced 8" vertically located in the center of the wall, and #6 rebar hoop centered in the wall 3" above the window knock-outs.

Two lifting inserts for 1-1/2" diameter lifting eyes shall be cast in the wall of the base and all other riser sections except the top cap section.

Up to four 7/8" diameter galvanized steel 1-11/16" pulling-in eyes shall be cast in the wall of the base section. Pulling-in eyes to be located across from all proposed duct entrances.

Four 5/8" diameter plastic threaded cable rack bolt inserts shall be cast in the wall of the riser section.

Supply and lay a continuous Butyl Rubber gasket on the wall joint of the base and riser section when the manhole is being assembled at the job site.

The number of pulling-in eyes and/or cable rack bolt inserts ordered may vary.

Size, location, shape, and number of duct entrances may vary. Unit price of manhole shall not vary for number of openings, pulling-in eyes or cable rack inserts.

Field verify window depth and locations prior to ordering manhole.

The City will supply a frame and lid for the manhole. Contractor shall contact Mr. Ricardo Lopez, Inventory Clerk at (414) 286-6123 prior to obtaining the frame and lid from the DPW Headquarters at 3850 N. 35th St. Contractor must have the "Casting Requisition Form" which shall be supplied by the City.

To obtain the "Casting Requisition Form" and/or for any questions on materials, contact Ms. Karen Rogney at (414) 286-3243.

B.2 Conduit

The contractor shall furnish DB-60 polyvinyl chloride (PVC) conduit.

PVC conduit and fittings shall conform to the requirements of Standard Specifications for Smooth-Wall Poly (Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation, ASTM Designation: F512 (latest edition).

B.3 Concrete.

The type of concrete to be used to encase the ducts will be:

Type I Cement	280 lbs
Fly Ash	100 lbs
Sharp Torpedo Sand	3100 lbs
Water	35 gals
Chryso Air 260 or approved equal	2.0 ozs
Chryso Plast 209 or approved equal	7.0 ozs
Air	5%

Mix the materials to provide an approximate 3 inch slump.

B.4 Slurry Backfill.

The type of concrete to be used to encase the ducts will be:

Aggregate slurry backfill consists of No. 1 concrete aggregate Class 'C' concrete mix with the cement deleted.

Fly Ash (Class C)	75 lbs.
Concrete Sand (Damp)	1830 lbs.
No. 1 Concrete Aggregate	1830 lbs.

The material shall be mixed with water to inundate the aggregate sufficiently to provide an approximate 3 inch slump. The mix shall be deposited in the trench directly from a concrete transit mix truck.

For any questions on materials, contact Ms. Karen Rogney at (414) 286-3243.

C Construction

Notify Ms. Rogney three working days in advance of completion of each manhole, for inspection and

acceptance of work performed. The contractor will receive no payment until the above work is approved by City Underground Conduit.

C1. Manhole

Manholes Type TES Doghouse 4-FT Diameter shall be installed in accordance with subsection 611.3. The manhole is to be installed within the excavation limits of the manhole that had been removed. The bottom section of the manhole shall be installed while avoiding damage to the live active cables. The excavation may need to be widened to slide the bottom under the existing cables. After the bottom section of the manhole has been set, the existing cables need to be placed with the window openings, splice cases and/or coils placed back into the manhole.

Extreme care must be exercised in the handling of working cables within the excavation. When cables need to be moved, particularly lead sheathed cables, move cables slowly and gradually. Avoid sharp kinks that may damage the inner core of the cables and the sheath.

The contractor shall complete the "doghouse" manhole installation without any damage or service disruption to the existing cables.

Install the top of the roof deck at a standard depth of 18" below finished grade where possible. A minimum depth of 12" from finished grade to the top of the roof deck must be maintained.

Install manhole cover to proposed grade using concrete rings and/or bricks. **Completely underpin entire flange area of manhole frame with mortar, bricks and/or concrete rings.** Remove wedges/shims. Fill voids with grout. Do not back plaster inside walls.

C.2 Placing Duct

All ducts shall be inspected before placing to see that the bores are clean and free from mud, sand, etc. Only ducts with a smooth bore, free from burrs, rough projections etc. shall be used. Where burrs or other rough areas likely to damage cable are found in the duct, they shall be smoothed off by rasping or scraping.

All existing ducts shall be extended up to 5 feet out of the new manhole structure unless otherwise noted on the plan. Split PVC duct should be used on ducts containing cables. The split duct shall be installed per manufacturers recommendations using tape and reinforced with plastic straps to produce a rigid, stable unit.

All ducts shall terminate on the inside wall of the manhole. A standard end bell fitting shall be installed on all duct access points into the manhole.

Where trace wires are present, reconnect and extend trace with #10 copper wire extended two feet past the inside wall of the manhole.

C.3 Concreting

Begin concreting after the conduit has been laid and the trench and duct have been inspected. The minimum concrete encasement of the ducts shall be three (3) inches on the top, two (2) inches on the sides, and three (3) inches on the bottom (as shown on the detail). After placing, the concrete shall be puddled with a splicing bar or similar tool so that complete duct encasement is accomplished. Wood braces used to keep the conduit from floating shall be removed before the concrete sets completely and the resultant encasement voids filled with concrete.

Allow the concrete encasement to set for a minimum of 6 hours before backfilling is commenced.

C.3 Slurry Backfill

The backfilling of the conduit shall commence immediately after the duct has been inspected, approved and has had sufficient time to set to withstand the load.

An aggregate slurry as specified shall be used to backfill all concrete encased conduit. The trench shall be slurry backfilled to the proposed or existing subgrade. The mix shall be deposited in the trench directly from a concrete transit mix truck.

D Measurement

The department will measure Manholes Type TES Doghouse 4-FT Diameter by each individual manhole acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5201	Manholes Type TES Doghouse 4-FT Diameter	EACH

Payment is full compensation for all excavation work and disposal of material; for adjusting manhole frame to final grade; for picking up and installing covers; furnishing and installing all materials, including precast structure, bricks, conduit extensions up to 5 feet, conduit bodies, conduit fittings, trace wire, coarse aggregate, bedding, encasement, and backfilling including any concrete, stone, aggregate slurry, bracing, concrete forms, concrete placement, appurtenances, and backfilling.

179. Manholes Type TES 5-FT Diameter, Item SPV.0060.5202.

A Description

The work under this item consists of a 5'-0" round precast concrete manhole for the City of Milwaukee Underground Conduit Section at locations shown in the plans, in accordance to sections 301, 611 and 501 of the standard specifications, and as hereinafter provided.

B Materials

Furnish and install a 5' diameter precast concrete manhole. Concrete and steel reinforcement shall conform to ASTM specification: C478 (latest edition), except that the two cages of circumferential reinforcement in all vertical walls shall consist of lines of #6 steel wire spaced 3" horizontally and lines of #10 steel wire spaced 8" vertically located in the center of the wall.

Two lifting inserts for 1-1/2" diameter lifting eyes shall be cast in the wall of the base and all other riser sections except the top cap section.

Up to four 7/8" diameter galvanized steel 1-11/16" pulling-in eyes shall be cast in the wall of the base section directly across from each duct entrance.

Four 5/8" diameter plastic threaded cable rack bolt inserts shall be cast in the wall of the riser section.

Supply and lay a continuous Butyl Rubber gasket on the wall joint of the base and riser section when the manhole is being assembled at the job site.

The number of pulling-in eyes and/or cable rack bolt inserts may vary.

Additionally, the size, location, shape and number of duct entrances and/or knock-out area may vary. Unit price of manhole shall not vary for number of openings, pulling-in eyes and/or rack bolt inserts.

The City will supply a frame and lid for the manhole. Contractor shall contact Mr. Ricardo Lopez, Inventory Clerk at (414) 286-6123 prior to obtaining the frame and lid from the DPW Headquarters at 3850 N. 35th St. Contractor must have the "Casting Requisition Form" which shall be supplied by the City.

To obtain the "Casting Requisition Form" and/or for any questions on materials, contact Ms. Karen Rogney at (414) 286-3243.

C Construction

Manholes Type TES 5-FT Diameter shall be installed in accordance to subsection 611.3.

Install the top of the roof deck at a standard depth of 18" below finished grade where possible. A minimum depth of 12" from finished grade to the top of the rood deck must be maintained.

Install manhole cover to proposed grade using concrete rings and/or bricks. **Completely underpin entire flange area of manhole frame with mortar, bricks and/or concrete rings.** Remove wedges/shims. Fill voids with grout. Do not back plaster inside walls.

Notify Ms. Rogney three working days in advance of completion of each manhole, for inspection and acceptance of work performed. The contractor will receive no payment until the above work is approved by City Underground Conduit.

D Measurement

The department will measure Manholes Type TES 5-FT Diameter by each individual manhole acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5202	Manholes Type TES 5-FT Diameter	EACH

Payment is full compensation for all excavation work and disposal of material; for adjusting manhole frame to final grade; for picking up and installing covers; furnishing and installing all materials, including precast manhole, conduit, conduit fittings, end bells, bricks, and coarse aggregate, bedding and backfilling, concrete forms, concrete placement, appurtenances, and backfilling.

180. Removing CUC Manhole, Item SPV.0060.5204.

A Description

This special provision describes removing various manholes for the City of Milwaukee Underground Conduit department at locations shown in the plans, according to standard spec 204. Removal means removal of the existing structure and any necessary conduit alterations required.

B Vacant

C Construction

C.1 General Requirements

Complete all operations necessary to remove the existing structure and that might endanger the new construction before constructing new work.

Manholes designated for removal and subsequent reconstruction will ordinarily contain working cables which must be maintained during the course of this phase of work. Protective measures against damage must be observed when handling and working around these cables.

C.2 Frame and Cover Removal

Remove the frame and cover on all manholes designated for removal. If the castings are to be salvaged as directed in the plans, exercise caution with frames embedded in concrete so unnecessary damage to the frame does not occur during the process of breaking concrete. Remove all mortar and concrete from the frame. Store salvaged castings at location approved of by the engineer.

C.3 Protection of Cables

Extreme care must be exercised in the handling of working cables in manholes or exposed conduit package areas while removal work is going on. Cables may carry high voltage that may be life threatening.

No cable removed from its racks and spanning the manhole opening is to be permitted to sag appreciably from its own weight across such opening. Provide temporary supports for all cables. When cables need to be moved, particularly lead sheathed cables, move cables slowly and bend gradually. Avoid sharp kinks that may damage inner core of cables and the sheath. Cables must be left as stationary as is practicable after the cables have been temporarily located. Exercise care if further shifting is required while construction work progresses and if needed, re-support. Guard against damage to the exposed cables by falling objects such as tools, equipment and debris. Avoid stepping on cables. Do not use cables to support any objects during the course of the construction work.

Promptly notify Mr. Brian Pawlak at (414) 286-5970 work / (414) 708-2118 cell, of any visible cable defects discovered at the time the cable is exposed. Report any signs of abrasion, sheath rupture, kinking in the cable or evidence of sheath cracks.

The contractor will be held liable for all damage due to carelessness and to neglect and is responsible for protecting and safeguarding cables. All damage will be repaired at the contractor's expense.

C.4 Removing Existing Structure

After removal of the castings and protecting and supporting the cables, carefully remove the manhole roof, walls, floor and all hardware. No portion of the existing structure is to remain. The increase in the size of the excavation will be determined by the size of the manhole to be reconstructed as indicated in

the detail plans. Remove all waste material accumulated by the removal of the existing structure from the work site. No part of this waste material can be used as backfill material.

C.5 Conduit Alterations

Break back by hand sections of cement encased conduit to facilitate excavation for the new proposed structure. Hand chip concrete away for the existing pipes. Carefully remove pipes from around the cables.

Hand chip enough concrete away from the pipes to allow for the coupling of split ducts on to the ends of the pipes. Protect exposed pipe ends and existing cables from damage.

D Measurement

The department will measure Removing CUC Manhole by each unit acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5204	Removing CUC Manhole	EACH

Payment is full compensation for breaking down and removing structure; conduit alterations; for proving cable protection; and for hauling and disposing of materials.

181. Install Cement Encased Conduit Into Existing Manhole, Item SPV.0060.5210

A Description

This special provision describes installing proposed cement encased conduits into an existing manhole.

B Materials

Use DB-60 PVC conduits and concrete, as provided and paid for under other items in this contract. Furnish backfill material, topsoil, fertilizer, seed, and mulch conforming to the standard spec.

C Construction

Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole, or holes, for entering conduits at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the respective drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

Notify Ms. Karen Rogney at (414) 286-6123 three working days in advance of completion of each manhole, for inspection and acceptance of work performed. The contractor will receive no payment until the above work is approved by City Underground Conduit.

D Measurement

The department will measure Install Cement Encased Conduit Into Manhole by the unit, acceptably installed. Up to five conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of five, or conduits entering at significantly different entry points into the existing manhole will constitute multiple units of payment.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.5210	Install Cement Encased Conduit Into Existing Manhole	EACH

Payment is full compensation for excavating, drilling holes; furnishing and installing all materials, including bricks, coarse aggregate, sand, bedding, and backfill; for excavating and backfilling; and for furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; and for making inspections.

182. Adjusting TES Manhole, Item SPV.0060.5212.

A Description

This special provision describes adjusting the existing chimney of the block, precast, or brick round manholes; furnishing, installing and removing protection of the cables in the manhole during adjustment operations. Perform work in accordance to the standard specifications, the provisions of the article Adjusting Manhole Covers, as shown on the plans, and as hereinafter specified.

B Material

Furnish and install materials that conform to the requirements of section 519 of the standard specifications. Salvage and reinstall existing covers on the manholes. The city will supply covers designated for replacement. Contractor shall contact Ricardo Lopez, Inventory Clerk at (414) 286-6123 prior to obtaining the frames and lids from the DPW Field Headquarters at 3850 N. 35th St. Contractor must have the "Castings Requisitions Form" which shall be supplied by the City.

To obtain the "Casting Requisition Form" and/or for any questions on materials, contact Ms. Karen Rogney at (414) 286-3243.

C Construction

Report any pre-existing problems to Ms. Karen Rogney of City Underground Conduits Section at (414) 286-3243 3 working days in advance of any construction on manholes.

Before removing the pavement around the manhole, the contractor shall place a ¾-inch plywood cover or equal over existing active Street Lighting, Traffic Control, Communication or private vendor electrical cables. This cover shall be properly supported to/at the manhole floor.

Break out and remove pavement around manhole. Remove existing covers and store and secure them properly. Any damaged, lost, or stolen covers shall be the responsibility of the contractor and shall be replaced at contractor's expense.

Remove existing chimney to surface of concrete roof slab. If manhole does not have an existing concrete roof slab, remove sufficient chimney as to provide adequate corbel to fit new cast iron frame and cover.

Adjust manhole cover to proposed grade using bricks or concrete rings as necessary. Remove wedges/shims. Fill voids with grout. Do not back plaster inside walls.

After completion of paving, remove the temporary ¾-inch plywood cover or equal which is over the existing electrical cables in the manhole as mentioned above.

Notify Ms. Rogney 3 working days in advance of completion of each manhole adjustment, for inspection and acceptance of work performed. The contractor will receive no payment until the above work is approved by City Underground Conduits.

D Measurement

The department will measure Adjusting TES Manhole by the 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.0060.5212	Adjusting TES Manhole	EACH

Payment is full compensation for furnishing all required materials, exclusive of frames, grates, or lids available and designated for adjusting; for removing, reinstalling and adjusting the covers, complete in accordance to the requirements of the plans and contract. Covers to be adjusted and which are rendered unfit for use by the contractor through the contractor's operations will be replaced by the contractor in kind at the contractor's own cost and expense.

183. Reconnect Storm Sewer, Item SPV.0060.8003.

A Description

This special provision describes connecting proposed storm sewer pipe/structures to existing storm sewer pipe/structures or to proposed pipe/structures in sub-sequent stages.

B Materials

Furnish concrete for concrete collar conforming to standard spec 520.2.4.
Furnish storm sewer pipe in accordance to Section 608.2

C Construction

Remove existing concrete collars, pipe seals or end walls constructed under previous projects or in earlier stages of this project as necessary to reconnect storm sewer. Ensure that positive drainage is achieved when connecting proposed pipe to existing structures or storm sewer. Salvage any structurally sound pipe that requires removal if prior approval is granted by the engineer. Make all necessary connections using the appropriate coupling, concrete collar, or by means approved by the engineer.

D Measurement

The department will measure Reconnect Storm Sewer as each location as specified in the plans, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.8003	Reconnect Storm Sewer	EACH

Payment is full compensation for performing all work; removing seals, end walls and concrete collars; providing all materials; coring or sawing; and couplings, concrete collars. Any additional pipe or materials required to reconnect the storm sewer shall be considered incidental to this bid item.

184. Sealing Storm Structure, Item SPV.0060.8005.**A Description**

This special provision describes constructing a wall to fill and seal the void created in an existing storm sewer structure from removing an existing storm sewer pipe. The wall can be constructed of concrete, brick masonry, concrete brick, or block masonry.

B Materials

Furnish concrete conforming to standard spec 501. Furnish brick masonry, concrete brick, block masonry, or mortar conforming to standard spec 519.

C Construction

Construct concrete as specified in standard spec 501. Construct brick masonry, concrete brick, or block masonry as specified in standard spec 519.

Place concrete to conform to the inside diameter of the existing storm sewer structure in a manner that fills and seals to make watertight the void created from the removed pipe.

D Measurement

The department will measure Sealing Storm Structure as each individual sealed storm structure 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.0060.8005	Sealing Storm Structure	EACH

Payment is full compensation for providing all materials, including concrete; for furnishing, placing, finishing, protecting, and curing concrete blocks; for sawing as necessary; and for disposing of surplus material, and all incidentals necessary to complete the work.

185. Cover Plates Left In Place, Item SPV.0060.8007.

A Description

This special provision describes providing a steel plate to cover and support construction, backfill material, and traffic loading at storm sewer structures as the plans show, conforming to the appropriate provisions of standard spec 611, and as modified in this special provision.

Cover plates left in place becomes the property of the department after final acceptance by the engineer.

B Materials

Provide a 0.75-inch minimum thickness steel plate that extends to the outside edge of the existing masonry walls. Backfill with base aggregate dense 1 1/4 inch.

Provide 1/4 inch diameter steel bolts and epoxy to secure the cover plate to the top deck of the existing structure.

C Construction

Remove the existing grate, frame, and accompanying grade adjusting rings. Remove 2' minimum concrete block. Remove all loose debris and other accumulated material found on the structure deck which would otherwise interfere with cover plate installation. Drill a single 3/8-inch hole centered in each corner of the cover plate. Set the cover plate on the existing structure deck, ensuring the access hole is covered and that the cover plate extends to the edges of the existing masonry. Place cover plate over portion of storm sewer structure which is below the proposed flow line elevation. Do not extend covers above the proposed flow line to prevent flow bypass of the inlet.

Embed and epoxy each 1/4-inch steel bolt a minimum of 2-inches into the structure deck through each drilled hole. Backfill to the subgrade elevation construction voids above the cover plate with base aggregate dense 1-1/4 inch.

Place cover plates as the plans show.

D Measurement

The department will measure Cover Plates Left In Place as each individual cover plate left in place acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.8007	Cover Plates Left In Place	EACH

Payment is full compensation for providing the cover plate and leaving cover plates in place; providing drilled epoxy bars; base aggregate dense 1 1/4 inch backfill; removing inlet frame and lid; removing 2 foot minimum concrete block; and for excavation.

sef-611-005 (20180104)

186. Manhole Cover Type MS 58A, Item SPV.0060.8009.

A Description

This special provision describes providing Manhole Cover Type MS 58A in accordance with the requirements of Section 611 of the Standard Specifications and the details as shown on the plans.

B Materials

Furnish materials under these items in accordance with the requirements of Section 611 of the Standard Specifications and the details as shown on the plans.

C Vacant

D Measurement

The department will measure Manhole Cover Type MS 58A by the EACH acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.8009	Manhole Cover Type MS 58A	EACH

Payment is full compensation for removing and salvaging the existing covers; providing new covers, including frames, lids, and for furnishing all incidentals necessary for installing and adjusting each cover. Old covers removed shall be disposed of by the contractor.

187. Inlet Cover Type MS 57, Item SPV.0060.8010.

A Description

Perform work under these items in accordance with the requirements of Section 611 of the Standard Specifications and the details as shown on the plans.

B Materials

Furnish materials under these items in accordance with the requirements of Section 611 of the Standard Specifications and the details as shown on the plans.

C Vacant

D Measurement

The department will measure Inlet Cover, Type MS 57 by the unit in place, furnished, installed, and acceptably completed.

E Payment

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.8010	Inlet Cover Type MS 57	EACH

Payment is full compensation for providing new covers, including frames, grates or lids, and other materials and for installing and adjusting each cover.

188. Cover Plates Left In Place In Pavement, Item SPV.0060.8100.

A Description

This special provision describes providing a steel plate to cover and support construction, backfill material, and traffic loading at storm sewer structures as the plans show, conforming to the appropriate provisions of standard spec 611, and as modified in this special provision.

Cover plates left in place becomes the property of the department after final acceptance by the engineer.

B Materials

B.1 Cover Plate

Provide a 0.75-inch minimum thickness steel plate that extends to the outside edge of the existing masonry walls. Backfill with base aggregate dense 1 1/4 inch.

B.2 Drilled Epoxy Bars

Provide 1/4 inch diameter steel bolts and epoxy to secure the cover plate to the top deck of the existing structure.

B.3 Base Aggregate

Use Base Aggregate Dense 1 1/4-Inch conforming to standard spec 305.

C Construction

Saw cut and remove existing pavement to a minimum of 3' beyond the outside edge of the drainage structure in all directions, or to the limits of drainage structure excavation. Remove the existing grate, frame, and accompanying grade adjusting rings. Remove 2' minimum concrete block (or to an elevation 1' below the roadway datum elevation, whichever is greater.). Remove all loose debris and other accumulated material found on the structure deck which would otherwise interfere with cover plate installation. Drill a single 3/8-inch

hole centered in each corner of the cover plate. Set the cover plate on the existing structure deck, ensuring the access hole is covered and that the cover plate extends to the edges of the existing masonry. Place cover plate over portion of storm sewer structure which is below the proposed flow line elevation. Do not extend covers above the proposed flow line to prevent flow bypass of the inlet.

Embed and epoxy each 1/4-inch steel bolt a minimum of 2-inches into the structure deck through each drilled hole. Backfill to the subgrade elevation construction voids above the cover plate with base aggregate dense 1-1/4 inch.

Place cover plates as the plans show.

Construct base aggregate dense 1 1/4 inch backfill. Construct base patching concrete SHES in accordance with standard specification 390. Install asphaltic surface temporary matching adjacent existing pavement surface elevation to create a smooth driving surface. At locations coincident with full depth pavement replacement, base patching concrete SHES and asphaltic surface temporary may be omitted provided location will not be open to live traffic prior to full depth pavement construction.

D Measurement

The department will measure Cover Plates Left In Place In Pavement as each individual cover plate left in place acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.8100	Cover Plates Left In Place In Pavement	EACH

Payment is full compensation for providing the cover plate and leaving cover plates in place; providing drilled epoxy bars; base aggregate dense 1 1/4-inch backfill; removing inlet frame and lid; removing 2 foot minimum concrete block; and for excavation.

The department will pay separately for the base patching concrete SHES, drilled dowel bars, drilled tie bars, tack coat, and asphaltic surface temporary under other bid items in this contract.

189. Pavement Cleanup Project 1060-27-74, Item SPV.0075.0203.

A Description

This special provision describes cleanup of dust and debris from pavements within and adjacent to the job site. Pavement Cleanup includes surveillance and reporting of all active haul routes.

B Materials

B.1 Pavement Cleanup

Furnish a vacuum-type street sweeper equipped with a power broom, water spray system, and a vacuum collection system.

Use vacuum equipment with a self-contained particulate collector capable of preventing discharge from the collection bin into the atmosphere.

Use a vacuum-type sweeper as the primary sweeper, except as specified in this special provision or approved by the engineer.

C Construction

C.1 Surveillance

Provide daily surveillance of active haul routes to identify if material is being tracked from the jobsite. Document the condition of the roads and all sweeping recommendations in a daily report. Submit reports to the engineer daily, including hourly metered tickets for that day's sweeping activities.

C.2 Pavement Cleanup

Keep all pavements, sidewalks, driveways, curb lanes and gutters within the project boundaries, free of dust and debris generated from all activity under the contract. Keep all pavements, sidewalks, driveways, curb lanes, and gutters adjacent to the project free of dust and debris that are caused by land disturbing, dust generating activities, as defined in the contractor's Dust Control Implementation Plan (DCIP).

Provide routine sweeping of all pavements, sidewalks, driveways, curb lanes and gutters on local-street active haul routes as defined in the DCIP or as directed by the engineer. Include the following roadways for routine sweeping:

- o W. St. Paul Avenue (N. 29th Street to W. Greves Street)
- o N. 27th Street (W. St. Paul Avenue to W. Clybourn Street)
- o N. 28th Street (W. St Paul Avenue to W. Clybourn Street)
- o W. Greves Street (N. 27th Street to W. St. Paul Avenue)
- o And all other roadways approved by the department

In addition to routine sweeping, conduct sweepings as the engineer directs or approves, to eliminate dust problems that might arise during off-work hours or emergencies. Provide the engineer with a contact person available at all times to respond to requests for emergency sweeping. Coordinate with engineer to determine deadlines for responding to emergency sweeping requests and cleaning up spillage and material tracked to/from the project.

Skid steers with mechanical power brooms may only be used on sidewalks and driveways whose pavements will not support the weight of a street sweeper, unless otherwise approved by the engineer. Do not dry sweep. Ensure all broomed equipment used for sweeping has a functioning water bar.

D Measurement

The department will measure Pavement Cleanup (Project 1060-27-74) by the hour, acceptably completed.

Tickets shall include:

- Date
- Company
- Operator name
- Equipment make/model
- Routes swept
- Total hours.

Total hours shall be to the nearest 0.25 hour that work under this item was performed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0075.0203	Pavement Cleanup Project 1060-27-74	HR

Payment is full compensation for daily surveillance; preparing and submitting the daily surveillance report with hourly metered tickets; mobilization; sweeping; and disposing of materials.

sef-104-006 (20170323)

190. Obstructions, Drilled Foundation Shaft, Item SPV.0075.4000; Obstructions, Foundation Drilling, Item SPV.0075.4010.

A Description

A.1 General

The work included herein consists of removing, drilling, or coring through unknown, and unidentified, man-made subsurface obstructions when encountered for construction of drilled foundation shafts, foundation drilling for soldier pile retaining walls or drilling for concrete masonry sign supports.

A.2 Definitions

Surface obstructions are defined as any objects, man-made or naturally deposited, encountered within 6 feet of the ground surface. Subsurface obstructions are defined as man-made obstructions that are encountered by the drilling equipment at a depth greater than 6 feet below the ground surface.

Obstructions include only man-made materials, such as old concrete foundations or abandoned utilities. Known obstructions are man-made obstructions that are shown or identified in the plans. Unknown obstructions are man-made obstructions that are not shown or identified in the plans. Naturally occurring

deposits such as rock, boulders, cobbles, nested cobbles and nested boulders, are not considered obstructions and therefore are not applicable to the provision of this pay item.

B (Vacant)

C Construction

Remove surface and subsurface obstructions at drilled shaft locations. For drilled foundation shafts and foundation drilling, use special tools and/or procedures when the contractor cannot advance the hole more than 12 inches in 60 minutes using conventional rock augers fitted with teeth, drilling buckets, or under reaming tools operating at maximum power, torque, and down thrust. For drilling associated with the construction of sign supports, use special tools and/or procedures when the contractor cannot advance the hole more than 12 inches in 60 minutes using conventional earth augers operating at maximum power, torque, and down thrust. Special procedures and/or tools may be required but are not limited to chisels, breakers, core barrels, air hammer tools, and hand excavation. Other methods for obstruction removal can be employed to aid in the removal if acceptable to the engineer. Blasting is not permitted.

When an unknown subsurface obstruction is encountered, notify the engineer prior to beginning any work to remove the obstruction.

D Measurement

The department will measure Obstructions (Type) by the hour for each hour the contractor actively spends removing or coring through unknown man-made subsurface obstructions. A quantity of one hour will be paid upon the determination that a subsurface obstruction is encountered based on lack of hole advancement with conventional tools as set forth in this specification. Upon removal of the unknown man-made subsurface obstruction, portions of the final hour measured will be rounded up to the next whole hour. Down time spent planning for subsurface obstruction removal or delays caused by the mobilization of special equipment and tools not readily available at the site will not be measured for payment.

Measurement Example		Paid Obstruction Hours
1	Drilling encounters possible obstruction. Contractor notifies engineer. Start clock.	0.00
2	Conventional drilling equipment does not advance 12 inches after attempting to do so for at least 60 minutes.	1.00
3	Contractor resumes work clearing obstruction the following day. Assume the obstruction is cleared in aggregate total of 1 hour and 15 minutes of time. Obstruction is identified to be a previously unknown and unidentified man-made obstruction.	2.00

Only unknown (not identified in the plans), man-made subsurface obstructions, will be measured for payment. Work to clear and remove surface obstructions, known obstructions identified on the plans, and any natural deposits (rock, boulders, cobbles, nested cobbles and nested boulders) will not be measured separately for payment and shall be included in the applicable items for Drilled Shaft Foundation, Foundation Drilling, or Sign Supports Concrete Masonry.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0075.4000	Obstructions Drilled Foundation Shaft	HRS
SPV.0075.4010	Obstructions Foundation Drilling	HRS

Payment is full compensation for removal and disposal of unknown, man-made subsurface obstructions; and for furnishing all materials, labor, equipment, additional concrete, and incidentals necessary to complete the work.

191. **Structural Steel HS Soldier Piles Delivered, Item SPV.0085.4000; Structural Steel HS Soldier Piles Installed, Item SPV.0085.4010.**

A Description

This special provision describes fabricating, furnishing, casting, machining or preparing otherwise, delivering, and erecting the steel and miscellaneous metals required for steel soldier piles in accordance with Section 506 of the standard specifications, as shown in the plans, and as hereinafter provided.

B (Vacant)

C Construction

C1. Primary Members

Add "- Tieback Anchor Assemblies" to standard Spec 506.3.1.1. Tieback Anchor Assembly includes but is not limited to the Cover Plates and Extra Strong Steel Pipe.

C.2. Installing and Cutting Off

C.2.1 General

Provide Soldier Piles in lengths as the plans show. The Soldier Piles lengths are based upon the maximum footing length required if bedrock is not encountered during foundation drilling.

C.2.1 Cut-Offs

When bedrock is encountered, foundation drilling may stop at a higher elevation, meeting or exceeding the rock socket depths, as shown in the plans. Cut-off the bottom of the soldier piles to the higher bottom of footing elevations or as the engineer directs. Soldier pile cut-offs become the contractor's property. Dispose of cut-offs not incorporated into the work.

D Measurement

The department will measure Structural Steel HS Soldier Piles Delivered by the pound acceptably completed based on plan quantities the department-approved retaining walls show.

The department will measure Structural Steel HS Soldier Piles Installed by the pound acceptably completed. The department will measure the Cut-Off length of the soldier pile and subtract it from the delivered length to determine the quantity installed.

The department will use the following unit weights to compute the weights of metals:

MATERIAL	UNIT WEIGHT
Steel: structural carbon, high-strength, castings, or forgings.....	490 lb/ft ³

Compute the weights of rolled shapes based on their nominal weights and dimensions. Compute the weights of plates based on their nominal dimensions and make full deduction for cuts except interior cuts, bevel cuts on edges for butt welding, and cuts made by machining to provide other than plane surfaces.

The department will not include the weight of paint, galvanization, or weld metal in the computed weight.

The department will include the weight of heads, nuts, single washers, an threaded stick-through of high-strength bolts and heads, based on the following weights:

BOLT DIAMETER	WEIGHT PER 100 BOLTS
¾-inch.....	52.4 pounds

If the computed weights of metals, from engineer-approved shop drawings, varies more than one percent from those the engineer-approved retaining wall plans show, the department will base quantities on those computed from the engineer-approved shop drawings.

E Payment

The department will pay for the measured quantity at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0085.4000	Structural Steel HS Soldier Piles Delivered	LB
SPV.0085.4010	Structural Steel HS Soldier Piles Installed	LB

Payment for Structural Steel HS (Special) Soldier Piles Delivered is full compensation for providing, fabricating, casting, machining of otherwise preparing, and transporting.

Payment for Structural Steel HS Soldier Piles Installed is full compensation for cutting off and erecting materials.

192. Pipe Underdrain 6-Inch Special, Item SPV.0090.0260.

A Description

This special provision describes providing necessary subsurface drainage by constructing trenches, placing the required geotextile fabric, installing the designated pipes or drainage devices, connecting the underdrain to receiving structures, providing cored connection holes, back-plastering and or mortaring connections to storm sewer structures (both on the external and internal sides of the receiving structure), providing and installing PVC or HDPE fittings, and caps or plugs ,for excavating, plowing, backfilling the trenches with the specified backfill material in accordance to standard spec 310, 612 and 645, salvaging; disposing of surplus material; and restoring the work site as shown on the plans and details, and as hereinafter provided.

B Materials

B.1 Pipe Underdrain

Utilize Pipe Underdrain conforming to standard spec 612.

B.2. Mortar

Utilize mortar conforming to standard spec 519.

B.3 Base Aggregate

Use only base aggregate open graded conforming to standard spec 310.2.

B.4 Geotextile Fabric

Utilize geotextile fabric consisting of Type DF Schedule A and conforming to standard spec 645.2.4. Completely wrap the installation trench with geotextile fabric.

C (Vacant)

D Measurement

The department will measure Pipe Underdrain (Size) Special by the linear foot, acceptably completed. The department will measure along the centerline of the pipe, center to center of junctions and fittings.

E Payment

The department will pay for the measured quantity at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0260	Pipe Underdrain 6-Inch Special	LF

Payment is full compensation for providing, handling, and placing all materials, including pipe, base aggregate open graded, geotextile fabric Type DF Schedule A, providing cored connections, making all necessary connections to the receiving structures, performing back-plastering and or mortaring of underdrain connections to storm sewer structures, providing and installing all fittings, and caps or plugs; for furnishing all excavating, plowing, and re-compacting, salvaging; disposing of surplus material; and restoring the work site

193. Removing Modular Block Retaining Wall, Item SPV.0090.0263.

A Description

This special provision describes Removing Modular Block Retaining Wall according to the appropriate provisions of standard spec 204, details shown in the plans, and as provided in this special provision.

B (Vacant)

C Construction

Remove all blocks, plastic sheeting, fabric, pipe under drain, reinforcing grid, or tiebacks that abut or underlie the portion of the existing modular block retaining wall to be removed in a manner that will not impede the structural stability or functionality of the portion of the wall to remain. Modify the blocks at the new modular block retaining wall end as directed by the engineer for an adjacent slope down to sidewalk not to exceed 3:1. If the contractor damages the blocks of any portion of the wall to remain through its own operations, then the contractor shall replace them at no expense to the department.

D Measurement

The department will measure Removing Modular Block Retaining Wall as each linear foot of removed modular block retaining wall, acceptably completed.

E Payment

Supplement standard spec 204.5 to include the following:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0263	Removing Modular Block Retaining Wall	LF

Payment is full compensation for removing all items that abut or underlie a portion of the modular block retaining wall to be removed and modifying the blocks at the new modular block retaining wall end.

194. Removing Railroad Tie Retaining Wall, Item SPV.0090.0264.

A Description

This special provision describes removal and disposal of railroad ties used as retaining walls within the project limits.

B (Vacant)

C Construction

Conform to standard spec 204.3 except that the railroad ties become the property of the contractor and must be properly disposed of off the project site. Do not bury the railroad tie material within the project limits.

D Measurement

The department will measure Removing Railroad Tie Retaining Wall by the linear foot along the top of the wall constructed using the railroad tie materials, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0264	Removing Railroad Tie Retaining Wall	LF

Payment is full compensation for breaking down and removing; for obtaining any required work permits; for hauling and disposing of materials; for restoring and for backfilling after the removal of the materials.

113. Marking Line Epoxy Block Style 12-inch, SPV.0090.0272.

A Description

This special provision describes furnishing and installing Marking Crosswalk Epoxy Block Style 12-inch White as directed by the engineer, as shown on the drawings and as hereinafter provided.

Perform work under these items according to the requirements of standard spec 646 and the details as shown on the plans, with the exception of the differences noted here within.

B Materials

Furnish epoxy pavement marking and glass bead material according to the standard spec 646.

C Construction

Construction of pavement markings shall be according to manufacturer application and installation procedures, standard spec 646, and engineer.

All pavement marking areas shall be laid out by the contractor and then reviewed by the engineer. Approval of the marking layout shall be approved by the engineer prior to placement of material.

The contractor shall protect the pavement markings from damage and allow them to fully cure prior to allowing traffic to drive over markings. Any damage shall be corrected by the contractor at the contractor's expense.

D Measurement

The department will measure Marking Line Epoxy Block Style 12-inch White by the linear foot, acceptably completed. The department will measure the Marking Block Crosswalk bid items as linear foot of each line placed.

E Payment

The department will pay for the measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0272	Marking Line Epoxy Block Style 12-inch	LF

Payment shall be in accordance with standard spec 646.5.

195. Marking Epoxy 6-inch Black Non Grooved, Item SPV.0090.0274; Marking Epoxy 10-inch Black Non Grooved, Item SPV.0090.0275.

A Description

This special provision describes applying epoxy black marking conforming to standard spec 646, as the plans show, and as follows.

B Materials

Furnish 6" black epoxy pavement marking materials conforming of standard spec 646.

C Construction

Apply 6' black epoxy conforming to standard spec 646.3.

D Measurement

The department will measure Marking Epoxy Black Non Grooved items by the linear foot acceptably completed, measured once as the length of the centerline of the completed installation.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0274	Marking Epoxy 6-inch Black Non Grooved	LF
SPV.0090.0275	Marking Epoxy 10-inch Black Non Grooved	LF

Payment shall be in accordance with standard spec 646.5.

196. Fence Safety Left in Place, Item SPV.0090.0280.

A Description

This special provision describes providing plastic fence left in place at locations the plans show.

B Materials

Furnish notched conventional metal "T" or "U" shaped fence posts.

Furnish fence fabric meeting the following requirements.

Color:	International orange (UV stabilized)
Roll Height:	4 feet
Mesh Opening:	1 inch min to 3-inch max
Resin/Construction:	High density polyethylene mesh
Tensile Yield:	Avg. 2000 lb per 4 ft. width (ASTM D638)
Ultimate Tensile Strength:	Avg. 3000 lb per 4 ft. width (ASTM D638)
Elongation at Break (%):	Greater than 100% (ASTM D638)
Chemical Resistance:	Inert to most chemicals and acids

C Construction

Drive posts into the ground of LFCF 12 to 18 inches. Space posts at 7 feet.

Use a minimum of three wire ties to secure the fence at each post. Weave tension wire through the top row of strands to provide a top stringer that prevents sagging.

Overlap two rolls at a post and secure with wire ties.

D Measurement

The department will measure Fence Safety Left in Place by the linear foot along the base of the fence, center-to-center of posts, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0280	Fence Safety Left in Place	LF

Payment is full compensation for furnishing and installing fence and posts and for maintaining the fence and posts in satisfactory condition.

Fence Safety Left in Place becomes property of the Department after final acceptance by the engineer.

197. Galvanized Pipe Railing, Item SPV.0090.0285.

A Description

This special provision describes This special provision describes fabricating, galvanizing, and installing railing in accordance to standard specs 506 and 513 and the plan details, as directed by the engineer, and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Galvanized Pipe Railing by the linear foot, along the top of rail, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0285	Galvanized Pipe Railing	LF

Payment is full compensation for fabricating, galvanizing, transporting, and installing the railing, including any touch-up and repairs.

198. Anchoring Concrete Barrier Temporary Precast Left In Place, Item SPV.0090.0701.

A Description

This special provision describes anchoring temporary concrete barrier. Perform this work according to applicable portions of standard spec 603 and as hereinafter provided.

B (Vacant)

C Construction

Perform this work according to standard spec 603.3.2.1, the plans, and as hereinafter provided.

Under the Anchoring Concrete Barrier Temporary Precast Left In Place bid item, furnish, deliver, and install anchors at the locations shown in the plans, as required by the project conditions, or as directed by the engineer. Install anchors during the final installation of the temporary concrete barrier to remain in place at the end of the project.

Anchors are to remain at the end of the project.

D Measurement

The department will measure the Anchoring Concrete Barrier Temporary Precast Left In Place by the linear foot, acceptably completed, measured as the linear feet of barrier initially installed or reinstalled. The department will not measure anchoring made solely to accommodate the contractor's means and methods.

The anchors become the property of the department after final acceptance by the engineer.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0701	Anchoring Concrete Barrier Temporary Precast Left In Place	LF

Payment is full compensation for furnishing, delivering, and installing anchoring devices.

199. Concrete Barrier Temporary Precast Left In Place, Item SPV.0090.0702.

A Description

This special provision describes leaving in place temporary precast reinforced concrete barrier conforming to the shape, dimensions, and details the plans show and conforming to the appropriate provisions of standard spec 603 and as modified in this special provision.

Concrete Barrier Temporary Precast Left In Place becomes property of the department after final acceptance by the engineer.

B (Vacant)

C Construction

C.1 Delivery, On-The-Project Trucking, and Removal

Replace standard spec 603.3.2.2 (1) with the following:

Under the Concrete Barrier Temporary Precast Left In Place bid item, furnish and deliver temporary barrier to worksites within the project and leave it in place upon project completion.

D Measurement

The department will measure the Concrete Barrier Temporary Precast Left In Place by the linear foot acceptably completed, measured as the linear feet of installed length left in place once for each contract- identified worksite within the project and other moves the engineer directs. The department will only measure moves requiring a truck haul. The department will not measure moves made solely to accommodate the contractor's means and methods. The department will measure concrete barrier anchoring separately.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0702	Concrete Barrier Temporary Precast Left In Place	LF

Replace standard spec 603.5.3 (1) with the following:

Payment for Concrete Barrier Temporary Precast Left In Place is full compensation for providing barrier, initial delivery, trucking between worksites and leaving barrier, steel rail connections, and steel cap rail, for installations abutting permanent or concrete barrier temporary precast left in place after contract completion.

~~see 603-010 (20171004)~~

200. Fence Temporary 6-Foot, Item SPV.0090.0703.

A Description

This special provision describes furnishing, erecting and maintaining temporary chain link fence 6-foot including gates, as shown on the plans and as directed by the engineer, according to standard spec 616, and as hereinafter provided. The intent of this specification is to provide a secure enclosure.

B Materials

Fencing parts furnished do not have to be new materials. Used, re-rolled and open seam materials will be permitted. Gates shall be a minimum of 12 feet wide.

No specific metallic coating will be required for the chain link fencing materials. Materials furnished do not have to be of the same type. Fence height shall be a minimum of 6 feet.

The engineer may reject fencing materials which, in the engineer's opinion, are too damaged or misaligned to provide acceptable closure.

C Construction

Fence posts may be driven into the ground or set in augered holes, backfilled and compacted. Minimum embedment shall be 4 feet. In paved areas fence posts shall be fastened to either temporary concrete barrier or the pavement by methods ensuring a secure enclosure. Where fence is installed in areas that are not to be disturbed by subsequent construction activities, the disturbed area shall be restored in kind at no additional cost to the department.

D Measurement

The department will measure Fence Temporary 6-Foot in place by the linear foot from end posts, center to center, along the ground line, acceptably completed. Temporary fence will be measured once for payment. Additional measurement for fence maintenance and removal will not be made.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0703	Fence Temporary 6-Foot	LF

Payment is full compensation for furnishing all materials; erecting posts, gates and fence; maintaining fencing; removing and disposing of fencing; and for restoring disturbed areas.

201. Glare Screens Temporary, Item SPV.0090.0704.

A Description

This special provision describes furnishing, installing, maintaining, and removing a modular paddle glare guard system on concrete barrier temporary precast at the indicated locations according to the plans and standard specifications, as directed by the engineer and as hereinafter provided.

B Materials

Utilize modular glare guard units consisting of vertical blades, bases, and a horizontal base rail. Utilize paddle devices a minimum of 24-inches in height and constructed of durable, impact resistant, non-warping flexible materials.

Utilize modular units with cumulative nominal length equal to the length of the temporary barrier on which they are installed so that the joint between the barrier sections shall not be spanned by any one unit. Units shall not alter the design of the concrete barrier.

Design the relative connection strengths between various components of the assembly to minimize the potential impact and debris hazard to approaching traffic and to simplify repairs. Fabricate the modular units in a manner to allow replacement of individual blades while the modular unit remains in place.

The blade, base and rail shall be made of high impact materials with sufficient strength to withstand three impacts from a horizontal steel bar traveling at 40 mph and impacting at mid-height of the blade. After three impacts, there shall be no evidence of cracking, splitting, delaminating or separation from the system.

Provide a paddle glare guard from a manufacturer below or an approved equal:

Manufacturer	Address
Valtir	15601 Dallas Parkway, Suite 525, Addison, Texas, 75001
Carsonite A Valmont Company	19845 U.S. Highway 76, Newberry, South Carolina, 29108
Flexstake Incorporated	2150 Andrea Lane, Fort Myers, Florida, 33912

C Construction

Attach the base rail to the top of the concrete barrier temporary precast by a mechanical or adhesive system with a minimum pullout and shear of 3000 psi. All mounting hardware shall be as specified by the manufacturer.

D Measurement

The department will measure Glare Screens Temporary by the linear foot of paddle glare guard, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0704	Glare Screens Temporary	LF

Payment is full compensation for furnishing, installing, maintaining and removing the Glare Screens Temporary.

202. Glare Screens Temporary Left In Place, Item SPV.0090.0705.

A Description

This special provision describes furnishing, installing, maintaining, and leaving in place a modular paddle glare guard system on concrete barrier temporary precast at the indicated locations according to the plans and standard specifications, as directed by the engineer and as hereinafter provided.

B Materials

Utilize modular glare guard units consisting of vertical blades, bases, and a horizontal base rail. Utilize paddle devices a minimum of 24-inches in height and constructed of durable, impact resistant, non-warping flexible materials.

Utilize modular units with cumulative nominal length equal to the length of the temporary barrier on which they are installed so that the joint between the barrier sections shall not be spanned by any one unit. Units shall not alter the design of the concrete barrier.

Design the relative connection strengths between various components of the assembly to minimize the potential impact and debris hazard to approaching traffic and to simplify repairs. Fabricate the modular units in a manner to allow replacement of individual blades while the modular unit remains in place.

The blade, base and rail shall be made of high impact materials with sufficient strength to withstand three impacts from a horizontal steel bar traveling at 40 mph and impacting at mid-height of the blade. After three impacts, there shall be no evidence of cracking, splitting, delaminating or separation from the system.

Provide a paddle glare guard from a manufacturer below or an approved equal:

Manufacturer	Address
Valtir	15601 Dallas Parkway, Suite 525, Addison, Texas, 75001
Carsonite A Valmont Company	19845 U.S. Highway 76, Newberry, South Carolina, 29108
Flexstake Incorporated	2150 Andrea Lane, Fort Myers, Florida, 33912

C Construction

Attach the base rail to the top of the concrete barrier temporary precast by a mechanical or adhesive system with a minimum pullout and shear of 3000 psi. All mounting hardware shall be as specified by the manufacturer.

D Measurement

The department will measure Glare Screens Temporary by the linear foot of paddle glare guard, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.0705	Glare Screens Temporary Left In Place	LF

Payment is full compensation for furnishing, installing, maintaining and leaving in place the Glare Screens Temporary.

203. Liquidtight Flexible Nonmetallic 1 ½-Inch Conduit, Item SPV.0090.1005

A Description

This special provision describes furnishing and installing Liquidtight flexible nonmetallic conduit for street lighting in accordance to section 652 of the standard specifications, and as shown in the plan details. All work shall be in accordance with section 651.

B Materials

The Liquidtight flexible nonmetallic conduit shall be Type LFNC-B. The conduit shall be nonconductive, noncorrosive to oil, acid, ozone, and alkaline. The conduit shall have a smooth inner surface with integral reinforcement within the conduit wall.

The flexible nonmetallic conduit shall be UL listed for use as indicated in Article 356 of the latest NEC, and for outdoor use and sunlight resistant.

The fittings and adapters shall be of the same manufacturer as the conduit.

C Construction

Install the fittings, adapters, and conduit in conjunction with street lighting. Install per the manufacturer's instructions and as shown on the plans.

D Measurement

The department will measure Liquidtight Flexible Nonmetallic 1 ½ Inch Conduit per size by the linear foot of conduit installed acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.1005	Liquidtight Flexible Nonmetallic 1-1/2-Inch Conduit	LF

Payment is full compensation for furnishing and installing the conduit, including the connectors.

204. Electrical Cable Type 4#2/1#8 XLP, Item SPV.0090.1012

A Description

This special provision describes furnishing and installing service cable in accordance with current City of Milwaukee Electrical methods and National Electrical Code standards. The service cable shall consist of five (5) cross-linked polyethylene covered, stranded, copper conductors. All work shall be in accordance with Wisconsin DOT Standard Specifications section 651.

B Materials

B.1.1.

Unless otherwise specified, the cable to be furnished shall comply with the manufacture and test requirements of the Insulated Cable Engineers Association (ICEA) Specification No. S-61-402, NEMA WC5, latest revision.

B.1.2. Conductors

The conductors shall be of soft round annealed uncoated stranded copper conductor per ASTM B-3, ASTM B-8, and UL Standard UL-44. Conductors No. 8 A.W.G. or larger shall be stranded. Conductors smaller than No. 8 A.W.G. shall be solid unless otherwise specified. Stranding must meet the requirements of ASTM B8, Class B.

B.2. Insulation

B.2.1. 600V

The insulation for cable rated 600V shall be cross XLPE thermosetting chemically crosslinked polyethylene insulation in accordance with industry standard ICEA Pub. No. S-95-658/NEMA WC-70 (2009), latest revision, and shall be a nominal 45 mils. thickness. Insulation shall meet the ANSI/ASTM D2220-74 (latest revision) accelerated water absorption requirements and -30°C (-22°F) cold bend test with a separator applied between the stranded conductor and insulation to facilitate cable stripping. The outside diameter of the insulating covering must be circular and extruded concentrically over the conductor.

B.2.2. Nominal Thickness

The nominal insulation thickness around each individual conductor shall be not less than 90% of the thickness specified in the schedule.

B.2.3. Color Code

The insulation compound which covers each conductor making up a cable shall be color coded in conformance with the N.E.M.A. Color Code Standard, unless otherwise specified; however, printed color designations as in I.3.2 or I.3.3. will not be acceptable under this specification (see schedule). Individual cable will be black, white, red, gray and green.

B.3. Marking

B.3.1.

2. Identification for each conductor must be provided by colors in accordance with I.M.S.A. Standards. The outer insulation must be marked with the following information at a minimum: conductor size (AWG), 600V, XLPE, USE-2, manufacturer's name, date of manufacture. All markings must be a minimum of one-eighth inch (1/8") in height. Marking shall be at approximately two (2) foot intervals. A sequential footage marking must be located on the opposite side of the jacket. All marking must be perfectly legible with permanent white ink.

B.4. Round Cable

B.4.1.

This cable shall consist of stranded, uncoated, conductors each concentrically encased with a cross linked polyethylene USE-2 rubber insulation.

B.4.2. Inspection and Tests

Each length of the individual insulated conductor and completed cable shall comply with all requirements of I.C.E.A. Standards S-61-402. Sampling and Test Methods shall be in accordance with Part 6. A certified report of the tests made on the cable to show compliance with this specification may be required prior to shipment. If requested, a sample of the cable covered by the report shall also be submitted.

POWER, CABLE SCHEDULE FOR SPECIFICATION

	4#2/1#8	
Size of Conductor	#2	#8
Number of Conductors	4	1
Number of Wires in Conductor	7	7
Type of Insulation	4 Cross-Linked Polyethylene (XLPE)	1 Cross-Linked Polyethylene (XLPE)
Insulation Thickness	60 mils	60 mils
Insulation Voltage Rating	600 volt	600 volt
Insulation Color Code	1-black (hot) 1-white (neutral) 1-red (hot) 1-gray (neutral)	1-green (ground)
Non-Hydroscopic Fill	None	
Moisture Resisting Sheath		
Jacket Thickness	None	
Number of Wires in Conductor	7	7
Type of Insulation	4 Cross-Linked Polyethylene (XLPE)	1 Cross-Linked Polyethylene (XLPE)
Insulation Thickness	60 mils	60 mils

Insulation Voltage Rating	600 volt	600 volt
Insulation Color Code	1-black (hot) 1-white (neutral) 1-red (hot) 1-gray (neutral)	1-green (ground)
Non-hydroscopic Fill	None	
Moisture Resisting Sheath		
Jacket Thickness	None	

All conductors shall be uncoated annealed soft copper.

C Construction

The cable shall be installed in HDPE, PVC, and Liquidtight Flexible Non-Metallic conduit when indicated on plans. Any turf damage during installation of cable shall be restored (grass, asphalt or concrete) by the contractor. All splices in luminaires, pull boxes, and transformer bases / hand holes, must be completed by the contractor unless otherwise designated on plans. Do not splice directly in underground or conduit. Do not leave wire or cable ends uncovered or submerged in water. If the engineer observes this condition, the engineer may reject the entire length of cable or wire. Make all electrical connections and splices in the luminaire, pole or transformer base with approved pressure or compression type fittings. Cover tape with a liberal coating of an electrical varnish or sealant providing flexible protection from oil, moisture, and corrosion. Obtain the engineer's approval of this electrical coating before using. Extend wire for termination 15 inches beyond the pole hand hole. Make all electrical splices in the pull box with pre-approved insulated direct burial and submersible multi-port splice and tap connectors with wire range 2/0 - #14 AWG.

For all cables entering each pull box/vault, provide an extra loop, approximately 3 feet in length, to remain in each pull box/vault. This loop of cable is in addition to the amount needed to reach from the entrance conduit raceway end to the opening in the exiting conduit raceway.

When there is more than one circuit, bundle the circuit conductors with nylon cable ties or engineer approved electrical tape at access points.

At each pull box, identify the line side of each circuit with an attached tag using a fade-resistant waterproof black marker pen and provide the following Info:

Circuit ID: (*Cir.WD-E*)

Line Side coming from unit street light unit is on: (*Street Name*)

Side of street light unit is on: (*N,S,E,or W*)

Number of street lighting units from nearest crossing street: (*1,2,3,4,5*)

Direction from the nearest crossing street: (*N,S,E,or W*)

Name of the nearest crossing street: (*Street Name*)

Example of Tag Info:

Cir.WD-E,

Line Side from: *W. Canal St. / N. / 1 / W. /of Potawatomi Cir.*

Install conductors in continuous lengths without splices from termination to termination. The contractor may only splice at pull boxes that connect to light poles by using pre-approved insulated direct burial and submersible multi-port splice and tap connectors with wire range 2/0 - #14 AWG. At locations where no pull box or transformer bases exist, splice at the hand-holes in poles.

D Measurement

The department will measure Electrical Cable Type 4#2/1#8 XLP by the Linear Foot (LF) acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.1012	Electrical Cable Type 4#2/1#8 XLP	LF

Payment is full compensation for furnishing labor, equipment, coordination and all materials and incidentals necessary to complete the work. Also included is the labor, equipment and materials for removal of construction debris and site restoration.

205. Cable Aerial Aluminum 4 AWG Quadruplex Left In Place, Item SPV.0090.1013.

A Description

Furnish, install, and connect temporary overhead cable complete with all splicing, identifications, terminations and guy wires at wood poles. This item will be left-in-place for this project.

B Materials

Overhead cable shall be aluminum conductors according to ASTM B 230 and shall be Class B stranded according to ASTM B 231, and shall conform to the values listed in the table below:

Phase Conductor				Messenger Wire	
Size AWG	Stranding	Avg. Insulation Thickness		Min. Size AWG	Stranding
		mm	mils		
6	7	1.1	45	6	6/1
4	7	1.1	45	4	6/1
2	7	1.1	45	2	6/1
1/0	7	1.1	45	1/0	6/1
Phase Conductor				Messenger Wire	
Size AWG	Stranding	Avg. Insulation Thickness		Min. Size AWG	Stranding
		mm	mils		
6	7	1.1	45	6	6/1
4	7	1.1	45	4	6/1
2	7	1.1	45	2	6/1
1/0	7	1.1	45	1/0	6/1

The aerial cable shall be an assembly of insulated aluminum conductors and a steel messenger wire according to ANSI/ICEA S-76-474. The cable assembly may have the messenger wire intertwined with the insulated cables or lashed to the insulated cables by a factory wrap. The cable shall be assembled according to ANSI/ICEA S-76-474.

All cable shall be rated 600-V. The cable shall be rated 105° C dry and 90° C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals, and UV rated. The UL listing mark, cable voltage, insulation type and ratings, as well as the cable size, shall all be clearly printed on the cable in a color contrasting with the insulation color. When specified, each cable installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible.

All electric cables installed shall be color coded. Neutral wires shall be color-coded white. Single phase three wire runs of cable shall be color-coded one black, one red, and one white. Insulated ground wires, where applicable, shall be green. Color striping of cables will not be acceptable in lieu of the specified color-coding means.

Make the luminaire connections to the aerial cable with listed parallel tap insulation piercing connectors. The connector shall be rated for 600-V and be listed under UL Standard 486B.

C Construction

Overhead cable as shown on temporary lighting plans will be left-in-place.

Upon written request by the contractor, the engineer may permit to reuse removed temporary overhead cable of ampacity equivalent to the specified cable and of a type and condition approved by the engineer, if possible.

Install guy wires as necessary per WisDOT standard details for Spanwire Temporary Traffic Signal.

Conform to standard spec 655.3.5(9) for ground resistance testing.

Upon completion of project, the contractor for Project I.D. 1060-27-72 shall have the opportunity to inspect the temporary lighting left-in-place for defects and deficiencies. It shall be the contractor's responsibility to correct any defects or deficiencies prior to surrendering the temporary lighting to the appropriate contractor.

Surrender the temporary left-in-place lighting installation to the contractor for Project I.D. 1060-27-72 after all defects or deficiencies have been corrected.

D Measurement

The department will measure Cable Aerial Aluminum 4 AWG Quadruplex Left In Place; Quadruplex in length by the linear foot in place, acceptably completed, and will be taken as the length of the messenger wire. Measurement will be made in a straight line between changes in direction and to the centers of light standards and control cabinets. Sag of the aerial cable or vertical cable will not be measured for payment. The rewiring to facilitate relocation of the cable due to staging or other construction requirements will not be measured for payment.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.1013	Cable Aerial Aluminum 4 AWG Quadruplex Left In Place	LF

Payment is full compensation for providing electrical wire; for making all connections; for providing all connectors, including wire nuts, fuses, fuse holders, splices, tape, and insulators; for providing messenger wire, and guy wires.

Payment also includes the following:

1. Furnishing and installing replacement equipment.
2. Surrendering all equipment to the appropriate contractor after project completion.

206. Drilled Foundation Shaft 34.65-Inch, Item SPV.0090.4100; Drilled Foundation Shaft 59.06-Inch, Item SPV.0090.4110.

A Description

This special provision describes installing drilled foundation shafts for bridge foundations as shown on the plans.

Do not start work on any drilled foundation shafts until acceptance of the Drilling Contractor Qualification submittal, successful completion and acceptance of the Trial Drilled Foundation Shaft 34.65-Inch and the acceptance of the Drilled Foundation Shaft Installation Plan.

A.1 Qualifications of the Contractor

A.1.1 Drilling Contractor Qualification Submittal

Submit the drilling contractor's qualifications, staff experience records, and equipment cut sheets and descriptions that will perform the work in this special provision at the preconstruction meeting or 21 calendar days prior to the start of drilled shaft construction, whichever date is earlier. Note that the contractor qualification submittal for this special provision may be different than, or may encompass the requirements of, that indicated in the "Foundation Drilling 36-Inch Diameter" special provision. The engineer will accept or reject the drilling contractor's qualifications, staff experience records, and equipment descriptions within 7 calendar days after receipt of the submission.

The drilling contractor performing the work described in these special provisions must have drilled foundation shaft project(s) successfully completed similar to those that the plans show using equipment meeting the requirements in subsection B.2 within the last five years. Submit a list outlining the drilling contractor's experience on at least five projects where they have successfully completed drilled

foundation shaft construction, including one project completed within the last five years. A separate shaft project is defined as a project with at least 120 linear feet of total shaft length. Include in the project experience at least one project completed in soil and groundwater conditions similar to that anticipated for this project. Include in the project experience advancing drilled shafts with a shaft size at least as large as the plans show to a depth of at least 50 feet below the original ground surface. Show in at least one project evidence of permanence with a five-year minimum age. Include in the project experience documentation for each project a brief project description, detail the size of the shafts, construction methods used during installation, methods used for shaft stabilization, local soil conditions, actual construction time and contact information consisting of an individual's name and current phone number. Contacts must be capable of verifying project participation.

A.1.2 Staff Experience

Submit contractor staff experience records of the on-site engineer, on-site supervisors, crew chiefs and drill operators, who will be assigned to the project. Provide for each staff record a summary of each individual's experience that is complete enough for the engineer to determine whether each individual has satisfied the following qualifications. Do not use consultants or manufacturer's representatives in order to meet the requirements of this section.

- On-site engineer - Assign an individual as principal in charge and the contractor's main contact who has at least five years of drilled shaft experience, at least one year of which is as an employee of the contractor in good standing, and who has completed at least one successful drilled foundation shaft project using a shaft size at least as large as the plans show.
- On-site supervisor - Assign an individual to supervise the work who has at least five years of drilled shaft experience, at least one year of which is as an employee of the contractor in good standing, and who has completed at least three successful drilled foundation shaft projects using shaft sizes at least as large as the plans show. Include at least one project completed in soil and groundwater conditions similar to those anticipated for this project.
- Crew chiefs and drill operators - Assign crew chiefs and drill operators who have at least five years of drilled shaft experience using equipment meeting the requirements in subsection B.2, at least one year of which is as an employee of the contractor in good standing. Include at least one project completed in soil and groundwater conditions similar to those anticipated for this project.

List, as a minimum for each of the above individuals, three references of owners or engineers familiar with their work and provide address, phone, and e-mail contact information for each reference.

A.1.3 Equipment Requirements

Submit equipment cut sheets and descriptions to perform the work in this special provision that meet the requirements in subsection B.2.

A.2 Substitutions

The contractor may submit his own organization, staff and equipment to fulfill the requirements of subsections A.1.1, A.1.2, and A.1.3, as the drilling contractor or he may sublet to subcontractor. However, the organization approved that fulfills the requirements of subsection A.1.1 shall be the organization that performs the work in this special provision.

Request in writing to the engineer to provide substitute drilling contractor, staff or equipment not identified in the contractor's accepted drilling contractor qualification submittal. Substitute drilling contractor, staff or equipment must be equivalently or better qualified as determined by the engineer. Provide the experience and qualification information for the proposed substitute drilling contractor, staff or equipment as was originally provided in the drilling contractor's qualification submittal. The substitute drilling contractor, staff or equipment will not be permitted to start or continue any drilled foundation shaft work until the engineer confirms their qualifications and accepts the proposed drilling contractor, staff or equipment to work on the project.

Expect suspension by the engineer of drilled foundation shaft work if the contractor substitutes unqualified drilling contractor for accepted drilling contractor, unqualified personnel for accepted personnel, or unqualified equipment for accepted equipment, during construction. If work is suspended due to the substitution of unqualified drilling contractor, personnel, or equipment, the adjustment in contract time resulting from the suspension of work will not be allowed.

B Materials

B.1 General

Concrete, drilling fluid, reinforcement and formwork shall be in accordance with the requirements of QMP Drilled Shafts, standard specifications, as shown on the plans, and as hereinafter provided.

In the event that the provisions of other specification clauses cause ambiguity or conflict with these special provisions, the stricter requirement shall apply unless otherwise accepted by the.

B.2 Equipment

Equipment used for excavation, drilling, and cleaning operations shall utilize a full depth temporary casing, installed using a hydraulic oscillator, and an overhead rotary drill rig to excavate inside the casing. The oscillator shall have adequate capacity; including power, torque, and down thrust to install and extract the full depth temporary casing to a depth equal to the maximum depth of the drilled shafts shown in the plans plus 15 feet, or plus 20 percent of the maximum depth shown in the plans, whichever is greater. The overhead rotary drill rig shall have adequate capacity, including power, torque and down thrust to excavate a hole within the casing to a depth equal to the maximum depth of the drilled shafts shown in the plans plus 15 feet, or plus 20 percent of the maximum depth shown in the plans, whichever is greater. Anticipate and make available at the job site all equipment necessary and essential to penetrate soft and hard soils (including bedrock), as well as cobbles and boulders and unidentified man-made obstructions, during the construction of the drilled shafts.

The oscillator must be capable of installing and extracting the full depth temporary casing by means of rotational or oscillatory motion and advancing the casing a minimum of 5 feet ahead of the excavation inside the casing until the shaft tip elevation is reached. No excavation ahead of the casing is permitted without the engineer's approval. Installation or removal of temporary casing by impact driving or vibration is not permitted. Advancing and installing the temporary casing by means of excavation ahead of the casing is not permitted.

Where hard soils, or other material including natural or man-made obstructions are encountered and cannot be drilled using conventional earth or rock augers, drilling buckets, and/or over reaming tools, provide drilling equipment including but not limited to rock core barrels, rock tools, down the hole hammer, chisels, air tools, or any other equipment necessary to advance the drilled shaft excavation to the depth and size as shown on the plans.

When applicable, or required by the engineer, if applicable, provide equipment that produces a stable slurry suspension, mechanical agitation, and a pipeline or other safe methods of transporting the slurry to the drilled shaft.

B.3 Casing

B.3.1 Temporary Casing

Temporary casing shall be steel; rigid, smooth, clean, watertight, and of ample strength to withstand both handling and installation stresses and the pressure of both concrete and the surrounding earth materials. Temporary casing must be of sufficient length to provide temporary casing the full length of excavation for all drilled shafts. Segmented casing, if used, must be segmented using flush bolted, casing joints. Telescopic casing is not permitted. The diameter of casing shall not be less than the specified size of the drilled shaft. All casing diameters shown on the plans refer to outside diameter, O.D. dimensions.

B.4 Temporary Working Surface

Fill material, if required, to create a working surface for construction can be any suitable material approved by the engineer, if applicable, containing no logs, stumps, brush, perishables, or other materials such as stone or broken concrete that may affect the drilling of the shafts. Material that will remain permanently shall consist only of appropriate embankment fill when placed in association with a roadway, conforming to the requirements of standard spec 207.2.

B.5 Reinforcing Steel and Spacers

Deformed reinforcing bars shall comply with the size, dimension, spacing, and details shown on the plans. In addition, they shall conform to AASHTO M31, Grade 60, and all the pertinent requirements of standard spec 505. Non-corrosive wheel type spacers and boots shall be used to properly position the reinforcing steel. All reinforcing steel shall be 100% wire tied between the vertical reinforcement and ties.

B.6 Crosshole Sonic Logging (CSL) Tubes

Access tubes for CSL testing shall be 2 inches I.D. schedule 40 steel pipe conforming to ASTM A 53, Grade A or B, Type E, F, or S. Pipes shall have a round, regular internal diameter, free of defects or obstructions; including any defect at the pipe joints, to permit the free unobstructed passage of source

and receiver probes. Each tube or steel pipe shall be fitted with a watertight shoe onto the bottom and a removable cap at the top. Both, the shoe and cap shall be watertight and free from corrosion. The internal and external faces of the CSL tubes shall be clean to ensure passage of the probes and produce a good bond with the concrete.

Furnish neat cement grout for filling the access tubes at the completion of the CSL tests and acceptance of drilled shafts. Use grout that is a homogeneous mixture of water and Portland cement Type I/II or Type 1 L (MS). Do not exceed a water-cement ratio of 0.45. Provide grout with an unconfined compressive strength equal to the required compressive strength of the drilled shaft at 28 days when tested in accordance with ASTM C 1107.

B.7 Thermal Integrity Profiler (TIP) Wires

Install wires and provide other accessories described in bid item Thermal Integrity Profiler (TIP) Testing, Drilled Foundation Shaft 34.65-Inch and Thermal Integrity Profiler (TIP) Testing, Drilled Foundation Shaft 59.06-Inch elsewhere in these special provisions.

C Construction

C.1 Drilled Foundation Shaft Installation Plan

C.1.1 General

Prepare and submit a Drilled Foundation Shaft Installation Plan at the preconstruction meeting or at least 30 calendar days prior to beginning drilled shaft construction, whichever date is earlier. Submit the Drilled Foundation Shaft Installation Plan to the engineer for review. The engineer will accept the plan as submitted or return the plan with requested revisions. The engineer's initial acceptance of the submitted plan is considered preliminary with final acceptance pending the successful completion and acceptance of the Trial Drilled Foundation Shaft 34.65-Inch included in the contract. Do not start any work on production drilled foundation shaft installations until after the successful installation of the Trial Drilled Foundation Shaft 34.65-Inch and the engineer provides final acceptance of the Drilled Foundation Shaft Installation Plan. Acceptance of the installation plan does not relieve the contractor of responsibility for successful completion of the drilled foundation shafts.

C.1.2 Subsurface Conditions

The subsurface conditions vary across the project site and are not necessarily the same along the length of structures containing drilled shafts. Anticipate the possibility of encountering loose permeable sand or gravel seams of substantial thickness interlaced randomly within glacial clay and till deposits, saturated soils and ground water, isolated cobbles or boulders, and nestled cobbles and boulders while excavating and installing drilled shafts along the length of structures within this contract.

The contractor is strongly advised to obtain and review the Geotechnical Exploration and Foundation Evaluation Report for the bridge structure for which the drilled foundation shafts are being constructed. See article "Geotechnical Investigation Information" in these special provisions for information on obtaining geotechnical reports.

The contractor is required to complete rock core drilling described in subsection C.3.6.8 prior to excavation of shafts socketed into rock. Account for rock variability described in the geotechnical report and construction schedule concerns in making this determination.

C.1.3 Submittals

The Drilled Foundation Shaft Installation Plan shall include the following:

- a. **Job Site Visit.** Acknowledge that the job site was visited to verify the site conditions with regard to entrance, access, overhead lines, subsurface features, clearing and grubbing, permitting, and collecting all information necessary to plan and execute the installation of the drilled shafts.
- b. **Plan to Protect Existing Structures.** Outline the steps to be taken during drilled shaft installation to protect adjacent or nearby structures and utilities.
- c. **Details of Environmental Control Procedures.** Provide plan to prevent loss of slurry or concrete into waterways, project areas, or protected areas. Detail method to ensure the compliance with state and federal environmental regulations during drilled shaft construction.
- d. **List of Proposed Equipment.** Include details of proposed templates; number and sizes of cranes; number and size of oscillators; number and sizes of drills, include rotary torque, crowd force drills, and maximum drilling depth; diameter, length, and reach of augers, bailing buckets, guide walls, templates, and roller bits; cleaning equipment including cleaning buckets,

submersible pumps, or air-lifted pumps; size of de-sanding equipment and slurry pumps; soil/rock-coring sampling equipment; inspecting drilled shaft apparatus; length and diameter of tremie or size of concrete pumps; size, length, and thickness of casings; over reaming equipment; and all relevant equipment necessary to complete the drilled shaft installation. Acceptance of the installation plan by the department does not relieve the contractor responsibility to provide other equipment, if necessary, to achieve satisfactory shaft installations meeting the requirements of this special provision.

- e. **Details of Sequence of Drilled Shaft Installation and Time for Construction Operations.** Include a layout of the drilled shaft installation sequence. Provide a sequential list of installation steps and a timetable of operations for installing full depth temporary casing, sealing casing, excavation and/or drilling time, drilled shaft cleaning, rock coring, drilled shaft inspection, concrete placement. Consider the effect of construction operations of one drilled shaft onto the adjacent drilled shaft(s) and utilities and avoid construction conflicts that will affect the quality or integrity of the completed work. Indicate when and what construction sequence modifications shall be performed under atypical situations, i.e, weekend or holiday shutdowns, unanticipated shutdowns due to equipment issues, etc.
- f. **Proposed Drilled Shaft Installation Procedure(s).** Provide details of the proposed shaft installation procedures, including coring or drilling boulders, rock, obstructions or steep sloping surfaces, when required, and meeting the minimum installation requirements set forth in subsection C.3. Method for identification of the competent or bearing material before finalizing the excavation. Method for monitoring verticality of the drilled shaft walls during excavation, and details of proposed corrective measures to be implemented for shafts out of tolerance. Details of the methods and means of preventing displacement of the casing and/or drilled shaft during installation.
- g. **Details of Slurry Operations.** Provide details of slurry type, methods to mix, circulate, de-sand, and test the slurry to comply with this special provision. Include details of procedures to prevent loss of slurry or concrete into waterways, sewers, and other areas to be protected. Provide slurry handling and disposal plan that complies with applicable state and federal regulations, as well as permit requirements.
- h. **Inspection and Cleaning.** Methods to clean and inspect the drilled shaft excavation prior to reinforcement placement.
- i. **Crosshole Sonic Logging (CSL).** Method to install and secure the CSL pipes to the reinforcing cage or steel core, along with the proposed selection of pipe and size.
- j. **Thermal Integrity Profiler (TIP).** Provide a method to install and secure the TIP wires to the reinforcing cage.
- k. **Details of Reinforcement Steel Placement During Construction.** Include methods to ensure cage centering and cover; proper cage orientation, cage integrity while lifted during placement, number of cranes, number of lift points, and number of spreader bars; number and location of bottom and side spacers; cage support; and tie downs during concrete placement.
- l. **Concrete Placement Plan.** The purpose of the Concrete Placement Plan is to ensure that a sufficient quantity of concrete is at the job site or in transit to the job site so that the entire pour can be done without delay. Include location of the concrete plant, number of trucks, estimated delivery times, estimated time between trucks, and number of trucks at the site before placement begins. Indicate the use of tremie or concrete pump lines and details of the seal to be used at the bottom end of the tremie or concrete pump line. Breakdowns of concrete plants, trucks, or traffic problems shall be considered under this Concrete Placement Plan. The contractor shall be aware of, and account for, batch, travel, and concrete placement times. Include an estimate of the concrete placement time per drilled shaft. When applicable, detail excavation to grade and finishing of the drilled shafts.
- m. **Casing Removal.** Include the details and means by which the contractor intends to remove full depth temporary casings and provide information about staged temporary casing removal when applicable.
- n. **Methods of Handling and Disposal of Spoil Excavation, Waste Slurry, Waste Concrete, and Drilled Shaft Cutoffs.** Present sufficient details to the engineer, if applicable, to evaluate the adequacy and compliance of the contractor's methods of disposal with the standard specifications, including all related environmental permits and local regulations.

- o. **Other Information** requested on the plans or by the engineer.
- p. **Reinforcing Steel Assembly and Installation Plan.** Prepare and submit the reinforcing steel assembly and installation plan. Reinforcing steel shop drawings, details of reinforcement placement, including bracing, centering, and lifting methods, and the method to assure the reinforcing cage position is maintained during construction, including use of bar boots and/or rebar cage base plates, and including placement of rock backfill below the bottom of shaft elevation shall comply with the pertinent requirements of the specifications.

The reinforcing steel assembly and installation plan shall include:

1. Procedure and sequence of steel reinforcing bar cage assembly.
2. The tie pattern, tie types and tie wire gages for all ties on permanent reinforcing and temporary bracing.
3. Number and location of primary handling steel reinforcing bars used during lifting operations.
4. Type and location of all steel reinforcing bar splices.
5. Details and orientation of all internal cross-bracing, including a description of connections to the steel reinforcing bar cage.
6. Description of how temporary bracing is to be removed.
7. Location of support points during transportation.
8. Cage weight and location of the center of gravity.
9. Number and location of pick points used for lifting for installation, and for transport (if assembled off-site).
10. Crane charts and a description and/or catalog cuts for all spreaders, blocks, sheaves and chockers used to equalize or control lifting loads.
11. The sequence and minimum inclination angle at which intermediate belly rigging lines (if used) are released.
12. Pick point loads at 0, 45, 60 and 90 degrees and at all intermediate stages of inclination where rigging lines are engaged or slackened.
13. Methods and temporary supports required for cage splicing.
14. For picks involving multiple cranes, the relative locations of the boom tips at various stages of lifting, along with corresponding net horizontal forces imposed on each crane.

- q. **Details of Drilled Shaft Integrity Testing (CSL, TIP) Plan.**

C.1.4 Acceptance

The department will evaluate the Drilled Foundation Shaft Installation Plan for conformance with the requirements of these special provisions. Within 7 calendar days after receipt of the Drilled Foundation Shaft Installation Plan, the engineer, if applicable, will notify the contractor of the preliminary acceptance of the plan, or if additional information and/or changes are required. Any unacceptable part of the Installation Plan will require resubmission. The contractor must resubmit the Drilled Foundation Shaft Installation Plan for evaluation and review with the necessary changes or additional information provided. The engineer, if applicable, will provide a written notice of preliminary acceptance or rejection of contractor's resubmitted Drilled Foundation Shaft Installation Plan within 7 calendar days after its receipt. The engineer, if applicable, will provide final acceptance of the Drilled Foundation Shaft Installation Plan after the successful completion of the Trial Wall Panel Secant Pile and satisfactory drilled foundation shaft installation performance is demonstrated in the field.

After assessment or reassessment of the Drilled Foundation Shaft Installation Plan has been made and the engineer, if applicable, has granted preliminary acceptance, no changes to the plan can be made without written consent of the engineer.

C.2 Trial Drilled Foundation Shaft

After the Drilled Foundation Shaft Installation Plan has been preliminarily accepted, construct a Trial Drilled Foundation Shaft using the same crews and equipment that will be performing the drilled foundation shaft production work. Construct in accordance to the Trial Drilled Foundation Shaft special

provision and adhere to and demonstrate the adequacy of the accepted Drilled Foundation Shaft Installation Plan.

Construction of the Trial Drilled Foundation Shaft will be used to determine if the contractor's methods, equipment, personnel, and proposed procedures are effective to produce stable drilled shaft excavations and drilled foundation shafts that meet the requirements of these special provisions. Perform all testing that will be required for production shafts as described elsewhere in the special provisions. With approval of the engineer, revise construction methods and equipment as necessary during this stage or at any time during the installation of production shafts to satisfactorily complete the drilled foundation shafts in accordance to these special provisions.

In the event the contractor fails to demonstrate the adequacy of the drilled foundation shaft installation procedure(s) or equipment during construction of the Trial Drilled Foundation Shaft, the engineer will require appropriate modifications as may be necessary to produce acceptable results. Comply to satisfactorily demonstrate the adequacy of the proposed method(s) or equipment or construct additional trial wall panel secant pile shafts as indicated by the engineer at no additional cost to the department.

C.3 Drilled Shaft Installation

C.3.1 General

Carry out the work in accordance to the accepted Drilled Foundation Shaft Installation Plan and as demonstrated during installation of the Trial Drilled Foundation Shaft. The resulting installation plan shall include length of full depth temporary casing, details of the constituent materials of any drilling fluid or means used for stabilization of the bottom of the excavation, the method of inspection, details of the concrete design mix, concreting method, the anticipated time to complete one shaft, and the pattern of construction.

Ensure that damage does not occur to the completed shafts as a result of work on adjacent shafts. Submit to the engineer, if applicable, a drilled shaft installation sequence. The proposed sequence and timing of shaft installation shall be such that the installation work will not cause any damage to adjacent shafts. The shaft installation shall not commence until acceptance of the engineer, if applicable, has been obtained.

C.3.2 Temporary Working Surface

Use a temporary working surface to provide a level surface at the top of shafts for drilling where needed.

C.3.3 Forcible Correction

Where shafts have not been positioned within the specified limits no method of forcible correction will be permitted.

C.3.4 Records

Keep a work record of all shafts installed. Give a copy of each day's record to the engineer within 24 hours of that day's work being completed. The engineer will review and agree to the daily record form format before drilled shaft work commences. Incorporate any comments by the engineer into the record form. Note all unexpected drilling or installation conditions in the records.

C.3.5 Methods of Drilled Shaft Installation

C.3.5.1 General

The temporary casing installation method and concrete placement in the wet using a tremie pipe shall be used to produce sound and durable drilled shafts free of defects. When a particular installation method is required in the special provisions, only that method of construction shall be used. If no particular method is specified for use, select and use one of the methods of construction as determined by the site conditions and needed to properly accomplish the work. Do not use the permanent casing method unless authorized by the engineer. Submit to the engineer for acceptance his selected method of construction in the Drilled Shaft Installation Plan described in these special provisions.

Full length temporary casing with the use of water or slurry inside the temporary casing, is required for the installation of all drilled shafts on the project. The use of permanent casing method will not be permitted unless authorized by the engineer. The use of slurry without casing is not permitted. Full depth temporary casing shall be installed using hydraulic oscillating equipment specifically intended for temporary casing installation and extraction. Installation of full depth temporary casing by means of driving or vibrating is not permitted. Advancing and installing casing by means of excavation ahead of the casing is not permitted. During temporary casing installation and shaft excavation, the tip of the temporary casing shall

be advanced a minimum of 5 feet ahead of the tip of the excavation, until the bottom of the excavation is reached.

After the temporary casing is in place, excavate inside the casing, while keeping the temporary casing full of water or slurry as necessary to stabilize the bottom of the excavation within the casing. Excavate to the planned shaft tip elevation using the wet installation method techniques described in subsection C.3.5.4 below. Clean the bottom of the excavation. Before extracting the temporary casing, ensure that the level of fresh concrete inside the casing is at such level that the pressure of its hydrostatic head displaces up and out the fluid trapped in the annular space between the casing and the drilled shaft wall.

C.3.5.2 Dry Installation Method

The dry method of shaft installation is not permitted.

C.3.5.3 Temporary Casing Installation Method

The temporary casing method of shaft installation consists of supporting the shaft excavation by means of full depth temporary casing that is advanced ahead of the excavation until the drilled shaft tip elevation is reached. Excavate, remove, and clean all accumulated loose material from within the cased excavation before placing the reinforcement cage and the shaft concrete in the wet excavation. Do not place concrete into the wet excavation using free fall. Concrete must be placed under water in wet excavation using proper tremie procedures to direct the concrete under the water inside the shaft excavation and displace the water.

C.3.5.4 Wet Installation Method

The wet installation method consists of drilled shaft installation by means of full depth temporary casing in conjunction with the use of slurry, drilling fluid, or water that maintains a sufficient head of not less than 5 feet and maintains stability against heave and blow-in in the bottom of the excavation. Use the wet installation method for all drilled foundation shafts in the contract. When using the wet method below the groundwater table, all drilled shaft operations shall be accomplished while maintaining a positive head of fluid, not less than 5 feet, and of sufficient depth above the water table to avoid heaving or blow-in of the bottom of the excavation.

C.3.5.5 Permanent Casing Method

Do not use the permanent casing method.

C.3.6 Excavations

C.3.6.1 General

Excavations required for the drilled foundation shafts shall be performed through whatever materials are encountered to the dimensions and elevations shown in the plans, or as directed by the engineer, if applicable. The excavation and installation method shall be suitable for the intended results and materials encountered. Blasting is not permitted.

Maintain a construction log during the drilled foundation shaft excavation. The construction log will include information such as ground elevation, ground water elevation, sequence number, method of installation, machines and tools employed, drilling fluids employed, drilling times, excavated materials and their particular elevations, soil/rock cores samples and their particular elevations, rock sockets and their elevation, bells plus their size and elevations, and all other information relevant to the excavation process that will assist the engineer in evaluating the foundation. Information shall also include proposed methods for disposal of excavated material and slurry in accordance to state and local environmental regulations, codes and ordinances, the standard specifications, or as directed by the engineer.

C.3.6.2 Protection of Existing Structures

Take all reasonable precautions to prevent damage to existing structures and utilities. These measures shall include, but are not limited to, subsidence control during installation of temporary casings or excavation inside temporary casings.

Where drilled foundation shafts are to be installed in conjunction with embankment placement, the drilled foundation shafts shall be constructed after placement of the fill, unless otherwise shown in the plans, or accepted by the engineer, if applicable. If fill is required to be placed after completion of the drilled shafts, the footing cap shall be done, as closely as possible, after the fill is in place and compacted to final grade leaving only the space necessary for the construction of the cap.

C.3.6.3 Drilled Shaft Excavation

Provide the necessary equipment to remove and dispose of all materials encountered in the drilled shaft excavation to the dimension and elevation shown on the plans, or as directed by the engineer, if applicable. Contractor's excavation equipment may include but is not limited to earth augers and rotary drills designed to work within full depth temporary casing. Unless otherwise shown on the plans, the drilled shaft excavations shall be vertical bored holes extending from the ground surface down to design tip elevation.

C.3.6.4 Obstructions

Obstructions are defined as man-made objects that when encountered, stop or significantly impede downward progress of the temporary casing installation or excavation to less than 12-inches for 60 minutes or longer under maximum applied thrust and torque. Obstructions include man-made objects and may include, but are not limited to old concrete foundations, piling, abandoned utilities or buried pavements. Obstructions are further classified as "known obstructions" which are identified on the plans, and "unknown obstructions" that may be encountered but are not identified on the plans.

Employ special tools and/or procedures as necessary when obstructions are encountered and the contractor cannot advance the excavation more than 12-inches in 60 minutes using conventional rock augers fitted with teeth, drilling buckets, or under reaming tools operating at maximum power, torque, and down thrust. Special procedures and tools that may be required include, but are not limited to, chisels, breakers, core barrels, air hammer tools, and hand excavation. Other methods for obstruction removal such as temporary casing or hole diameter increase can be employed to aid in the removal if acceptable to the engineer, if applicable. Blasting is not permitted.

Natural deposits, including boulders, cobbles, nested cobbles and other deposits may be encountered that impede the installation and advancement of the temporary casing and excavation to less than 12-inches for 60 minutes or longer as noted above for obstructions. Natural deposits, regardless of makeup, depth, configuration, and consistency are not classified as obstructions as defined in this special provision or the special provision Obstructions Drilled Foundation Shaft included in the contract.

C.3.6.5 Lost Tools

Drilling tools that are lost in the excavation shall not be considered obstructions and shall be promptly removed. All costs due to removal of lost tools shall be borne by the contractor including costs associated with hole degradation during removal operations or time while the hole remains open.

C.3.6.6 Inspections and Cleanliness of Excavation

Provide the details of drilled shaft inspection and cleanliness within the Drilled Foundation Shaft Installation Plan, required by subsection C.1.3 of this specification. Provide equipment and tools for checking the dimensions and alignment of each drilled shaft excavation, and coordinate schedules for inspection of the excavation with the engineer, if applicable. Determine dimensions, alignment, and final depth of the drilled shafts after final cleaning. When applicable, provide visual confirmation with a camera or safe access and egress to the engineer, if applicable, for inspection of the walls and bottom of the drilled shaft excavation prior to placement of the rebar cage and concrete. After the drilled shaft excavation has been prepared for inspection, notify the engineer. The cleanliness and the bearing surface of the drilled shafts will be evaluated and accepted by the engineer. Unless the engineer specifies otherwise, the contractor's cleaning operation shall be considered sufficient when no more than 50 percent of the bottom area of each shaft has less than 1/2-inch of sediment or debris at the time of hole acceptance just prior to steel positioning and concrete placement. The maximum depth of sediment or any debris at any location on the bottom of the shaft shall not exceed 1 1/2-inch at the time of concrete placement.

C.3.6.7 Safety

Do not permit any worker to enter the drilled foundation shaft excavation for any reason unless a suitable casing has been installed, the water level has been lowered and stabilized below the level to be occupied, and suitable safety equipment and procedures have been provided to the personnel entering the excavation which includes OSHA certification for confined-entry-space.

C.3.6.8 Test Core

Collect a test core of the rock with a core diameter of not less than 2.125-inches (NQ core) and core length of not less than 10 feet and according to ASTM D2113.

Rock core drilling shall be performed prior to excavation of the drilled shaft to the necessary depths and meeting the recovery requirements outlined above or as directed by the engineer. Complete the test core

at least five working days prior to drilled shaft construction. The contractor is encouraged to review the geotechnical report listed in subsection C.1.2 in order to make this determination.

The department will verify that this rock core has a recovery of at least 50 percent throughout the length cored. If the core does not meet the above requirements, extend the core as directed by the engineer, if applicable. Subsequently, extend the drilled shaft embedment to the engineer-directed, if applicable, level.

After the shaft bearing level is established by the engineer, immediately grout the test core hole.

C.3.6.9 Record Information

Provide to the department the drilled shaft excavation records and report any unusual observation to the engineer within 8 hours of discovery. Submit a draft of this form for each completed drilled shaft within 24 hours of shaft completion and submit the final form within 2 weeks. Submit relevant information on a daily basis, or more frequently when variations occur, or as otherwise required by the engineer.

Report the drilled shaft construction progress in accordance to "Records and Forms" Drilled Shafts: Publication No. FHWA – GEC 010, Section 15.4 and Appendix E, pages E-1 through E-16.

C.3.7 Placement of Reinforcing Steel Cage

Prior to placement of the reinforcing steel and concrete, if slurry fluid was employed during the installation of the drilled shaft, test the slurry for compliance with this specification as described in the QMP Drilled Shafts special provision. Slurry Tests shall be performed along the shaft and at the bottom of the shaft. Adjust the slurry properties as necessary to meet the specifications.

Prior to placement of the reinforcing steel and concrete, ensure that the C.3.6.6 cleanliness requirements are met.

Place steel reinforcement precisely in the position the plans show and hold firmly during the concrete placing and setting by using spacer strips, stays, or other engineer-approved devices or supports.

Concrete or non-corrosive spacers shall be used at sufficient intervals not exceeding 10 feet along the reinforcement cage or the steel core. A minimum of 4 spacers shall be spaced evenly around the circumference of any shaft with a maximum space around the shaft circumference of 30 inches between any spacer (i.e. at any given level a 59.06-inch diameter shaft shall have 7 spacers). The first spacers shall be placed 1.5 feet from the bottom of the shaft with successive spacers at maximum intervals of 10 feet along the shaft. Spacers shall be of an appropriate diameter wheel to provide minimum clearance shown on the plans between the shaft excavation walls and the steel reinforcement.

C.3.8 CSL Access Tube Installation

Drilled shafts must be fitted with CSL test tubes to evaluate their integrity as shown on the plans.

Install the access tubes or pipes as nearly parallel and far as possible from the longitudinal bars. The number of tubes to be installed per each drilled shaft diameter is as indicated in the table below:

Drilled Shaft Diameter	Number of CSL Tubes	Tube Spacing
34.65-inches	4 minimum	As shown in plans
59.06-inches	6 minimum	As shown in plans

Securely attach the tubes to the interior of the reinforcement cage with a minimum concrete cover of three inches. The tubes may be attached to the exterior of the cage when accepted by the engineer, provided the minimum cover requirement of 3-inches over the tubes shall be maintained. In all cases, the tubes shall be as near to vertical and parallel as possible.

Extend the tubes from the bottom of the drilled shaft to at least 3-feet above the top of the drilled shaft, or 2-feet above the ground surface for shafts with cut-off below the ground surface. The tubes must be watertight and capped to prevent concrete or debris from entering during manipulation of the cage and concreting. Care must be taken during lifting and lowering the steel reinforcement so as not to damage the tubes. Fill the CSL tubes with potable water prior to concrete placement. For production shafts and upon completion of the CSL tests and acceptance of drilled shaft, remove all the water from the access tubes or drilled holes and fill them with an approved grout.

C.3.9 TIP Wire Installation

Drilled shafts must be fitted with TIP wires to evaluate their integrity as shown on the plans. Install wires and provide other accessories described in bid item Thermal Integrity Profiler (TIP) Testing, Drilled Foundation Shaft 34.65-Inch and Thermal Integrity Profiler (TIP) Testing, Drilled Foundation Shaft 59.06-Inch included in these special provisions.

C.3.10 Concrete Placement

C.3.10.1 General

Do not prime pump within the drilled shaft. Place concrete continuously once concrete placement is started. No intermediate construction or cold joints are permitted within a single drilled foundation shaft.

Test the concrete delivered to the job site for compliance with the QMP Drilled Shafts special provisions, the standard specifications and these special provisions. Record the actual volume of concrete placed against the theoretical volume vs depth at depth intervals not exceeding the shaft diameter.

C.3.10.2 Concrete Placement Time

Ensure excavation inspection occurs no later than 24 hours after excavation is complete. Place concrete within three hours after excavation inspection and approval unless otherwise directed by the engineer. If the concrete is not placed within this time frame, the excavation must be re-inspected and accepted by the engineer, prior to concrete placement.

C.3.10.3 Concrete Placement by Free Fall

Concrete placement within drilled shafts by free fall is not permitted.

C.3.10.4 Concrete Placement by Tremie Pipes

Use tremie pipes to place the concrete inside the excavation. Keep the discharge end of the tremie a minimum of 7-feet below the level of the fresh concrete already placed inside the excavation to maintain a seal. The concrete shall flow into position by pressure through a steel tremie with a minimum diameter of 10-inches. Seal the bottom of the tremie using one way flap valve, before it is lowered into the wet excavation. If water/slurry enters the tremie pipe after concrete pouring has started, the tremie must be withdrawn, cleaned, resealed, and pouring restarted. If for some reason, the tremie is raised out of the fluid concrete or the concrete inside the drilled shaft drops down contaminating the tremie, completely remove and clean the tremie, then replace the seal at the bottom of the tremie and lower the tremie back as far below as possible into the already placed concrete.

C.3.10.5 Concrete Placement by Concrete Pumps

Concrete pumps and concrete lines can be used to place concrete in drilled shafts rapidly or to deliver the concrete from a distant location. However, due to the need to disassemble the pump line to allow the removal of casing sections and potential air pockets, disruption in concrete flow, the concrete pump placement directly within the shaft is not permitted on this project. The pump must discharge the concrete into a minimum 10-inch diameter steel tremie with a bottom one-way flap valve.

All pump lines and connections shall be watertight and must guide the concrete to the discharge point at the center of the rebar cage or steel core and drilled shaft excavation. The pump line may be flexible; however, inside the shaft use a minimum 10-inch diameter steel tremie pipe that can deliver the concrete in an uninterrupted manner. Keep the bottom of the tremie or discharge orifice 7-feet below the surface of fluid concrete already placed to avoid sudden jumping of the pump line out of the excavation. Concreting shall continue until over pouring is evident at the top of the drilled shaft and until dark gray concrete (acceptable concrete) can be distinguished from the drilling fluid.

C.3.10.6 Casting Level

Over pour concrete above the top of shaft cut-off level to ensure that all concrete at and below cut-off level is homogeneous and free of laitance and deleterious materials. Account for room and access requirements when cut-off level is below grade to adequately perform this task and protect adjacent ground from caving in.

C.3.11 Construction Tolerances for Individual Shafts

Drilled foundation shaft excavations or completed drilled foundation shafts constructed out of the tolerance will not be accepted. The contractor is responsible for correcting to the satisfaction of the engineer all unacceptable work. Materials, construction, work, engineering analysis, and redesign necessary to complete corrections to out-of-tolerance excavations or completed drilled shafts shall be furnished to the department without either cost or time extension for the project. Comply with the following construction tolerances:

- a. The final, as constructed position of the drilled shaft shall be within a maximum of 2 inches in any direction from the theoretical position shown on the plans, unless otherwise permitted by the engineer prior to construction.
- b. The vertical alignment of the drilled shaft excavation shall not vary by more than 1/16 inch per foot from plumb vertical.
- c. The diameter of the installed drilled shaft shall not be less than the diameter of the drilled shaft shown on the plans. Any conflicts due to a casing that is greater in diameter than the plan shaft diameter shall be remedied by the contractor. No additional compensation or schedule time shall be granted to the contractor for resolving any conflicts due to oversized casings. Employ equipment and methods of excavation to complete the drilled shaft excavation to a planar bottom, and the cutting edges of the equipment used during the excavation shall be normal to equipment's vertical axis within a tolerance of 3/8-inch per foot. The bottom of the drilled shaft excavation shall be normal to the axis of the drilled shaft within 3/4 inch per foot.
- d. Tolerances outlined in sections a. to c. herein shall be checked and finally met by the contractor prior to placement of the reinforced rebar cage or steel core inside the shaft hole. Ensure the drilled shaft casing avoids conflicting with the reinforced rebar cage in adjacent shafts by ensuring that the provisions of C.3.10.b are never violated. If these provisions are violated, rectify the shaft in accordance with subsection C.3.12.
- f. After the concrete is poured, the top elevation of the installed drilled shaft shall be within 1-inch of the top elevation of the corresponding drilled shaft on the plans, and the top of the reinforcing steel cage shall be within the positional tolerance shown on the plans. The center of the reinforcing cage shall be the center of the drilled shaft.

C.3.12 Non Destructive Testing Program

Perform CSL and TIP testing as specified elsewhere in the special provisions, and as directed by the engineer.

C.3.13 Acceptance for Constructed Drilled Shafts

C.3.13.1 General

Any drilled foundation shafts that are not constructed and installed in accordance to these special provisions will be rejected by the engineer. Rejected shafts shall be replaced or rectified by the contractor using methods and procedures subject to the acceptance of the engineer before beginning replacement or rectification. If required to rectify rejected shafts, shaft replacement, shaft repair, or the cost of constructing additional shafts, will be at no additional cost to the department and no additional time will be added to the contract.

In the event that a shaft or shafts are rejected, work on remaining drilled shafts in the contract cannot continue until the contractor re-visits and re-submits a revised drilled shaft installation plan and the revised plan is accepted by the engineer. The revised plan must address any construction issues that resulted in or contributed to the reason(s) for which the deficient shaft(s) were rejected. No additional time will be added to the contract for the time required to revise and accept the revised drilled shaft installation plan.

C.3.13.2 Based on Specifications

The department will only accept drilled foundation shafts that conform to these special provisions. Drilled foundation shafts and related work constructed in any manner that disregards any specified requirement will not be accepted. This includes:

- a. Drilled foundation shaft excavations constructed and / or reinforcing steel cage placement out-of-tolerance, as specified in this specification. When repair to an out-of-tolerance shaft is possible as determined by the engineer, fix the drilled shaft to meet the tolerances before the contractor is permitted to proceed further with any drilled shaft construction. All repairs must be acceptable to the engineer before the contractor may resume the drilled shaft work.
- b. Excavation of a drilled foundation shaft with slurry not conforming to the QMP Drilled Shafts special provision.
- c. Drilled foundation shafts exhibiting cuttings from slurry at the drilled shaft bottom; showing soft, incomplete, or unclear bottoms; or presenting side sloughing and sedimentation at the bottom.
- d. Drilled foundation shafts with honeycomb intrusions or concrete in which the fines have been washed out or water channels in concrete.

- e. Horizontal discontinuity or necking in the drilled foundation shaft concrete.
- f. Quarter-moon-shaped soil intrusions on the sides of a drilled foundation shaft.
- g. Folded-in debris inside a drilled foundation shaft.
- h. Drilled foundation shafts for which the mix design has been altered without the acceptance of the engineer, including the unauthorized addition of water to a mix design to bring it to a certain slump.
- i. Drilled foundation shafts constructed in a manner where concrete placement has failed to meet the required time requirements, placement tolerances, or the methods of installation did not have the engineer's acceptance.
- j. Drilled foundation shafts constructed with concrete not meeting the minimum 28-day compressive strength requirement shown on the plans.

C.3.13.3 Based on the CSL or TIP Tests

Reports for the various tests performed elsewhere in the special provisions will be reviewed by the engineer. If the reports indicate significant anomalies or defects, the engineer will direct the contractor to core the shaft(s) at the location(s) of the defect or anomaly. The coring shall be a minimum of NX sized double tube core barrel. The engineer will determine the number of cores, length(s), location(s), and testing methodology. If the coring or core sample testing results confirm the presence of significant anomalies or defects, the drilled shaft will be determined to be unacceptable and rejected by the engineer. Upon rejection of the shaft(s), submit a remedial action plan to the engineer for correcting the rejected work. The remedial action plan shall include detailed shaft repair or replacement procedures if necessary and will be subject to acceptance by the engineer. Any modifications to the drilled shaft, load transfer mechanisms, and elements affected by the proposed remedial actions will require calculations and working drawings and shall be made and stamped by a professional engineer, registered in the state of Wisconsin.

In the event that the engineer directs the contractor to core through the concrete and the coring and associated core sample tests confirm the presence of anomalies or defects, the cost of coring, hole closure, core sample tests, and all labor and materials to perform the accepted remedial actions shall be provided at no additional cost to the department and with no extension of the contract time originally granted.

In the event that the engineer directs the contractor to core through the concrete and the core or core sample tests do not confirm the presence of anomalies or defects, the cost of the coring, hole closure and associated testing shall be borne by the department.

Frequent defects as determined by the engineer will result in a re-evaluation of the contractor's installation procedure and, depending on the frequency and type of defect, the engineer may require the contractor to change or modify his procedure.

D Measurement

The department will measure Drilled Foundation Shaft (diameter) of individual shafts by the linear foot, acceptably completed. Longer shafts, larger shaft diameters, additional excavation, and additional concrete placed beyond the limits of the plan dimensions will not be measured for payment unless authorized and agreed to in advance of placement by the engineer.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.4100	Drilled Foundation Shaft 34.65-Inch	LF
SPV.0090.4110	Drilled Foundation Shaft 59.06-Inch	LF

Payment is full compensation for preparing all submittals, including the Drilled Foundation Shaft Installation Plan; rock core drilling; furnishing, installing, and removing full depth temporary casing, templates, placing and removing temporary working surfaces, drilling fluids, documentation, clearing or removal of surface obstructions, clearing or removal of known man-made or natural obstructions; drilling the shafts, handling and disposal of the excavated, augured and cored soils, and any drilling fluids; lifting and positioning the reinforcement steel cage, including any required wheel type spacers, boots, internal bracing of the reinforcement steel cage, and any other temporary lifting supports; furnishing and placing the concrete for the Drilled Foundation Shafts to the dimensions and elevations as shown on the plans,

including removal of over pour concrete; and furnishing, installing and closing the cross hole sonic logging tubes.

Reinforcement bars are measured and paid under the bid item Bar Steel Reinforcement HS Bridges.

Removal of unknown man-made subsurface obstructions for Drilled Foundation Shaft (diameter) will be measured and paid for separately under the bid item, Obstructions Drilled Foundation Shaft included in the contract.

207. Foundation Drilling, Item SPV.0090.4200.

A Description

Work under this item consists of drilling or otherwise excavating holes for the subsequent installation of soldier piles and construction of concrete masonry soldier pile footings. Perform work according to pertinent parts of the standard specifications, the plans, and these special provisions.

B (Vacant)

C Construction

C.1 General

The contractor is responsible for drilling or excavating and maintaining a stable open hole for subsequent installation of soldier piles and construction of concrete masonry soldier pile footings. The subsurface conditions vary across the project site and are not necessarily the same along the length of each retaining wall in the project. Anticipate the possibility of encountering randomly interlaced seams of loose, permeable sand or gravel of substantial thickness situated within glacial clays and till deposits; saturated soils; ground water; isolated cobbles or boulders; and nested cobbles and boulders at any concrete masonry soldier pile footing location when selecting equipment and methods for constructing the holes. Partial or full depth temporary casing, slurry or a combination thereof, shall be required to maintain the stability of the excavated drill hole prior to placement of the soldier pile in the hole and filling the hole with concrete.

The contractor is strongly advised to obtain and review the Geotechnical Exploration and Foundation Evaluation Reports for the applicable retaining wall structure for which concrete masonry soldier pile footings are being constructed. See article "Geotechnical Investigation Information" in these special provisions for information on obtaining geotechnical reports.

Perform all work according to the rules and regulations of the local, state, and federal governing authorities having jurisdiction over the project site.

C.2 Installation Plan Submittal

Determine the proper means, methods, and procedure for accomplishing the work as specified herein and on the plans. Submit the proposed method for foundation drilling before beginning construction. If slurry is proposed to be used for excavation stabilization, the submitted installation plan must include all details related to use of slurry including:

- Type: Include slurry manufacture literature and mixing instructions.
- Equipment: Storage /mixing tanks, containment vessels, pumps, mixers, hoses, valves.
- Operations: Slurry mixing, pumping, containment, and recovery procedures.
- Quality Control: Slurry quality control procedures and testing during construction.

C.3 Excavation

Bore or otherwise excavate holes to the diameter and depth as shown on the plans. If necessary, use temporary casing, slurry or alternative methods during drilling methods to maintain a stable open hole. Do not leave excavated, uncased holes open overnight prior to filling with concrete. If bentonite or equivalent slurry is used to maintain an open hole, prevent spillage of the slurry onto adjacent roadways or into adjacent waterways. Locate the soldier pile holes to within the following tolerances:

Horizontal Location	3 inch
Vertical Location	1 inch
Vertical Alignment	1/8 inch/ft
Hole Diameter	36 inch; -0 inch; +2 inch

Provide equipment for checking the dimensions and alignment of each shaft. Remove loose material from the bottom of the shaft. For holes drilled or excavated without slurry, no more than 3 inches of standing water is permitted in the bottom of the drilled hole prior to beginning soldier pile installation and immediately prior to placing concrete masonry in the hole around the soldier pile.

C.4 Obstructions

Obstructions are defined as man-made objects that when encountered, stop or significantly impede downward progress of the excavation to less than 12-inches for 60 minutes or longer using conventional excavation techniques or augers operating at normal power, torque and downward thrust. Obstructions include man-made objects and may include, but are not limited to old concrete foundations, piling, abandoned utilities or buried pavements. Obstructions are further classified as "known obstructions" which are identified on the plans, and "unknown obstructions" that may be encountered but are not identified on the plans.

Employ special tools and/or procedures as necessary when obstructions are encountered and the contractor cannot advance the excavation more than 12-inches in 60 minutes using conventional rock augers fitted with teeth, drilling buckets, or under reaming tools operating at normal power, torque, and down thrust. Clear the obstructions in such a manner so as not to compromise the sidewall integrity or stability of the drilled, open hole. Special procedures and tools that may be required include, but are not limited to, chisels, breakers, core barrels, air hammer tools, and hand excavation. Other methods for obstruction removal such as temporary casing or hole diameter increase can be employed to aid in the removal if acceptable to the engineer. Blasting is not permitted.

Natural deposits, including boulders, cobbles, nested cobbles and other deposits may be encountered that impede the excavation to less than 12-inches for 60 minutes or longer as noted above for obstructions. Natural deposits, regardless of makeup, depth, configuration, and consistency are not classified as obstructions as defined in this special provision or in the special provision Obstructions Foundation Drilling included in this contract.

D Measurement

The department will measure Foundation Drilling by the linear foot, acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.4200	Foundation Drilling	LF

Payment is full compensation for drilling foundations; for drilling or otherwise excavating holes, for coring rock, clearing natural and known man-made obstructions, disposal of all non-contaminated excavated material, and for furnishing temporary casings, slurry or alternative hole stabilization methods.

Removal of unknown man-made subsurface obstructions for Foundation Drilling Special will be measured and paid for separately under the bid item, "Obstructions Foundation Drilling" included in the contract.

Hauling and disposal of contaminated material will be measured and paid for separately under the bid items, "Excavation, Hauling, and Disposal of Petroleum Contaminated Soil", "Excavation, Hauling, and Reuse of Low-Level Petroleum Contaminated Soil", or "Management of Solid Waste – Greves St, West of 27th St" included in the contract.

208. Remove Existing Steel Piling, Item SPV.0090.4300.

A Description

This special provision describes removing existing steel piles that conflict with proposed new piling for substructures as shown on the plans.

B (Vacant)

C Construction

Remove any existing steel piling that conflicts with proposed piling locations and as shown on the contract plans. An existing steel pile conflicts with a proposed pile if it is within 2.5 proposed-pile diameters (center-to-center spacing) of a proposed pile.

One of the following methods of removing shall be used:

- a. Direct Pull: Remove the piling from the soil by pulling directly upward.
- b. Vibratory Excavation: Remove the piling by vibrating the piling loose and pulling the piling directly upward
- c. Contractor Proposed: If the contractor chooses to use an alternate method to remove the existing steel piling, the contractor shall provide the engineer with a written methodology for review and acceptance.

When an existing steel piling is found to conflict with the proposed location of a new piling, the contractor shall notify the engineer and receive written acceptance on the method of removal that was chosen prior to beginning any work to remove the steel piling.

Backfill any holes left by pile removal with Backfill Granular Grade 1 or 2 before driving the new piling.

D Measurement

The department will measure Remove Existing Steel Piling by the linear foot, acceptably completed. Measurement will be made along the vertical length of the steel piling removed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.4300	Remove Existing Steel Piling	LF

Payment for Remove Existing Steel Piling is full compensation for removing existing steel piling, backfilling and for disposing of all material removed. Any additional excavation necessary is included with the bid item Excavation for Structures.

(20220210)

209. 2-Duct Conduit Cement Encased 4-Inch Conduit DB-60, Item SPV.0090.5200; 4-Duct Conduit Cement Encased 4-Inch Conduit DB-60, Item SPV.0090.5201; 6-Duct Conduit Cement Encased 4-Inch Conduit DB-60, Item SPV.0090.5202; 2-Duct Conduit Cement Encased 3-Inch Conduit DB-60, Item SPV.0090.5203.

A Description

This work consists of furnishing and installing cement encased multiple duct conduit packages below grade in accordance to the applicable sections of the standard specifications, as shown on the plans and as hereinafter described.

B Materials

B.1 Conduit

The contractor shall furnish DB-60 polyvinyl chloride (PVC) conduit.

PVC conduit and fittings shall conform to the requirements of Standard Specifications for Smooth-Wall Poly (Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation, ASTM Designation: F512 (latest edition).

B.2 Conduit Spacers

Furnish and install nonmetallic interlocking base spacers and intermediate spacers that provide a 1-1/2" vertical and 1-1/2" horizontal separation between PVC pipes. The base spacers shall provide a 3" vertical separation from the trench bed to the bottom of the PVC pipes.

B.3 Conduit Bed

Furnish and install a minimum 2" conduit bed of stone chips or crushed stone screenings conforming to the following:

<u>3/8 Inch Crushed Stone Chips</u>	
Sieve Sizes	% Passing by Weight
1/2"	100
3/8"	90-100

No. 8	0-15
No. 30	0-3

<u>Crushed Stone Screenings</u>	
Sieve Sizes	% Passing by Weight
1/2"	100
No. 4	75-100
No. 100	10-25

B.4 Concrete

The type of concrete to be used to encase the ducts will be:

Type I or Type IL Cement	280 lbs
Fly Ash	100 lbs
Sharp Torpedo Sand	3100 lbs
Water	35 gals
Chryso Air 260 or approved equal	2.0 ozs
Chryso Plast 209 or approved equal	7.0 ozs
Air	5%

Mix the materials to prove and approximate 3 inch slump.

B.5 Slurry Backfill

Aggregate slurry backfill consists of No. 1 concrete aggregate Class 'C' concrete mix with the cement deleted.

Fly Ash (Class C)	75 lbs.
Concrete Sand (Damp)	1830 lbs.
No. 1 Concrete Aggregate	1830 lbs.

The material shall be mixed with water to inundate the aggregate sufficiently to provide an approximate 3 inch slump. The mix shall be deposited in the trench directly from a concrete transit mix truck.

B.6 Pull Rope

Pull rope specifications will be:

- Flat construction (7/16" to 5/8" wide)
- 100% woven aramid fiber (may include tracer wire)
- 1500 lbs. Minimum pull strength prelubricated
- sequential footage markings for location

B.7 Copper Wire

Furnish #10 copper wire meeting the standard specification for item 655.0615 Electrical Wire Lighting 10 AWG.

For any questions on materials, contact Ms. Karen Rogney at (414) 286-3243.

C Construction

C.1 Excavation

The excavation shall have the minimum or maximum dimensions shown on the plans and as follows:

No. of <u>Ducts Wide</u>	<u>Minimum</u>	<u>Maximum</u>
2	14 5/8"	17 1/8"
3	20 3/4"	23 1/4"
4	25 3/8"	27 7/8"

These minimum and maximum trench widths apply to standard 4 inch PVC electrical duct only. When required, the excavation may be widened for the handling and placing of materials.

Open-cut trenches shall be sheathed and braced as required by code and as necessary to maintain safety. The cost of furnishing, placing and removing of sheathing and bracing shall be included in the unit bid for the work.

The dimensions of the excavation will be governed by the number, configuration and the grade (cover) to

which the conduit is to be installed as shown on the plan. The walls of the excavation shall be clean and true.

Prior to excavating trenches, the contractor shall expose the existing manhole and conduit lines. The object of this is to permit adjustments in line and grade to avoid special construction methods. The exposed manhole and conduit shall be protected from damage.

The conduit shall be laid at a depth so that sufficient protection from damage is provided. Allowable covers shall be as follows:

The standard cover for mainline conduit is 39 inches and the minimum cover acceptable shall be 28 inches.

The standard cover shall be maintained wherever possible and any deviation less than the minimum may be allowed only with specific approval of the engineer.

The trench shall be graded so that it will have a minimum pitch of three inches per 100 feet. When an obstruction is encountered in the trench and it is necessary to excavate a deeper trench than would otherwise be required, in order to obtain drainage, refer the matter to the Inspector to determine whether the extra excavation should be made.

In grading a trench for mainline conduit, there are three general practices for direction of pitch.

(a) When grading a trench in a street with a level grade, the high point of the trench bottom should ordinarily be centered between manholes and pitched downward equally toward each manhole.

(b) Where the street slopes in one direction, locate the high point of the trench bottom approximately 30 feet from the end wall of the higher manhole and grade toward both manholes.

(c) Where a steep grade is encountered, grade the trench at the minimum pitch from the end wall of the higher manhole to a point 20 feet plus or minus toward the lower manhole. From this point, follow the street grade at the standard cover to a point 20 feet plus or minimum away from the end wall of the lower manhole. From this point, the remainder of the section shall be laid at the normal pitch.

After the rough excavation is completed, the bottom of the trench shall be prepared to receive the conduit. The duct bed shall be brought to the final grade and graded uniformly from the high point to the low or drainage points. Stone chips or limestone screenings shall be used for grading the trench.

C.2 Placing of Duct

Placing of the duct is to proceed as soon as the duct bed has been completed. All ducts shall be inspected before placing to see that the bores are clean and free from mud, sand, etc. Only ducts with a smooth bore, free from burrs, rough projections etc. shall be used. Where burrs or other rough areas likely to damage cable are found in the duct, they shall be smoothed off by rasping or scraping.

The duct shall be placed (as shown on the detail) with the ends staggered so no two couplings are adjacent. This may be accomplished by the use of the short lengths in stock or cutting back full length sections to the desired lengths. If cut pieces are used, the cut end shall be placed at the manhole.

Full length pieces shall be used for the balance of the conduit line.

Formations of two ducts or more in height are to be carried forward in full formation, that is, as each tier of twenty foot lengths is laid on base spacers, the next higher tier of ducts shall then be placed on the intermediate spacers. These spacers shall be two feet from each duct end and one in the middle. The intermediate spacers and ducts shall be placed for the remaining tiers. Each length shall be glued into the adjoining coupling. A twist and push on the duct being placed will suffice for a water tight joint. Caution must be exercised in the driving operation, so that neither the coupling nor duct will be split or damaged in any way. After the full formation has been completed, wood trench and duct bracing shall be placed on the ducts to prevent shifting or floating while the concrete envelope is being placed and during driving operation.

This procedure shall be followed with succeeding lengths, providing spacers (as shown on the detail) at the proper intervals, until sufficient trench footage of completed formation has been placed and is ready to receive concrete encasement.

The terminating point for mainline conduit will be the inside manhole wall, inside abutment wall, or inside wall of bridge house. A standard end bell fitting shall be installed on all duct access points into manholes.

A #10 copper tracer wire shall be installed along and above the centerline of the duct for encasement in the concrete. The wire shall be 2 feet longer than the run of conduit and extend beyond the end of the grout encasement.

Install a pull rope in each run of conduit, as laid. The rope shall be 4 feet longer than the run of conduit and

shall be doubled back at least 2 feet at each raceway access point. Anchor the pull rope at each access point in a manner acceptable to the engineer.

C.3 Concreting

After sufficient conduit has been laid and the trench and duct have been inspected, concreting is to begin. The minimum concrete encasement of the ducts shall be three (3) inches on the top, two (2) inches on the sides, and three (3) inches on the bottom (as shown on the detail).

After placing, the concrete shall be puddled with a splicing bar or similar tool so that complete duct encasement is accomplished. Wood braces used to keep the conduit from floating shall be removed before the concrete sets completely and the resultant encasement voids filled with concrete.

Allow the concrete encasement to set for a minimum of 6 hours before backfilling is commenced.

C.4 Slurry Backfill

The backfilling of the conduit shall commence immediately after the duct has been inspected, approved and has had sufficient time to set to withstand the load.

An aggregate slurry as specified shall be used to backfill all concrete encased conduit. The trench shall be slurry backfilled to the proposed or existing subgrade. The mix shall be deposited in the trench directly from a concrete transit mix truck.

C.5 Acceptance of Work

Notify Ms. Karen Rogney at (414) 286-3243 three working days in advance of completion for final acceptance of work performed. The contractor will receive no payment until the above work is approved by City Underground Conduit.

D Measurement

The department will measure Duct Conduit Cement Encased 4-Inch Conduit DB-60, by the linear foot acceptably installed. The linear feet of encased duct will be measured along the centerline of duct between ends of conduit.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.5200	2-Duct Conduit Cement Encased 4-Inch Conduit DB-60	LF
SPV.0090.5201	4-Duct Conduit Cement Encased 4-Inch Conduit DB-60	LF
SPV.0090.5202	6-Duct Conduit Cement Encased 4-Inch Conduit DB-60	LF
SPV.0090.5203	2-Duct Conduit Cement Encased 3-Inch Conduit DB-60	LF

Payment is full compensation for furnishing the conduit, conduit bodies, conduit fittings, conduit spacers, end caps, pull ropes and trace wires; for excavating, bedding, encasement and backfilling including any concrete, stone, aggregate slurry, bracing, or other related materials; for disposing of surplus materials; and for making inspections, for installing the conduit.

210. Conduit Subduct 1-Inch, Item SPV.0090.5210.

A Description

This special provision is to furnish and install 1-Inch conduit to be used as subduct for fiber optic cable installation.

B Material

Furnish 1-Inch PVC Carlon riser-gard with pull tape, Part number Carlon DF4X1C-2700 or an alternative approved by David Henke at the City of Milwaukee, (414) 286-5511.

C Construction

Install Conduit Subduct 1-Inch where shown on the plans within the communication conduit prior to fiber optic cable installation. Install the conduit as per the manufacturer's instructions.

D Measurement

The department will measure Conduit Subduct 1-Inch by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.5210	Conduit Subduct 1-Inch	LF

Payment is full compensation for furnishing and installing conduit subduct.

211. Furnish Municipal Fiber Optic Cable 288 Count, Item SPV.0090.5215.

A Description

This special provision is to furnish 288 – count fiber optic cable.

B Material

Furnish ALTOS Loose Tube, Gel-Free Cable 288 F, Single Mode (OS2) fiber optic cable or an alternative approved by David Henke at the City of Milwaukee, (414) 286-5511.

C (Vacant)

D Measurement

The department will measure Furnish Municipal Fiber Optic Cable 288 Count by the linear foot.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.5215	Furnish Municipal Fiber Optic Cable 288 Count	LF

Payment is full compensation for furnishing fiber optic cable. The department will pay for installation, splices, enclosures, and subduct separately.

212. Install Fiber Optic Cable Outdoor Plant 288-Ct, Item SPV.0090.5216.

A Description

This special provision is to install 288 count fiber optic cable.

B (Vacant)

C Construction

Install 288 count fiber optic cable in accordance with section 678.3.1 of the standard specifications.

D Measurement

The department will measure Install Fiber Optic Cable Outdoor Plant 288-Ct by the linear foot acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.5216	Install Fiber Optic Cable Outdoor Plant 288-Ct	LF

Payment is full compensation for installing existing and contractor furnished 288 count fiber optic cable. The department will pay for splices, enclosures, and subduct separately.

213. Removing Service Cable, Item SPV.0090.5217.

A Description

This special provision describes removing electric service cable from CUC and traffic signal conduit and disposing off the project site.

B (Vacant)

C Construction

De-energize cable and traffic signal at the intersection of W St Paul Ave and N 27th St prior to removing. Cable shall be removed from existing CUC and traffic signal conduits as shown on the plans and as directed by the engineer.

D Measurement

The department will measure Removing Service Cable by the linear feet of conduit from where the cable will be removed from and disposed of, acceptable completed. Cable slack shall be incidental to the pay item.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.5217	Removing Service Cable	LF

Payment is full compensation for removing service cable from existing CUC and traffic signal conduits and disposing off the project site.

214. Ductile Iron (DI) AWWA C-151 Class 55 Water Main 6-Inch, Item SPV.0090.5000; Ductile Iron (DI) AWWA C-151 Class 55 Water Main 12-Inch, Item SPV.0090.5001.

A Description

This work includes providing and installing ductile iron water main at locations indicated in the plans, conforming to the Standard Specifications for Sewer and Water Construction in Wisconsin, latest edition and as hereinafter provided.

B Materials

B.1 General

Ductile iron (DI) piping shall be according to AWWA C150, Class 55. Design pipe joint ends for rubber push-on gasket joints, conforming to AWWA C111. All materials shall be manufactured in the USA.

Cast in or stamp on pipe manufacturer's mark, year of production, and "DI" or "DUCTILE."

Pipe shall be cement mortar lined and have internal and external bituminous coats.

Tracer wire shall be included on all water main installation.

B.2 Fittings

Fittings shall conform to AWWA C110, centrifugally cast in metal or sand-lined molds.

Use of compact fittings conforming to AWWA C153 is acceptable. In no case shall fitting grade rating be less than adjoining pipe. Fittings shall be from same manufacturer as pipe.

Nuts and bolts for joints and fittings shall be corrosion resistant steel, NSS Technologies Inc. or Cor-Blue.

B.3 Polyethylene Sheeting for Pipe Corrosion Protection

Polyethylene sheeting conforming to ASTM D4976, Type I, Class B, color black, Grade E-1, 1200 psi tensile strength, minimum thickness of 8 mil. Tube diameter or sheet width shall conform to AWWA C105. Double wrap all water main and fittings.

Furnish tape for polyethylene sheeting that is 2-inch wide, black tape with rubber adhesive and minimum 9 mil polyethylene backing. Tape shall be 3M™ Preservation Sealing Tape 481 or Scapa Sealing Tape No. 136.

B.4 Trench Insulation

Extruded polystyrene board conforming to ASTM C578, Type V, rigid, closed cell type, with integral high density skin, Dow Chemical Company STYROFOAM™ Highload 100 or Owens Corning Foamular 1000.

Thermal Resistance: Typical 5 year aged value of R-5 per inch of thickness per ASTM C518.

Board Size: 24 x 96 x 2-inch thick. Square edges. Compressive Strength: Minimum 100 psi per ASTM D1621.

Water Absorption: 0.7 percent by volume maximum per ASTM D2842.

All bedding, cover and backfill materials shall meet City of Milwaukee Standards and be approved by the City of Milwaukee.

C Construction

C.1 General

According to Wisconsin Statute 182.0175, "Damage to Transmission Facilities," Excavator, as defined in 182.0175(1)(bm), shall be solely responsible to provide advance notice to "Diggers Hotline, Inc." (800) 242-8511 not less than three working days prior to commencement of any Excavation, as defined in the statute, required to perform work contained in this Project, and further, Excavator shall comply with all other requirements of this Statute relative to Excavation.

Before beginning excavation of trench, contractor shall uncover stub end of existing water main to which relay is to connect, to permit adjustments in line and grade and verify connection required.

C.2 Installation of Ductile Iron Pipe

Join pipe and fittings by means of a compression type rubber gasket push-on joints conforming with AWWA C111.

Excavation and backfill for buried pipe shall conform to the Standard Specifications for Sewer and Water.

Remove lumpy subsoil, boulders, and rock. If rock is encountered, remove to provide a clearance of at least 12 inches below and on each side of pipe, valves, and fittings.

Lay and maintain water mains to lines and grades established in the plans with fittings, valves, and hydrants at required locations.

Trench preparation shall proceed in advance of pipe installation only as far as can be backfilled in the same day.

Contractor shall not deviate from types of excavation indicated in the plans without prior concurrence of engineer except in case of roadways, driveways, and obstructions that may be indicated in the plans as open trench sections.

Place and shape bedding material to pipe, to a minimum depth of three inches under bell and four inches under spigot and compact to 95 percent modified proctor density.

Lower water main, fittings, valves, and hydrants carefully into trench, by means of derrick, ropes, or other suitable tools or equipment, to prevent damage to water main materials and protect coatings and linings.

Lay pipe with bell ends facing direction of laying. When grade exceeds 2 feet of rise per 100 feet of trench, bells shall face upgrade.

Provide holes for bells at each joint but no larger than necessary for joint assembly and assurance that pipe barrel will lie flat on trench bedding.

Trench bedding shall be true and even in order to provide support for full length of pipe barrel, except a slight depression may be provided to allow withdrawal of pipe slings or other lifting tackle.

If pipe laying crew cannot put pipe into trench and in place without getting earth into it, engineer may require placing, before lowering pipe into trench, a heavy, tightly woven, canvas bag of suitable size over each end of pipe and leaving there until connected to adjacent pipe.

Do not place debris, tools, clothing, or other materials in pipe during laying operations. Assemble joint and bring pipe to correct line and grade as each length of pipe is placed in trench.

Take precautions to prevent foreign materials from entering joint space and carefully check joint recess for foreign material before installing gasket.

Remove lumps of clay, mud, cinders, and similar materials that may have accumulated on surface of pipe during storage or laying and encase pipe in polyethylene sheeting according to AWWA C105.

Secure pipe in place with bedding material, placed by hand or equally careful means, keeping bell end open. Remove pipe and fittings that do not allow sufficient and uniform space for joints and replace with pipe and fittings of proper dimensions to ensure such uniform space.

Upon daily and temporary completion of pipe installation, close open ends of pipe by a water-tight plug or other means approved by engineer. This provision applies during daytime inactivity as well as overnight.

If water is in trench, maintain pipe seal in place until water level is lowered 4 inches below pipe invert.

Whenever it becomes necessary to lay a main over, under, or around a known obstruction, contractor shall furnish and install required fittings. Laying of such fittings will be paid for at linear foot price for each size of main. No additional compensation will be paid to contractor for any expenses incurred because of such obstruction.

When an unknown underground structure interferes with work to such an extent that an alteration of the plans is required and alteration results in a change in cost to contractor, engineer will issue a written order for such altered work, specifying basis of payment or credit for such altered work.

Keep interior and exterior of pipe clean and free from foreign material before installation. Provide necessary means to wipe, brush, swab, or air blast to remove any foreign material from interior of pipe as instructed by pipe manufacturer and as directed by engineer.

Provide and place approved bedding sand and cover under and above water service to depths indicated in the plans. Provide and install crushed concrete backfill to depths indicated. Compact bedding sand and cover, and crushed concrete backfill to 95% modified proctor density.

C.3 Water Main Pressure Testing

Pressure Testing:

After pipe has been laid, subject newly laid pipe or any valved section thereof to a hydrostatic pressure of at least 1.5 times working pressure at point of testing.

Tests pressures shall:

- Not exceed pipe or thrust restraint design pressures.
- Be of at least 2-hour duration.
- Not vary by more than plus or minus 5 psi for duration of test.
- Not exceed twice rated pressure of valves or hydrants when pressure boundary of test section includes closed gate valves or hydrants. NOTE: Do not operate valves in either direction at differential pressure exceeding rated pressure.
- Not exceed rated pressure of valves when pressure boundary of test section included closed, resilient seated gate valves or butterfly valves.

Slowly fill each valved section of pipe and apply specified test pressure, based on elevation of lowest point of line or section under test and corrected to elevation of test gage, by means of a pump connected to pipe acceptable to engineer.

Do not operate valves in either opening or closing direction at differential pressures above rated pressure.

Before applying specified test pressure, completely expel air from section of pipe under test.

If permanent air vents are not located at all high points, contractor shall install corporation cocks at such points to expel air as line is filled with water.

After all air has been expelled, close corporation cocks and apply test pressure. At conclusion of pressure test, remove corporation cocks and plug or leave in place at discretion of City of Milwaukee.

Carefully examine exposed pipe, fittings, valves, hydrants, and joints during test.

Repair or replace any damaged or defective pipe, fittings, valves, or hydrants that are discovered following pressure test with sound material, and repeat test until it is satisfactory to City of Milwaukee.

C.4 Leakage Testing

Leakage test may be conducted concurrently with pressure test.

Leakage shall be defined as quantity of water that must be supplied into newly laid pipe, or any valved section thereof, to maintain pressure within 5 psi of specified test pressure after air in pipeline has been expelled and pipe has been filled with water. Leakage shall not be measured by a drop in pressure in a test section over a period of time.

No pipe installation will be accepted if leakage is greater than that determined by the following formula:

$$L = SD \text{ times Square Root of } P, \text{ divided by } 133,200$$

Where L is allowable leakage in gallons per hour; S is length of pipe tested in linear feet; D is nominal diameter of pipe in inches; and P is average test pressure during leakage test in pounds per square inch gage.

When hydrants are in test section, test shall be made against main valve in hydrant. Acceptance shall be determined on basis of allowable leakage. If any test of laid pipe discloses leakage greater than that specified, contractor shall, at its own expense, locate and make repairs or replacement.

C.5 Flushing and Disinfection

Place calcium hypochlorite at upstream end of first section of pipe, at upstream end of each branch main, in first pipe section past valve, in hydrant leads, and at a minimum 500 foot interval in main.

Place the following amounts of calcium hypochlorite granules at beginning of main and at each 500-foot interval:

Pipe Diameter (Inches)	Calcium Hypochlorite Granules (Ounces)
4	0.5
6	1.0
8	2.0
12	4.0
16 and larger	8.0

Contractor may use tablets if prior approval is obtained from engineer. Procedure shall be as follows:

- Place one 5-gram calcium hypochlorite tablet in each hydrant, hydrant branch, and other appurtenance.
- Place 5-gram calcium hypochlorite tablets according to the following table in each section of pipe.

Pipe Diameter (Inches)	Length of Pipe Section (feet)				
	<13	18	20	30	40
4	1	1	1	1	1
6	1	1	1	2	2
8	1	2	2	3	4
10	2	3	3	4	5
12	3	4	4	6	7
16	4	6	7	10	13
24	6	7	10	13	16

Based on 3.25 grams available chlorine per tablet, any portion of tablet rounded to next higher integer.

Attach tablets to inside and top at each end of newly installed pipe with an NSF 61 approved adhesive.

Do not apply adhesive to tablet except on broad side to be attached to surface of pipe.

If tablets are attached before pipe section is placed in trench, mark their position on section so it can be readily determined that pipe is installed with tablets at top.

When installation is completed, fill main with water at a rate such that water within main will flow at a velocity no greater than one foot per second.

Contractor shall separately meter and pay for water for filling and initial flushing of main.

Contractor shall provide labor and material necessary to transfer water from source to main to be tested. Only local City of Milwaukee Water Works employees shall operate valves.

Water shall enter main and be tested at low point in system to force entrapped air out at high end through an available hydrant or air release valve.

Close upper end hydrant or valve after air is expelled and chlorinated water discharge is present. Take precautions to assure that entrapped air is eliminated.

Water shall remain in pipe for at least 24 hours or as defined by regulatory requirements. If water temperature is less than 40 degrees F, water shall remain in pipe for at least 48 hours.

Position valves so that strong chlorine solution in main being treated will not flow into water mains in active service.

Water from new mains must successfully pass bacteriological test according to requirements of Wisconsin Department of Natural Resources.

Properly and securely brace and maintain excavation until successful testing, flushing, chlorinating, and sampling of main is completed.

Contractor shall be responsible for protecting any required excavation by means of proper barricades and lanterns during sampling and testing period.

Provide access to main for sampling as directed by engineer. Water Utility will take necessary samples of water and obtain laboratory tests of samples.

D Measurement

The department will measure Ductile Iron (DI), AWWA C-151, Class 55 Water Main 6 or 12-inch, by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.5000	Ductile Iron (DI) AWWA C-151 Class 55 Water Main 6-Inch	LF
SPV.0090.5001	Ductile Iron (DI) AWWA C-151 Class 55 Water Main 12-Inch	LF

Payment is full compensation for furnishing all materials; fittings, joint restraint, corrosion protection, insulation, pressure testing, flushing and disinfection, concrete buttresses, shoring, temporary piling, traffic control, dewatering, and for excavating, backfilling, and compaction.

215. Drain Slotted Vane Permanent, Item SPV.0090.8002.

A Description

This special provision describes providing Drain Slotted Vane Permanent as the plans show conforming to standard spec 611, standard detail drawing "Slotted Vane Drain" and as modified in this special provision.

B (Vacant)

C Construction

Before encasing the pipe in concrete, cover the upper end of the slotted drain as the plans show, or as approved by the engineer.

Before construction operations adjacent to the slotted area of the slotted vane drain pipe, cover the slots on the top of the drain. Remove any material entering the pipe at the contractor's expense.

Exercise care to avoid damage to the slotted vane drainpipe. If any section of pipe is damaged or is unsatisfactory as determined by the engineer, replace the drainpipe at contractor's expense.

D Measurement

The department will measure Drain Slotted Vane Permanent by the linear foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.8002	Drain Slotted Vane Permanent	LF

Payment is full compensation for furnishing all materials; hauling and placing the pipe; making connections to existing inlets; furnishing concrete masonry, end plug or cap; cleaning out and restoring site of work, removal and disposing of waste material, and all incidentals to complete the work.

216. Timber Lagging, Item SPV.0110.4000.

A Description

Work under this item consists of furnishing, delivering, and installing all timber lagging for soldier pile and lagging walls. Perform work according to pertinent parts of the standard specifications, the plans, and these special provisions.

B Materials

Use materials that conform to lumber as specified in standard spec 507 except that preservative treatments according to standard spec 507.2.2.6 are not required and untreated lumber may be used. Use Douglas fir or Southern pine construction grade rough-cut lumber with a minimum thickness of 3-inches. Where necessary provide certification that the timber conforms to the grade, species, and other specified requirements.

C Construction

Place timber lagging from the top-down in sufficiently small lifts immediately after excavation to prevent erosion of materials into excavation. Before placing lagging, smooth the soil face to create a contact surface for the lagging. Backfill and compact large voids behind the lagging. Maintain a minimal gap between each vertically adjacent board for drainage between adjacent lagging sections. Never place lagging in tight contact to adjacent lagging.

D Measurement

The department will not measure Timber Lagging by the 1000-foot board measure, 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.0110.4000	Timber Lagging	MBM

Payment is full compensation for Timber Lagging; for furnishing, framing, installing, and the timber lagging.

217. Vibration Monitoring, Item SPV.0135.0301.

A Description

This special provision describes developing a vibration monitoring plan, deploying seismographs for continuous monitoring and recording, and submittal of required documentation.

The contractor shall conduct and document a crack and damage survey of any buildings or structures identified in the crack and damage survey special provision of this contract prior to performing any vibration monitoring. The contractor is responsible for arranging with the property owner the right of entry to their property, to install, maintain, and remove vibration monitoring equipment.

Any damage resulting from excessive vibration due to the contractor's operations or claims of damage during construction is the responsibility of the contractor to resolve.

B Equipment

Use seismographs meeting the requirements of Wisconsin Department of Safety and Professional Services (SPS)307.43, Wisconsin Administrative Code, that are continuous data recorders supplied with all accessories for making vibration observations.

C Construction

C.1 General

Vibration Monitoring shall be performed if a building/structure is located within 200 feet of a vibration-inducing construction operation. Establish recordings at the closest location affected by the vibration-inducing construction operation by placing seismograph(s) on a stable surface within 3 feet of the building/structure.

C.2 Monitoring Plan

Submit a monitoring plan that includes the following:

- Location of each vibration-inducing construction operation to be monitored
- Locations at which the approved seismographs will be placed
- Anticipated vibration levels at the closest building(s) or other sensitive facility during the various activities
- Anticipated monitoring duration for each monitoring location
- A recommended maximum safe peak particle velocity threshold
- Mitigation plan to reduce potentially excessive vibration levels to acceptable limits.

Obtain the engineer's acceptance of the monitoring plan prior to performing any vibration-inducing construction operation on the project.

C.3 Monitoring and Recording

Conduct monitoring procedures conforming to SPS 307.44 and as follows: Take seismograph readings before construction operations to establish an ambient or background index. Place seismographs to monitor all vibration-inducing construction operations per the accepted monitoring plan.

Monitor the following construction operations for their entire duration:

- Bridge demolition
- Bridge and sign bridge pile driving
- Sheet pile installation and removal
- Drilled Shaft installation
- MSE wall compaction
- All compaction activities utilizing large vibratory rollers
- Any other activities that may cause vibration damage to adjacent buildings, structures, or utilities.

If construction operations exceed the maximum peak particle velocity limits as established in the contractor's monitoring plan, according to SPS 304.7, stop the construction operation in progress and notify the engineer. Implement alternate construction methods to produce results within the allowable peak particle velocity limits.

C.4 Reporting

Furnish a monthly report of data recorded to the engineer.

Include the following in the report:

- Date vibration monitoring operations began for each location with an associated compilation of total days currently monitored at each site
- Identification of vibration inducing construction operations monitored each day at each location
- Serial number of vibration monitoring instrument used and record of latest calibration
- Description of contractor's equipment
- Name of observer and interpreter
- Distance and direction of recording station from vibration source
- Surficial material type at recording station
- Principal frequency and particle velocity in each component direction
- Copy of records of seismograph readings
- Contractor documentation of any operational changes necessary to reduce vibration below nuisance levels

D Measurement

The department will measure Vibration Monitoring acceptably completed by calendar month when active vibration monitoring is occurring.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0135.0301	Vibration Monitoring	MON

Payment of the item Vibration Monitoring is full compensation for coordination with property owners, for providing, setting up and removal of all seismographs according to the accepted monitoring plan, providing the vibration monitoring plan including any monthly updates, performing continuous monitoring and recording of vibrations, and for providing the monthly reports and all other required documentation.

218. Tactile Directional Indicators, Item SPV.0165.0400.

A Description

This special provision describes providing and constructing tactile directional indicators in concrete sidewalk.

B Materials

Furnish wet-set, replaceable, cast iron tactile directional indicator plates from Advantage Tactile, a Division of SureWerx, Elgin, IL, 60123 (844-697-2920), www.advantagetactile.com, or Neenah Foundry, Neenah, WI 54956 (920-725-7000), www.groupnei.com, or approved equal, conforming to the following requirements.

- Gray cast iron, ASTM A48, Class 30 minimum
- Uncoated natural patina
- Size 12" wide x 12" long, or 12" wide x 24" long
- Raised elongated bar spacing 3.0", bar length 10.75"
- ISO 23599 compliant
- Integral anchors

Castings shall be sound, free from pouring faults, cracks, blowholes and other defects.

Furnish wedge tiles or radial tiles for use in curves, conforming to manufacturer requirements.

Submit manufacturer's literature describing products, installation procedures, and routine maintenance to the engineer. Submit shop drawings to the engineer prior to procuring the tiles.

Submit one sample tile that shows bar size and spacing to the engineer. Submit complete test reports to qualify that materials proposed for use are in compliance with requirements and meet or exceed the properties indicated in the specifications.

Manufacturer's Warranty: The tiles shall be warranted in writing for a period of ten (10) years from date of substantial completion. The warranty shall include factory defects, breakage, and deformation.

C Construction

Coordinate with the engineer and tile manufacturer so that the surfaces being prepared and fabricated to receive the plates are constructed correctly and adequately for plate installation. Review manufacturer drawings and instructions with the engineer prior to the construction.

Embed (wet-set) tactile directional indicators in plastic concrete in accordance with manufacturer-recommended procedures. Do not install on hardened concrete. Stringline or use other engineer-approved methods to install the tiles in straight lines or arcs. The top level of the plate, not including the raised elongated bars, is to be flush with the adjacent concrete.

Do not field cut plates except as allowed by the manufacturer. Smooth the edges of filed cuts.

Anchor the tiles per manufacturer instructions.

D Measurement

The department will measure Tactile Directional Indicators by the square foot acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.0400	Tactile Directional Indicators	SF

Payment is full compensation for providing and installing tactile directional indicators of the specified configuration and color, including hardware and anchoring.

The underlying concrete sidewalk will be paid separately under contract bid items.

219. High Friction Traffic Marking Green Bike Lane Panel, Item SPV.0165.0401.

A Description

The Contractor shall furnish and install white methyl methacrylate (MMA) resin with hardwearing aggregate and premium pigments to deliver a durable, highly visible and color stable bike lane panel that meets the non-slip requirements needed for pedestrians, cyclists and vehicles at the locations shown on the plans, in conformance with the details, and the material specifications included herein.

B Materials

The methyl methacrylate material shall be a two-part material. The composition is 98 parts of Component "A", homogeneously composed of pigment, filler, resins and anti-skid aggregate, and 2 parts of Component "B", liquid hardener. Part "B" shall be a benzoyl peroxide catalyst.

Use Color-Safe Pavement Marking with Anti-Skid Surface by Transpo Industries, CycleGrip MAXX by Ennis-Flint, or Roadzilla or an approved equal. Color "bike lane green" or approved equivalent. Use an MMA based resin system capable of retaining an aggregate topping under vehicular traffic conditions. Install Methyl Methacrylate (MMA) Two-Component Traffic Markings in accordance with manufactures specifications and these special provisions.

The material shall comply to the following:

Property	Value	Test Method
Tensile Strength @ 7 days, psi, minimum	400	ASTM D 638
Hardness, Shore D, minimum	50	ASTM D 2240
Gel Time, minutes, minimum	10	ASTM D 2471
Cure Rate, hours, maximum	3	Film @ 75 degrees F
Water Absorption @ 24 hours, maximum	0.25% CELL	ASTM D 570

Aggregate: The aggregate shall be high friction crushed Bauxite, No. 1 Silica, or Phonolite or equivalent. Deliver the aggregate to the construction site in clearly labeled bags or sacks. The aggregate shall be clean, dry and free from foreign matter. Aggregate shall meet the following requirements:

Property	Value	Test Method
Hardness, minimum	7	Mohs Scale

Submittal: Submit certificates of compliance certifying that the products supplied under the contract conform to these specifications. Submit Application Instructions a minimum 72 hours prior to application.

C Construction

General: Install Methyl Methacrylate (MMA) Two-Component Traffic Marking green bike lane panels in accordance with manufactures specifications.

Preparation: Prepare surfaces so that they are clean, dry, and free of all dust, oil, debris and any other material that might interfere with the bond between the MMA based resin system and existing surfaces.

Contaminates that might interfere with the proper adhesion of the material must be removed by sandblasting or shotblasting. The surface should be visibly dry, and the moisture content should be tested according to ASTM D4263 (modified to 2 hours). Concrete must be fully cured for a minimum of 28 days prior to installation. Surface contaminants such as curing agents, membranes, bond breakers or laitance shall not be mechanically removed prior to marking.

Protect utilities, drainage structures, curbs and any other structure within or adjacent to the treatment location against the application of the surface treatment materials. Cover and protect all existing pavement markings that are adjacent to the application surfaces as directed by the Engineer.

Pre-treat joints greater than ¼ inches in width and depth with the MMA resin system specified herein or by using an alternative procedure proposed by the manufacturer and agreed upon by the Engineer. Proceed with the MMA resin system installation once the product, in the pre-treated areas, has gelled or once the alternative procedure has been accomplished.

Mix: MMA traffic marking is made up of three components (resin, hardener, and aggregate) that must be mixed thoroughly for uniform curing and performance. Liquid components must be homogeneously stirred in the original containers before mixing components A and the liquid BPO concentrate catalyst, called Part B. Thoroughly mix by weight, 2 parts of the liquid hardener (Part B) with 98 parts of Component A. Mixing must be done by using a static mix tube or impingement system just prior to spray gun application on the job site.

Temperature: Material, pavement surface and ambient air temperature must be between 40° F and 105° F, and at least 5° F above dew point prior to striping. Relative humidity must be less than 75%. Installing the materials on surfaces above 105° F can lead to improper cure and dirt pickup. Surface and ambient temperatures should be checked hourly at a minimum if weather conditions cause temperatures to fluctuate during the course of the striping operation. Please note that drying time will be increased when striping at low temperatures. Both the Part A and B must be mixed thoroughly prior to application by any of the various application techniques.

Mixing and Application: Follow the MMA resin technical data sheet for application details. This material should be readily applied to Portland cement concrete and HMA surfaces sprayed at a thickness of 45 mils, and no greater than 50 mils.

Curing: Allow the MMA based resin system to cure in accordance with manufacturer recommendations. Protect treated surfaces from traffic and environmental effects until the area has cured.

PERFORMANCE REQUIREMENTS

The following guidelines shall be followed to ensure total understanding of what is expected in the application of any permanent pavement marking material on new pavement surfaces.

The pavement marking shall be uniform thickness across the entire cross section of the marking with well-defined edges. Heavy inner thickness and thin edges or vice-versa will not be accepted. Aggregate shall be spread uniformly over the entire marking. Beginning and ends of markings shall be clean cut and perpendicular to the centerline of the street.

Remove and replace methyl methacrylate that has foreign covering, discolored areas, improper adhesion, improper width, length, or thickness as verified by the Engineer against the plans or this special provision. Remove and replace areas that present a ragged appearance, areas that do not present clear and sharply defined edges, and areas with abrupt unintended changes in alignment. Remove excessive dripping of marking material between markings and remove and replace any marking applied with a lack or excess of aggregate. Remove, to the satisfaction of the Engineer, all pavement marking applied outside the scope or limits of this project. Removal and replacement of unsatisfactory pavement marking will be at the Contractor's expense. The replaced Colored White surface treatment shall meet the requirements of this sub-article.

Remove and replace Colored White surface treatment that ravel, delaminates, or wears off within 90 days after placement, unless approved to remain in place by the Engineer. The limits of removal and replacement shall be approved by the Engineer.

Lack of specified thickness: The full unit price bid per unit (each) shall be withheld if lack of thickness is found at each bike lane arrow or symbol. Each bike lane arrow or symbol marking shall be checked a minimum of one time.

Lack of specified width: Payment shall be made with penalty being equal to 25% of the unit price bid per each for each ¼ inch of width lacking not to exceed 100% of the unit price bid.

Improper adhesion: The full unit price bid per item shall be withheld for each occurrence if improper adhesion is found.

Deviation: A marking that in the judgment of the Engineer deviates from the specified layout by an unreasonable amount shall be replaced. The Contractor shall be responsible for removal of the deviated marking material/repair of the pavement as designated by, and to the satisfaction of, the Engineer at no additional compensation.

Excessive Dripping between Symbols: The full unit price bid item shall be penalized for the length of any open space between symbols that is not removed to the satisfaction of the Engineer before leaving the project site that workday. Penalty shall be imposed upon the first occurrence and every occurrence thereafter.

Warranty: The MMA based resin system material shall be installed per plans and manufacturer specification. The Engineer will notify the Contractor within 48 hours of installation regarding any of the MMA based resin system material not installed per specification or to the satisfaction of the Engineer. Non-conforming MMA based resin system material shall be removed at no charge to WisDOT and replaced with conforming product.

The warranty period in reference to the following points is to be 1 year from date of installation. Warranty of the following items shall be submitted in writing by the Contractor or his installer prior to the pre-construction meeting.

- The MMA based resin system material will maintain its original color in the surface area throughout the 'warranty period' with the exception of natural weathering, tire and dirt deposits and abnormal markings applied after installation.
- Friction will achieve a minimum BPN of 60 in accordance with ASTM E-303
- The MMA based resin system material will maintain its skid resistance qualities in 100% of its surface area to never fall below a BPN of 60 during the 'warranty period'
- With the exception of structural cracking or excessive movement of the surface beneath, the MMA based resin system will not be subject to excessive cracking in its surface

D Measurement

The department will measure High Friction Traffic Marking Green Bike Lane Panel by the SF acceptably completed. No deduction will be made for the areas occupied by manholes, inlets, drainage structures, pavement markings or by any public utility appurtenances within the area.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.0401	High Friction Traffic Marking Green Bike Lane Panel	SF

Payment is full compensation for furnishing and installing all materials including any re-application or repair required under the Performance Requirements and Warranty as provided herein.

220. Wall Modular Block Gravity Landscape, Item SPV.0165.0410.

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system according to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the wall and all wall components shall be 75 years minimum.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Modular Block Gravity Landscape Wall systems. Proprietary wall systems must conform to the requirements of this specification and be preapproved for use by the department's Bureau of Structures. The department maintains a list of preapproved proprietary wall systems. See the approved products list titled "Proprietary Retaining Wall System Vendors." The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The department also maintains a separate list of

plants pre-approved by the department to provide wall facing units. See the approved products list titled "Precast Concrete and Block Fabricators." The identity of the plant manufacturing the facing units shall be furnished to the engineer at least 14 days prior to the project delivery.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section at the following email address: DOTDLStructuresFabrication@dot.wi.gov.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design confirms to design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit shop drawings to the engineer conforming to standard spec 105.2 with electronic submittal to the fabrication library under standard spec 105.2.2. Certify that shop drawings conform to quality control standards by submitting department form DT2329 with each set of shop drawings. Department review does not relieve the contractor from responsibility for errors or omissions on shop drawings. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11-inch x 17 inch, including borders.

Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11-inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer.

Walls shall be designed for a minimum live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as shown on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratio (CDR) for sliding, eccentricity, and bearing checks is provided by the department and are provided on the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. Internal stability shall also be considered at each block level. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. The width of the modular block (front face to back face) shall be included in the design computations and shown on the wall shop drawings. Blocks must have a minimum width of 8 inches. Block widths may vary among courses but shall consist of only a single block. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software program used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

Wall facing units shall be designed according to AASHTO LRFD 11.10.2.3.

The minimum embedment of the wall shall be 1 foot 6 inches below finished grade, or as given on the plans. All walls shall be provided with a concrete or base aggregate leveling pad. Minimum wall embedment does not include the leveling pad depth. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad.

Wall facing units shall be installed on a concrete leveling pad or base aggregate leveling pad. The bottom row of blocks shall be horizontal and 100% of the block surface shall bear on the leveling pad.

Concrete leveling pads shall be as wide as the proposed blocks plus 6 inches, with 6 inches of the leveling pad extending beyond the front face of the blocks. The minimum thickness of the leveling pad shall be 6-inches.

Base aggregate leveling pads shall be as wide as the blocks plus 12 inches, and the modular blocks shall be centered on the leveling pad. The minimum thickness of the leveling pad shall be 12-inches after compaction. The leveling pad shall be made from base aggregate dense 1 1/4-inch in conformance with standard spec 305.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Wall Facing

Wall facing units shall consist of precast modular concrete blocks. Furnish concrete produced by a dry-cast or wet-cast process. Concrete for all blocks shall not contain less than 565 pounds of cementitious materials per cubic yard. The contractor may use cement conforming to standard spec 501.2.1 or may substitute for Portland cement at the time of batching conforming to standard spec 501.2.6 for fly, 501.2.7 for slag, or 501.2.8 for other pozzolans. In either case the maximum total supplementary cementitious content is limited to 30% of the total cementitious content by weight.

Dry-cast concrete blocks shall be manufactured according to ASTM C1372 and this specification.

All units shall incorporate a mechanism or devices that develop a mechanical connection between vertical block layers. Units that are broken, have cracks wider than 0.02" and longer than 25% of the nominal height of the unit, chips larger than 1", have excessive efflorescence, or are otherwise deemed unacceptable by the engineer, shall not be used within the wall. A single block front face style shall be used throughout each wall. The color and surface texture of the block shall be as given on the plan.

The top course of facing units shall be as noted on the plans, either:

- Solid precast concrete unit designed to be compatible with the remainder of the wall. The finishing course shall be bonded to the underlying facing units with a durable, high strength, flexible adhesive compound compatible with the block material.
- A formed cast-in-place concrete cap. A cap of this type shall have texture, color, and appearance, as noted on the plans. The vertical dimension of the cap shall not be less than 3 1/2 inches. Expansion joints shall be placed in the cap at a maximum spacing of 20 feet unless noted otherwise on the plan. Use Grade A, A-FA, A-S, A-T, A-IS, A-IP or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard spec 716, Class II Concrete.

Block dimensions may vary no more than $\pm 1/8$ inch from the standard values published by the manufacturer. Blocks must have a minimum width (front face to back face) of 8 inches. The minimum front face thickness of blocks shall be 4 inches measured perpendicular from the front face to inside voids greater than 4 square inches. The minimum allowed thickness of any other portions of the block is $1\frac{3}{4}$ inches. The front face of the blocks shall conform to plan requirements for color, texture, or patterns.

If pins are used to align modular block facing units, they shall consist of a non-degrading polymer, or hot dipping galvanized steel and be made for the express use with the modular block units supplied, to develop mechanical interlock between facing unit block layers. Connecting pins shall be capable of holding the wall in the proper position during backfilling. Furnish documentation that establishes and substantiates the design life of such devices.

All block materials shall be furnished palletted and banded, with every pallet marked for quantity, lot number, lot size, manufacturing plant, and manufacturing date(s). Materials furnished loose or unmarked will be rejected. Rejected materials shall be removed from the project at no cost to the department.

B.3.1.1 Material Testing

Provide independent quality verification testing of project materials according to the following requirements:

Test	Method	Requirement	
		Dry-cast	Wet-cast
Compressive Strength (psi)	ASTM C140 or ASTM C39 ^[4]	5000 min.	4000 min.
Air Content (%)	AASHTO T152 ^[4]	N/A	6.0 +/-1.5
Water Absorption (%)	ASTM C140 ^[3]	6 max.	N/A
Freeze-Thaw Loss (%) 40 cycles, 5 of 5 samples 50 cycles, 4 of 5 samples	ASTM C1262 ^{[1][2][3]}	1.0 max. 1.5 max.	N/A

^[1] Test shall be run using a 3% saline solution and blocks greater than 45 days old.

^[2] Test results that meet either of the listed requirements for Freeze-Thaw Loss are acceptable.

^[3] An independent testing laboratory shall control and conduct all sampling and testing under ASTM C140/Water Absorption and ASTM C1262. Prior to sampling, the manufacturer shall identify materials by lot. Five blocks per lot shall be randomly selected for testing. Solid blocks used as a finishing or top course shall not be selected. The selected blocks shall remain under the control of the person who conducted the sampling until shipped or delivered to the testing laboratory.

^[4] The manufacturer may perform their own quality control testing under ASTM C140/Compressive Strength, ASTM C39, and AASHTO T152, if qualified for this work under the requirements for plant certification.

The contractor and fabricator shall coordinate with the independent testing agency (if used) to ensure that strength and air content samples can be taken appropriately during manufacturing. At the time of delivery of materials, furnish the engineer a certified report of test from an AASHTO-registered or ASTM-accredited independent testing laboratory for each lot.

The certified test report shall include the following:

- Project ID
- Production process used (dry-cast or wet-cast)
- Name and location of testing facility
- Name of sampling technician
- Lot number, lot size, and date(s) of fabrication

Quality control test of project materials shall be completed not more than 18 months prior to delivery. Lot size shall not exceed the maximum testing frequencies, which shall not exceed 5000 blocks for dry-cast blocks and the lesser of 150 CY or 1 day's production for wet-cast blocks. Test results will represent all blocks within the lot. Each pallet of blocks delivered shall bear lot identification information. Block lots that do not meet the requirements of this specification or blocks without supporting reports will be rejected and shall be removed from the project at no expense to the department.

Nonconforming materials will be subject to evaluation according to standard spec 106.5.

B.3.2 Leveling Pad

Provide an unreinforced cast-in-place concrete or base aggregate leveling pad. Use Grade A concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad

concrete as specified in standard spec 716, Class III Concrete. Use Base Aggregate Dense 1 1/4-Inch conforming to standard spec 305.

The minimum width of the concrete leveling pad shall be as wide as the proposed blocks plus 6-inches, with 6-inches of the leveling pad extending beyond the front face of the blocks. The minimum thickness of the leveling pad shall be 6-inches.

The minimum width of the base aggregate leveling pad shall be as wide as the proposed blocks plus 12-inches, and the modular blocks centered on the leveling pad. The minimum thickness of the leveling pad shall be 12-inches after compaction.

B.3.3 Backfill

Furnish and place backfill for the wall as shown on the plans and as hereinafter provided.

Wall Backfill, Type A, shall comply with the requirements for Coarse Aggregate Size No. 1 as given in standard spec 501.2.7.4.2. All backfill placed within a zone from the top of the leveling pad to the top of the final layer of wall facing units and within 1 foot behind the back face of the wall shall be Wall Backfill, Type A. This includes all material used to fill openings in the wall facing units.

A layer of Geotextile Type "DF" (Schedule B) shall be placed vertically between the backfill and the Type A backfill. The geotextile shall extend from the top of the leveling pad to 6 inches below the surface of the retained soil. The geotextile shall then wrap across the top of the Type A backfill to the back of block wall facing.

Backfill placed between retained soil and Type A backfill shall comply with the requirements for Granular Backfill Grade 1 as contained in standard spec 209.2.2. The contractor may substitute Type A Backfill for Granular Backfill Grade 1.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the wall and the leveling pad shall be according to standard spec 206. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction. Backfilling shall closely follow erection of each course of wall facing units.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facing units or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back face of modular blocks. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing units.

C.2 Compaction

Compact wall backfill Type A with at least three passes of lightweight manually operated compaction equipment acceptable to the engineer.

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the modular blocks.

C.3 Wall Components

C.3.1 General

Erect wall facing units and other associated elements according to the wall manufacturer's construction guide and to the lines, elevations, batter, and tolerances as shown on the plans. Center the initial layer of facing units on the leveling pad; then level them and properly align them. Fill formed voids or openings in the facing units with wall backfill, Type A. Remove all debris on the top of each layer of facing units, before placing the next layer of facing units.

Install all pins, rods, clips, or other devices used to develop mechanical interlock between facing unit layers according to the manufacturer's directions.

C.3.2 Leveling Pad

Provide an unreinforced cast-in-place concrete or base aggregate leveling pad as shown on the plans. Vertical tolerances shall not exceed 3/4-inch when measured along a 10-foot straight edge. Allow the concrete to set at least 12 hours prior to placing wall facing units.

The bottom row of wall facing panels shall be horizontal and 100% of the unit surface shall bear on the leveling pad.

C.4 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan.

D Measurement

The department will measure Wall Modular Block Gravity Landscape by the square foot, acceptably completed. The department will compute the measured quantity from the theoretical pay limits the contract plans show. The department will make no allowance for wall area constructed above or below the theoretical pay limits. All work beyond the theoretical pay limits is incidental to the cost of work. The department will make no allowance for as-built quantities.

E Payment

The department will pay for accepted measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.0410	Wall Modular Block Gravity Landscape	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system including cap, copings, leveling pad, and leveling pad steps; constructing the retaining system and providing temporary drainage; providing backfill, backfilling, compacting, developing/completing/documenting the quality management program, performing compaction testing, geotextile, underdrain and making connections to new or existing storm structures..

The department will pay separately for railings, and other items above the wall cap or coping.

221. Geocomposite Drain Board, Item SPV.0165.4000.

A Description

This special provision describes supplying and installing prefabricated geocomposite drain board as indicated on the plans. Perform work according to pertinent provisions of the standard specifications, the plans, and as hereinafter provided.

B Materials

Use materials that conform to the following:

Physical Properties	Test Method	Value
Thickness		0.25 inch
Flow capacity, (at 3600 psi with I = 1)	ASTM D 4716 (mod)	9 gpm/ft
Geotextile tensile strength	ASTM D 4632	100 lb
Compressive strength	ASTM D 1621 (mod)	10,000 lbs/SF
Mullen burst	ASTM D 3786	Min. 200 lb
Apparent opening size	ASTM D 4751	70
Flow rate	ASTM D 4491	Min 140 gpm/SF

C Construction

Handle the prefabricated geocomposite drainage board in such a manner as to ensure the geocomposite is not damaged in any way. Take care during the placement of the geocomposite not to entrap dirt or excessive dust in the geocomposite that could cause clogging of the drainage system. Deliver, store, and handle the geocomposite according to manufacturer's recommendations. Place and secure geocomposite against the

retaining wall back face as indicated on the plans with the fabric facing outward towards the backfill. Make seams and overlaps between adjacent boards according to the manufacturer's recommendations and specifications.

D Measurement

The department will measure Geocomposite Drain Board in area by the square foot, acceptably completed. The department will not pay for repairs to the geocomposite and will not pay for overlap of drain elements.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.4000	Geocomposite Drain Board	SF

Payment is full compensation for furnishing, installing, and trimming all materials; and for furnishing all equipment, fasteners, and incidentals necessary to complete the contract work.

222. Temporary Wall Wire Faced Mechanically Stabilized Earth LFCF R-40-767, Item SPV.0165.4100.

A Description

This special provision describes designing, furnishing materials and erecting a temporary earth retention system according to the lines, dimension, elevations and details as shown on the plans and provided in the contract.

This special provision describes using Lightweight Foamed Concrete Fill (LFCF) for the MSE wall backfill in lieu of the engineered granular backfill typically specified for MSE walls. Place LFCF to the limits shown in the plans. Engineered granular backfill is required as designated and shown on the plans in the wall transition zones where the MSE wall backfill transitions from LFCF to conventional engineered granular backfill.

This special provision describes the quality management program (QMP) for MSE walls. A quality management program is defined as all activities, including process control, inspection, sampling and testing, and necessary adjustments in the process that are related to the construction of the MSE wall, which meets all the requirements of this provision.

This special provision describes contractor quality control (QC) sampling and testing for LFCF cast density and compressive strength and granular backfill density testing, documenting those results, and documenting related production and placement process changes. This special provision also describes department quality verification (QV), independent assurance (IA), and dispute resolution.

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures. The contractor may obtain the CMM from the department's web site at:

<http://roadwaystandards.dot.wi.gov/standards/cmm/index.htm>

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Temporary Wire Faced Mechanically Stabilized Earth Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit electronically to the engineer and Bureau of Structures for review and acceptance. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the plans.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as stated on the plans.

Use LFCF as MSE backfill within the limits shown on the plans. The design of the wall and reinforced backfill zone behind this wall is to be based on an equivalent backfill area of assumed granular backfill with a maximum angle of internal friction of 30 degrees and unit weight density equal to the unit weight density of the LFCF backfill. All design and geometric requirements specified by AASHTO and hereinafter for MSE walls with granular backfill, including minimum length of MSE reinforcement will apply to this wall backfilled with LFCF material in lieu of the granular backfill.

An external stability check at critical wall stations showing Capacity Demand Ratios (CDR) for sliding, eccentricity, and bearing checks is performed by the department and are provided in the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and panel-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

The wall facings shall be designed according to AASHTO 11.10.2.3. A fine metallic screen and a geotextile shall be used at the front face of the wall to retain the fines of the soil mass.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 8 feet. The soil reinforcement shall be the same length from the bottom to the top of the wall. All soil reinforcement layers shall be connected to wire facing panels. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be 24 inches. The uppermost layer of the reinforcement shall be located between 6 inches

and 12 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

The nominal long term design strength to be used in steel reinforcement and connector design shall consider the corrosion losses and based upon conditions at the end of the design life, , as described in Chapter 14 of the WisDOT LRFD Bridge Manual and AASHTO LRFD Section 11.

Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. Unless approved by the Bureau of Structures cutting or altering of the basic structural section of either the strip or grid at the site is prohibited, a minimum clearance of 3" shall be maintained between any obstruction and reinforcement, and splicing steel reinforcement is not allowed.

The minimum embedment of the MSE wall shall be 1 foot 6 inches, or as given on the contract plan. Step the wall to follow the general slope of the ground line. Frost depth shall not be considered.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Steel Components

Provide steel reinforcement that meets the following requirements:

1. **Welded Wire Fabric Soil Reinforcement**

Provide shop fabricated welded wire reinforcement from cold drawn steel wire that has a yield stress of 65,000 psi and conforming to the minimum requirements of ASTM A1064 and be welded into the finished configuration according to ASTM A1064. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department.

2. **Steel Reinforcing Strips and Tie Strips**

As an alternate to welded wire reinforcing mesh, provide steel reinforcing strips or ladder reinforcing strips or equal, hot-rolled from bars, to the required shape and dimensions meeting the requirements of ASTM A572 Grade 65 minimum. Tie strips shall be shop fabricated of hot-rolled steel meeting the requirements of ASTM A1011 Grade 50.

3. **Welded Wire Fabric Facing Panels**

Provide welded wire fabric that is used to fabricate the facings of the wire-faced wall that has a yield stress of 65,000 psi. All steel shall be shop fabricated of cold drawn steel wire conforming to the minimum requirements of ASTM A1064 and be welded into the finished configuration according to ASTM A1064. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department.

4. **Fasteners**

High strength bolts meeting the requirements of AASHTO M164 or equivalent.

5. **Connector Pins and Mat Bars**

Connector pins and mat bars fabricated from cold drawn steel wire meeting the requirements of ASTM A82.

6. **Metallic Screen**

Provide a steel metallic screen. The metallic screen should have an approximate opening of 1/4" and be made of 0.025" (minimum) gauge wire.

B.3.2 Geotextile

Geotextile shall be used behind the metallic screen. Use geotextile as recommended by the wall manufacturer. If none is recommended, use Type DF (schedule B) as shown in standard spec 645 or as specified on the contract plans. Deliver in a protective wrap and keep protected from ultraviolet light until incorporated into the work.

B.3.3 Backfill

Furnish LFCF backfill for mechanically stabilized earth concrete panel walls LFCF as shown on the plans and as hereinafter provided. Provide LFCF material meeting the requirements specified in SPV Article Lightweight Foamed Concrete Fill Grade 1 and Lightweight Foamed Concrete Fill Grade 2 included in the contract.

C Construction

C.1 Excavation and Backfill

Excavation will encompass preparing the leveling pad foundation and the area below the reinforcing strips in accordance to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the leveling pad unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

C.2 LFCF Backfill

Submit an LFCF placement plan, trial batch test results, and quality assurance samples per C.1 of the SPV Article Lightweight Foamed Concrete Fill Grade 1 and Lightweight Foamed Concrete Fill Grade 2 included in the contract. Place LFCF backfill in accordance to the requirement specified in SPV Article Lightweight Foamed Concrete Fill Grade 1 and Lightweight Foamed Concrete Fill Grade 2 included in the contract.

C.3 Wall Components

C.3.1 General

Erect welded wire facing and other associated elements according to the wall manufacturer's construction guide. Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place remaining courses in vertical or battered positions as shown on the contract plans.

The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill. Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstruction in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

When using a temporary wall for four (4) months or more or when the installation of a permanent wall facing will not occur for four (4) months or more after placement of any geotextile material, cover the exposed geotextile material in the wall as quickly as practical, to prevent damage caused by exposure to ultraviolet light.

C.3.2 Tolerances

The overall vertical tolerance of the wall and the horizontal alignment tolerance shall not exceed 3 inches per 10 feet for permanent installations.

For battered wire facing, the final deviation from the design batter shall be within ± 1 inch for each 10 feet of battered wall height.

C.4 Quality Management Program

C.4.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform MSE wall construction work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review and acceptance. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.

3. A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Descriptions of stockpiling and hauling methods.
5. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
6. Location of the QC laboratory, retained sample storage, and other documentation.
7. A summary of the locations and calculated quantities to be tested under this provision.
8. A proposed sequencing plan of wall construction operations and random test locations.

C.4.2 Quality Control Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at the each grading site during all wall backfill placement, compaction, and nuclear testing activities. Have a HTCP Nuclear Density Technician I (NUCDENSITYTEC-I) or Assistant Certified Technician, Nuclear Density Gauge Operator (ACT-NUC) perform field density and field moisture content testing.

If an Assistant Certified Technician (ACT) is performing sampling or testing, a certified technician must coordinate and take responsibility for the work an ACT performs. Have a certified technician ensure that all sampling and testing is performed correctly, analyze test results, and post resulting data. No more than one ACT can work under a single certified technician.

C.4.3 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at:

<https://wisconsin.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx>

Ensure that the nuclear gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to AASHTO T310 and CMM 8-15 for density testing and gauge monitoring methods.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department's split samples to the department.

C.4.4 Documentation

- (1) Document all observations, inspection records, and process adjustments daily. Submit test results to the department's project materials coordinator on the same day they become available.
- (2) Use forms provided in CMM Chapter 8. Note other information in a permanent field record and as a part of process control documentation enumerated in the contractor's quality control plan. Enter QC data and backfill material certified report results into the applicable materials reporting system (MRS) software within 5 business days after results are available.
- (3) Submit final testing records and other documentation to the engineer electronically within 10 business days after all contract-required information becomes available. The engineer may allow submission of scanned copies of hand-written documentation.

C.4.5 Quality Control (QC) Testing

C4.5.1 LFCF Backfill

C.4.5.1.1 Cast Density of Field Installed LFCF

Test cast density in accordance to ASTM C 796

1. Prior to placement of the initial batch, the installer shall check the density and adjust the mix as required to obtain the manufacturer's specified cast density at point of placement.

2. At hourly intervals during placement, monitor the density and adjust as necessary to maintain the specified cast density.

C.4.5.1.2 Strength Testing

Conduct strength testing in accordance to ASTM C 796 except do not oven dry the test specimens.

1. Furnish a sufficient quantity of molded and cured cylinders measuring 3-inches in diameter by 6-inches high for required strength tests. Provide molds, and a similar curing environment of the LFCF being tested. Prepare cylinders in accordance to ASTM C1064.
2. Provide certified strength test results to the engineer for acceptance. At a minimum, conduct a set of three (3) strength tests at 1, 2, and 28 day intervals for each 500 cubic yards of LFCF placed and a minimum of two sets of four cylinders each per day.
3. Perform the compressive strength testing at a department qualified laboratory meeting the requirements of C.5 in SPV Article Lightweight Foamed Concrete Fill Grade 1 and Lightweight Foamed Concrete Fill Grade 2 included in the contract.

C.4.6 Department Testing

C.4.6.1 General

- (1) The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all QV and IA personnel for the project, and provide test results to the contractor within 2 business days after the department obtains the sample.

C.4.6.2 Quality Verification (QV) Testing

- (1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.4.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.
- (2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.
- (3) The department will obtain LFCF material for cast density and compressive strength tests at random intervals independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.
- (4) The department will conduct cast density, QV Proctor and gradation tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.
- (5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.6.3 Independent Assurance (IA)

- (1) Independent assurance is unbiased testing the department performs to evaluate the department's QV and the contractor's QC sampling and testing, including personnel qualifications, procedures, and equipment. The department will perform an IA review according to the department's independent assurance program. That review may include one or more of the following:
 1. Split sample testing.
 2. Proficiency sample testing.
 3. Witnessing sampling and testing.
 4. Test equipment calibration checks.
 5. Reviewing required worksheets and control charts.
 6. Requesting that testing personnel perform additional sampling and testing.

- (2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.6.4.

C.4.6.4 Dispute Resolution

- (1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E178 to evaluate potential statistically outlying data.
- (2) Production test results, and results from other process control testing, may be considered when resolving a dispute.
- (3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product or work, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C.5 Dampproofing

Apply dampproofing conforming to standard spec 516 to the final horizontal and vertical surfaces of the LFCF material at locations designated on the plans.

C.6 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils Engineer two working days to review the foundation.

D Measurement

The department will measure the Temporary Wall Wire Faced Mechanically Stabilized Earth LFCF 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 wall from the front face ground line of the wall to the retained grade. Temporary Walls used for staged construction in multiple configurations will be measured once based on the configuration with the largest area of exposed face.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.4100	Temporary Wall Wire Faced Mechanically Stabilized Earth LFCF R-40-767	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system, constructing the retaining system including drainage system; providing and placing LFCF, developing/completing/documenting the quality management program, performing compaction testing; covering geotextile, and for furnishing all tools, labor, equipment, and incidentals necessary to complete the contract work.

Payment limit for all walls is the line of minimum embedment per section B.2. No payment will be made for additional embedment detailed for construction purposes.

Parapets, railings, vehicle barriers and its support, abutment bodies and other items above the wall will be paid for separately. Concrete facings, facing leveling pads or footings, and copings will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price for those items.

SPV.0165.4005 (20190917)

**223. Wall Concrete Panel Mechanically Stabilized Earth LFCF R-40-761, Item SPV.0165.4761;
Wall Concrete Panel Mechanically Stabilized Earth LFCF R-40-767, Item SPV.0165.4767.**

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system in accordance to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the mechanically stabilized earth (MSE) wall and all wall components shall be 75 years minimum.

This special provision describes using Lightweight Foamed Concrete Fill (LFCF) for the MSE wall backfill in lieu of the engineered granular backfill typically specified for MSE walls. Place LFCF to the limits shown in the plans. Engineered granular backfill is required as designated and shown on the plans in the wall transition zones where the MSE wall backfill transitions from LFCF to conventional engineered granular backfill.

This special provision describes the quality management program (QMP) for MSE walls. A quality management program is defined as all activities, including process control, inspection, sampling and testing, and necessary adjustments in the process that are related to the construction of the MSE wall, which meets all the requirements of this provision.

This special provision describes contractor quality control (QC) sampling and testing for LFCF cast density and compressive strength and granular backfill density testing, documenting those results, and documenting related production and placement process changes. This special provision also describes department quality verification (QV), independent assurance (IA), and dispute resolution.

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures. The contractor may obtain the CMM from the department's web site at:

<http://roadwaystandards.dot.wi.gov/standards/cmm/index.htm>

B Materials

B.1 Proprietary Mechanically Stabilized Earth Concrete Panel Wall Systems

The supplied wall system must be from the department's approved list of Concrete Panel Mechanically Stabilized Earth Wall systems (Concrete Panel MSE Walls).

Proprietary wall systems may be used for this work but must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures, Structures Design Section. The department maintains a list of pre-approved Concrete Panel Mechanically Stabilized Earth Wall systems. To be eligible for use on this project, a system must have been pre-approved and added to that list prior to the bid opening date. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The location of the plant manufacturing the concrete panels shall be furnished to the engineer at least 14 days prior to the start of panel production.

To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision. Applications for pre-approval may be submitted at any time. Applications must be prepared in accordance to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Structures Design Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to supply a design and supporting documentation as required by this special provision, for review by the department, to show the proposed wall design is in compliance with the design specifications. Four copies of the following shall be submitted to the engineer for review and acceptance no later than 60 days from the date of notification to proceed with the project.

The plans and shop drawings shall be prepared on reproducible sheets 11-inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11-inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the Concrete Panel MSE wall shall be in compliance with the *AASHTO LRFD Bridge Design Specifications 9th Edition 2020*, (AASHTO LRFD) with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current *Standard Specifications for Highway and Structure Construction* (Standard Specifications), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined in accordance to Table 11.5.6-1 LRFD.

Design and construct the walls in accordance to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. Where walls or wall sections intersect with an included angle of 130 degrees or less, a vertical corner element separate from the standard panel face shall abut and interact with the opposing standard panels. The corner element shall have ground reinforcement connected specifically to that panel and shall be designed to preclude lateral spread of the intersecting panels. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the contract plans.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf in accordance to Chapter 14 of the WisDOT LRFD Bridge Manual or as stated on the plans.

Use LFCF as MSE backfill within the limits shown on the plans. The design of the wall and reinforced backfill zone behind this wall is to be based on an equivalent backfill area of assumed granular backfill with a maximum angle of internal friction of 30 degrees and unit weight density equal to the unit weight density of the LFCF backfill. All design and geometric requirements specified by AASHTO and hereinafter for MSE walls with granular backfill, including minimum length of MSE reinforcement will apply to this wall backfilled with LFCF material in lieu of the granular backfill.

A maximum value of the angle of internal friction used for design for the wall granular backfill placed in the wall transition zones shall be assumed to be 30 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratios (CDR) for sliding, eccentricity, and bearing checks is performed by the department and are provided on the wall plans.

The design of the Concrete Panel Mechanically Stabilized Earth wall by the contractor shall consider the internal and compound stability of the wall mass in accordance to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and panel-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits.

Facing panels shall meet the design requirements of AASHTO LRFD 11.10.2.3. The Facing panels shall also be designed to resist fluid pressures due to LFCF placement and compaction stresses that occur during the wall erection. The minimum thickness of the Facing panel shall be 5.5 inches. The surface area of a standard single panel cannot exceed 60 square feet. The maximum height of a standard panel shall be 5 feet. The top and bottom panels may exceed 5 foot in height based on site topography subject to the approval by the Structures Design Section. The design of the steel reinforcement within the panels shall be based on one-way bending action. Design the wall panels and joints between panels to accommodate a maximum differential settlement of 1 foot over a 100-foot length, unless the plans indicate other.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 times the wall height or as shown on the plan; whichever is greater. In no case shall this length be less than 8 feet. The soil reinforcement length shall be the same from the bottom to the top of the wall. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be 31 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 18 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

All soil reinforcement steel required for the reinforced soil zone shall be connected to the face panels. The reinforcement and the reinforcement/facing connection strength shall be designed to resist maximum factored reinforcement loads in accordance to AASHTO LRFD Section 11.10.6. Facing connection strength shall be defined as the resistance factor times the failure load, or the load at 0.5 inch deformation

times 0.9, whichever is less. The nominal long term design strength in steel reinforcement and connections shall be based upon assumed conditions at the end of the design life.

Soil reinforcement shall be prefabricated into single or multiple elements before galvanizing. Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. Cutting or altering of the basic structural section of either the strip or grid at the site is prohibited unless approved by the Structures Design Section. A minimum clearance of 3" shall be maintained between any obstruction and reinforcement unless otherwise approved by the Structures Design Section. Splicing steel reinforcement is not allowed, unless approved by the Structures Design Section.

MSE facing panels shall be installed on concrete leveling pads. The minimum cross section of the leveling pad shall be 6-inches deep by 1-foot wide. Potential depth of frost penetration at the wall location shall not be considered in designing the wall for depth of leveling pad.

Submit the following to the engineer for review: complete design calculations, explanatory notes, supporting materials, specifications, and detailed plans and shop drawings for the proposed wall system. Sample analyses and hand output shall be submitted to verify the output by the software. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal stabilities as defined in AASHTO LRFD.

The wall submittal package shall be submitted electronically to the engineer and Structures Design Section. Submit all required information no later than 30 days prior to beginning construction of the wall. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All certifications related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 General

The walls shall have modular precast concrete face panels produced by a wet cast process and have cast-in-place concrete pads or footings. The concrete panels shall have a minimum strength of 4000 psi at 28 days. The concrete for the panels shall be air entrained, with an air content of 6% +/- 1.5%. All materials for the concrete mixture for the panels shall meet the requirements of standard spec 501. The panel edges shall be configured so as to conceal the joints. The detail shall be a shiplap, tongue and groove or other detail adequate to prevent vandalism or ultraviolet light damage to the backside of the wall joint covering. Joints between panels shall be no more than 0.75 inch. Use full wall height slip joints at points of differential settlement when detailed on the plan. Horizontal joints must be provided with a compressible bearing material to prevent concrete to concrete contact.

A minimum of two bearing pads shall be used per panel. The allowable bearing stress shall not exceed 900 psi. The bearing pads shall be preformed EPDM rubber conforming to ASTM D-2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80, or high-density polyethylene pads with a minimum density of 0.034 lb/in³ in accordance to ASTM 1505.

An 18-inch-wide geotextile shall be used on the backface of the wall panels to cover all panel joints. The geotextile shall meet the physical requirements stated in standard spec 645.2.4 for Geotextile Fabric, Type DF, Schedule B, except that the grab tensile strength shall be a minimum of 180 pounds in both the machine and cross-machine directions. The geotextile shall be attached with a standard construction adhesive suitable for use on concrete surfaces and cold temperatures. The adhesive shall be applied to the panels, not to the geotextile.

All steel portions of the wall system exposed to earth or LFCF backfill shall be galvanized. All soil reinforcement and attachment devices shall be carefully inspected to ensure they are true size and free from defects that may impair the strength and durability.

For cast in place sections of cap and coping, use poured concrete masonry Grade A, A-FA, A-S, A-T, A-IS or A-IP concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard spec 716, Class II Concrete.

Use a wall leveling pad that consists of poured concrete masonry, Grade A, A-FA, A-S, A-T, A-IS or A-IP concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete.

The minimum embedment to the top of the leveling pad shall be 1 foot 6 inches or as given on the plan or given in AASHTO LRFD 11.10.2.2 whichever is greater. Step the leveling pad to follow the general slope of the ground line. The leveling pad's steps shall keep the bottom of the wall within one half the panel heights of the minimum embedment i.e. the minimum embedment plus up to one half the height of one panel. Additional embedment may be detailed by the contractor but will not be measured for payment.

B.3.2 Backfill

Furnish and place backfill for mechanically stabilized earth concrete panel walls as shown on the plans and as hereinafter provided.

B.3.2.1 LFCF Backfill

Furnish LFCF backfill for mechanically stabilized earth concrete panel walls LFCF as shown on the plans and as hereinafter provided. Provide LFCF material meeting the requirements specified in SPV Article Lightweight Foamed Concrete Fill Grade 1 and Lightweight Foamed Concrete Fill Grade 2 included in the contract.

C Construction

C.1 Excavation and Backfill

Excavation will encompass preparing the leveling pad foundation and the area below the reinforcing strips in accordance to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the leveling pad unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

C.2 Backfill

C.2.1 LFCF Backfill

Submit an LFCF placement plan, trial batch test results, and quality assurance samples per C.1 of the SPV Article Lightweight Foamed Concrete Fill Grade 1 and Lightweight Foamed Concrete Fill Grade 2 included in the contract. Place LFCF backfill in accordance to the requirement specified in SPV Article Lightweight Foamed Concrete Fill Grade 1 and Lightweight Foamed Concrete Fill Grade 2 included in the contract.

C.2.2 MSE Reinforcement

Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstructions in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

For embedment in LFCF backfill, place MSE reinforcement that will become embedded in the next lift of LFCF prior to placing the LFCF lift. Provide temporary supports to hold the MSE reinforcement a minimum of 4" above the previously placed LFCF backfill so that the MSE reinforcement becomes fully encapsulated in the subsequent LFCF lift placement. Provide adequate supports to hold the MSE reinforcement in an approximate horizontal position with no kinks, sharp bends or abrupt changes in direction in the reinforcement. Do not lay the MSE reinforcement directly on the top of the prior LFCF placement or otherwise locate the MSE reinforcement along cold joints between LFCF placements.

For embedment of MSE reinforcements in granular backfill, place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. The MSE reinforcement shall lay horizontally on the top of the most recently placed and compacted layer of MSE backfill.

C.3 Panel Tolerances

As backfill material is placed behind a panel, maintain the panel in its proper inclined position according to the supplier specifications and as approved by the engineer. The supplier shall specify the back batter so that the final position of the wall is vertical. Vertical tolerances and horizontal alignment tolerances shall not exceed $\frac{3}{4}$ -inch when measured along a 10-foot straight edge. The maximum allowable offset in any panel joint shall be $\frac{3}{4}$ -inch. The overall vertical tolerance of the wall (plumbness from top to bottom) shall not exceed $\frac{1}{2}$ -inch per 10 feet of wall height. Erect the precast face panels to ensure that they are located within 1 inch from the contract plan offset at any location to ensure proper wall location at the top of the wall. Provide a $\frac{3}{4}$ -inch joint separation between all adjacent face panels to prevent direct concrete-to-concrete contact. Maintain this gap by the use of bearing pads and/or alignment pins. Failure to meet this

tolerance shall cause the engineer to require the contractor to disassemble and re-erect the affected portions of the wall. In addition, imperfect molding, honeycombing, cracking or severe chipping of panels shall be cause of panel rejection.

C.4 Quality Management Program

C.4.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform MSE wall construction work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review and acceptance. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
3. A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Descriptions of stockpiling and hauling methods.
5. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
6. Location of the QC laboratory retained sample storage, and other documentation.
7. A summary of the locations and calculated quantities to be tested under this provision.

C.4.2 Quality Control Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a HTCP Level I Grading Technician, Level I Aggregate Technician, or Assistant Certified Aggregate Technician (ACT) present at each grading site during all wall backfill placement, compaction, and nuclear testing activities. Have a HTCP Level I Nuclear Density Technician or Assistant Certified Nuclear Density Technician (ACT) perform field density and field moisture content testing.

If an Assistant Certified Technician (ACT) is performing sampling or testing, a certified technician must coordinate and take responsibility for the work an ACT performs. Have a certified technician ensure that all sampling and testing is performed correctly, analyze test results, and post resulting data. No more than one ACT can work under a single certified technician.

C.4.3 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at <http://www.atwoodsystems.com/materials>. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge the same calendar year it is used on the project. Retain a copy of the calibration certificate with the gauge.

Conform to ASTM D 6938 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department's split samples to the department.

C.4.4 Quality Control (QC) Testing

C4.4.1 LFCF Backfill

C.4.4.1.1 Cast Density of Field Installed LFCF

Test cast density in accordance to ASTM C 796

1. Prior to placement of the initial batch, the installer shall check the density and adjust the mix as required to obtain the manufacturer's specified cast density at point of placement.
2. At hourly intervals during placement, monitor the density and adjust as necessary to maintain the specified cast density.

C.4.4.1.2 Strength Testing

Conduct strength testing in accordance to ASTM C 796 except do not oven dry the test specimens.

1. Furnish a sufficient quantity of molded and cured cylinders measuring 3-inches in diameter by 6-inches high for required strength tests. Provide molds, and a similar curing environment of the LFCF being tested. Prepare cylinders in accordance to ASTM C1064.
2. Provide certified strength test results to the engineer for acceptance. At a minimum, conduct a set of three (3) strength tests at 1, 2, and 28 day intervals for each 500 cubic yards of LFCF placed and a minimum of two sets of four cylinders each per day.
3. Perform the compressive strength testing at a department qualified laboratory meeting the requirements of C.5 in SPV Article Lightweight Foamed Concrete Fill Grade 1 and Lightweight Foamed Concrete Fill Grade 2 included in the contract.

C.4.5 Department Testing

C.4.5.1 General

- (1) The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all QV and IA personnel for the project and provide test results to the contractor within 2 business days after the department obtains the sample.

C.4.5.2 Quality Verification (QV) Testing

- (1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.4.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.
- (2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor cast density, compressive strength, density, Proctor and gradation tests.
- (3) The department will obtain LFCF material for cast density and compressive strength tests at random intervals independent of the contractor's QC work. For granular backfill the department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.
- (4) The department will conduct cast density, compressive strength, QV Proctor and gradation tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.
- (5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the cast density, compressive strength or gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved. Differing QC and QV cast density and compressive strength test values of more than 4% will be investigated and resolved.

C.4.5.3 Independent Assurance (IA)

- (1) Independence assurance is unbiased testing the department performs to evaluate the department's QV and the contractor's QC sampling and testing, including personnel qualifications, procedures, and equipment. The department will perform an IA review according to the department's independent assurance program. That review may include one or more of the following:
 1. Split sample testing.
 2. Proficiency sample testing.
 3. Witnessing sampling and testing.
 4. Test equipment calibration checks.
 5. Reviewing required worksheets and control charts.
 6. Requesting that testing personnel perform additional sampling and testing.
- (2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.5.4.

C.4.5.4 Dispute Resolution

- (1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.
- (2) Production test results, and results from other process control testing, may be considered when resolving a dispute.
- (3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product or work, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third-party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C.5 Dampproofing

Apply dampproofing conforming to standard spec 516 to the final horizontal and vertical surfaces of the LFCF material at locations designated on the plans.

C.6 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Geotechnical Engineer two working days to review the foundation.

D Measurement

The department will not measure Wall Concrete Panel Mechanically Stabilized Earth LFCF. The department will use the theoretical pay limits that plans show. No measurement of quantities shall be made in the field. Unless the engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

E Payment

The department will pay for measured quantities according to the theoretical pay limits shown in the plans at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0165.4761	Wall Concrete Panel Mechanically Stabilized Earth LFCF R-40-761	SF
SPV.0165.4767	Wall Concrete Panel Mechanically Stabilized Earth LFCF R-40-767	SF

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of non-contaminated materials; supplying all necessary wall components to produce a functional system including cap and copings; constructing the retaining system including drainage system; providing and placing LFCF and granular backfill, compacting, developing/completing/documenting the quality management program, performing cast density, compressive strength and compaction testing. Parapets, railings, abutment bodies and other items above the wall cap or coping will be paid for separately. Vehicle barrier and its support will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price of topsoil, fertilizer, seeding or sodding and mulch, respectively.

Dampproofing will be measured and paid for separately in accordance to standard spec 516.

Hauling and disposal of contaminated material will be measured and paid for separately under the bid items, "Excavation, Hauling, and Disposal of Petroleum Contaminated Soil", "Excavation, Hauling, and Reuse of Low-Level Petroleum Contaminated Soil", "Management of Solid Waste – Greves St, West of 27th St", or "Management of Solid Waste – Greves St, East of 27th St" included in the contract.

224. HPC Pavement 9-Inch, Item SPV.0180.0421.

A. Description

This special provision describes specialized material and construction requirements for high performance concrete used on concrete freeway service ramps and concrete pavement approach slabs. Conform to standard spec 415, 501, 710, and 715 as modified in this special provision.

B. Materials

415.2 Materials

415.2.1 Concrete

Replace 415.2.1(1) with the following:

- (1) Furnish grade A concrete conforming to 501 except develop a concrete mixture to follow 501.3.2.3 and as modified for class I pavement concrete in 715. Provide QMP for class I pavement concrete as specified in 715.

501.2.7.3 Coarse Aggregates

501.2.7.3.1 General

Replace the entire text of 501.2.7.3.1 with the following:

- (1) Provide coarse aggregates from a department-approved source. Use an approved source listed on the APL or follow the source approval process specified in standard spec 106.3.4.2. In addition to the requirements of standard spec 106.3.4.2, perform tests for LA wear, sodium sulfate soundness, freeze-thaw soundness and lightweight pieces at least once per calendar year when producing coarse aggregates for use in high-performance concrete mixes.
- (2) Use clean, hard, durable crushed limestone free of excess flat and elongated pieces, lightweight particles, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.
- (3) Use virgin aggregates only.
- (4) Contact the engineer a minimum of 4 weeks prior to paving to collect a sample of the aggregates proposed for the project. The engineer will obtain the sample or observe the contractor obtaining the sample. The sampler must be HTCP certified to sample aggregates.
- (5) Only the department test results will be used for aggregate acceptance.

- (6) The department will randomly sample coarse aggregate for lightweight pieces testing at least once per 10,000 cubic yards during placement of concrete pavement.

501.2.7.3.2 Physical Properties

Replace 501.2.7.3.2 paragraph one with the following:

- (1) Furnish coarse aggregates approved for use in concrete masonry structures and conforming to the following:

Aggregate Quality Test	Test Method	Maximum Percent by Weight
LA Wear (100 and 500 revolutions) ^[1]	WTM T96	35
Sodium Sulfate Soundness (R-4, 5 cycles) ^[1]	WTM T104	6
Freeze-Thaw Soundness ^[1]	WTM T103	12
Lightweight Pieces ^{[1] [2]}	WTM T113	2.0

^[1] Coarse aggregate sizes used in the Portland Cement Concrete mixture design (DT2221 Concrete Mixture Design – Optimized Aggregate Gradation) will be tested individually and the results weighted by the blend percentage listed in the mix design. Do not consider fine aggregate percentage as part of the weighted result.

^[2] Material having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of lightweight pieces in the sample retained on the 3/8-inch sieve by the weight of the total sample.

501.2.7.3.3 Deleterious Substances

Replace 501.2.7.3.3 paragraph one with the following:

- (1) Furnish aggregates that conform to the following:

Deleterious Substance	Test Method	Maximum Percent by Weight
Coal, clay lumps, shale, and other deleterious substance	Visual	3.0
Flat or elongated pieces based on a 3:1 ratio ^[1]	WTM D4791	15.0
Materials passing the No. 200 sieve	WTM T11	1.5

710.5 Sampling and Testing

710.5.5 Strength

Replace 710.5.5(1) with the following:

- (1) Cast all 6-inch x 6-inch x 21-inch beams in a set from the same sample. Do not cast more than one set of specimens from a single truckload of concrete. Mark each specimen to identify the lot and subplot or location on the project it represents.

Supplement 710.5.5 with the following:

- (4) Cast an additional set of three 6"x12" cylinders for concrete surface resistivity.

715.2.1 General

Replace 715.2.1 paragraph four with the following:

- (4) The regional materials engineer must review and approve the submitted mix design within 7 business days of receiving the mix design submittal and complete Project Staff Review section of mix design certification within DT2220 or DT2221.

715.3 Testing and Acceptance

715.3.1 Class I Concrete Testing

715.3.1.1 General

Replace 715.3.1.1 (1) with the following:

- (1) Provide slump, air content, concrete temperature, and strength test results as specified in 710.5. Provide a battery of QC tests, consisting of results for each specified property, using a single sample randomly located within each subplot. Cast 3 specimens for strength evaluation.

715.3.1.1.1 Flexural Strength

Replace 715.3.1.1.1(1) with the following:

- (1) Cast 3 beams for flexural strength acceptance testing at 28 days.

715.3.1.1.2 Surface Resistivity

Replace 715.3.1.1.2 (1) with the following:

- (1) Test concrete surface resistivity according to AASHTO T358. Submit the resistivity to the nearest tenth into MRS for information only. Perform this testing at least once per lot.

715.3.2 Strength Evaluation

715.3.2.1 General

Replace 715.3.2.1 (1) with the following:

- (1) The department will make pay adjustments for strength on a lot-by-lot basis using the flexural strength of contractor QC beams.

715.5 Payment

715.5.1 General

Replace 715.5.1 with the following:

- (1) The department will pay incentive for strength under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
715.0715	Incentive Flexural Strength Concrete Pavement	DOL

- (2) Incentive payment may be more or less than the amount the schedule of items shows.

- (3) The department will administer disincentives for strength under the Disincentive Flexural Strength Concrete Pavement administrative item.

- (4) The department will adjust pay for each lot using PWL of the 28-day subplot average strengths for that lot. The department will measure PWL relative to strength lower specification limits as follows

- Flexural strength of 650 psi for pavements

- (5) The department will not pay a strength incentive for concrete that is nonconforming in another specified property, for ancillary concrete accepted based on tests of class I concrete, or for high early strength concrete unless placed in pavement gaps as allowed under 715.3.1.2.2.

- (6) Submit strength results to the department electronically using the MRS software. The department will validate contractor data before determining pay adjustments.

- (7) All coring and testing costs under 715.3.2.2 including filling core holes and providing traffic control during coring are incidental to the contract.

Delete section 715.5.2.1.

C. Construction

415.3.8 Surface Finishing

415.3.8.2 Design Speed Less Than 40 MPH

Supplement standard spec 415.3.8.2 with the following:

- (4) Once the curing compound has been applied, do not alter the surface texture unless the engineer directs or allows otherwise.

415.3.8.3 Design Speed - 40 MPH and Higher

415.3.8.3.1 General

Supplement standard spec 415.3.8.3.1 with the following:

- (5) Once the curing compound has been applied, do not alter the surface texture unless the engineer directs or allows otherwise.

415.3.12 Curing Concrete

415.3.12.1 General

Supplement the standard spec 415.3.12.1 with the following:

- (3) Cure all concrete within 75 minutes from the time concrete is discharged from the truck, unless the contractor can show the engineer there is still free water on the surface.

501.3.2.4.3.3 Extended Delivery Time

Delete 501.3.2.4.3.3 paragraph one.

501.3.5 Ready-Mixed Concrete

501.3.5.1 General

Replace 501.3.5.1 paragraph one with the following:

- (1) Use central-mixed concrete as defined in standard spec 501.3.5.1(2) for all work performed under this special provision.

501.3.5.2 Delivery

Replace 501.3.5.2(3) with the following:

- (3) Deliver and completely discharge the concrete within the following limits, beginning when adding water to the cement, or when adding cement to the aggregates. A decrease in air temperature below 60 F or the use of department-approved retarders does not increase the discharge time.

Delivered in Agitating Vehicles:

- 60 minutes regardless of the concrete temperature at placement and the contractor use of a department-approved retarder.

Delivered in Non-Agitating Vehicles:

- 30 minutes if the concrete temperature is 85 F or higher at placement, and the contractor does not use a department-approved retarder.
- 45 minutes if the concrete temperature is 60 F to less than 85 F at placement, and the contractor does not use a department-approved retarder.
- 60 minutes if the concrete temperature is less than 60 F at placement.
- 60 minutes if the concrete temperature is 60 F or higher at placement, and the contractor uses a department-approved retarder

501.3.8.2 Hot Weather Concreting

501.3.8.2.1 General

Replace all of 501.3.8.2.1 with the following:

- (1) The contractor is responsible for the quality of concrete placed in hot weather. Submit a written temperature control plan at or before the pre-pour meeting. In that plan, outline the actions to control concrete temperature if the concrete temperature at the point of placement exceeds 80 F. Do not place concrete without the engineer's written acceptance of that temperature control plan. Perform the work as outlined in the temperature control plan.
- (2) If the concrete temperature at the point of placement exceeds 90 F, do not place concrete for items covered in this special provision.
- (3) If the air temperature exceeds 80 F, ensure that the base material is in a moist condition during concrete placement. Water the base, as required, not less than 6 hours before placing the concrete. If the base material subsequently dries, moisten it by sprinkling water just before placing the concrete. Sprinkle the water to avoid forming pools.

- (4) Notify the engineer whenever conditions exist that might cause the temperature at the point of placement to exceed 80 F. If project information is not available, the contractor should obtain information from similar mixes placed for other nearby work.

D. Measurement

The department will measure Concrete Pavement 9-Inch Special by square yards, acceptably completed, in accordance with standard spec 415 and as modified herein.

E. Payment

Conform to standard spec 415.5 and as modified in this special provision.

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0180.0421	Concrete Pavement 9-Inch Special	SY

The department will pay separately for the following bid items: 715.0715 Incentive Flexural Strength Concrete Pavement.

225. HMA Longitudinal Joint Repair, Item SPV.0195.0443.

A Description

This special provision describes providing longitudinal joint repairs in HMA pavements. Conform to standard spec 204, 315, 455, and 460, and as follows.

B Materials

Furnish asphaltic mixture as specified for type 3 HT 58-28 H under standard spec 460.2.

Provide tack coat conforming to standard spec 455.2.5.

C Construction

C.1 General

Remove an area 1.5 to 3 feet wide and at least to the full depth of asphaltic pavement; the engineer will determine the repair length. Remove damaged concrete pavement discovered below the asphalt during this removal and replace with asphalt mixture.

Clean the existing exposed concrete pavement surface before placing tack coat.

Apply asphaltic materials the same day the joint is removed to prevent the entrance of water. Do not apply if weather or surface conditions are unfavorable or before impending rains.

Conform to standard spec 315.3.1 for placement of the HMA pavement.

Dispose of removed pavement and other waste materials outside of the project limits unless the engineer allows otherwise.

C.2 Maintenance

Maintain repaired joints during the contract. Remove and replace additional tack coat and HMA pavement if the engineer directs.

D Measurement

The department will measure HMA Longitudinal Joint Repair by the ton, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.0443	HMA Longitudinal Joint Repair	TON

Payment for the HMA Longitudinal Joint Repair item is full compensation for providing the joint repair including removing the existing asphaltic surface and damaged concrete; for tack coat and asphaltic pavement mixture; and for maintaining the repair during the contract.

sef-455-005 (20180104)

226. HMA Transverse Joint Repair, Item SPV.0195.0444.

A Description

This special provision describes providing transverse joint repairs in HMA pavements. Conform to standard spec 204, 315, 455, and 460, and as follows.

B Materials

Furnish asphaltic mixture as specified for type 3 MT 58-28 H under standard spec 460.2.

Provide tack coat conforming to standard spec 455.2.5.

C Construction

C.1 General

Remove an area two feet wide and at least to the full depth of asphaltic pavement; the engineer will determine the repair length. Remove damaged concrete pavement discovered below the asphalt during this removal and replace with asphalt mixture.

Clean the existing exposed concrete pavement surface before placing tack coat.

Apply asphaltic materials the same day the joint is removed to prevent the entrance of water. Do not apply if weather or surface conditions are unfavorable or before impending rains.

Conform to standard spec 315.3.1 for placement of the HMA pavement.

Dispose of removed pavement and other waste materials outside of the project limits unless the engineer allows otherwise.

C.2 Maintenance

Maintain repaired joints during the contract. Remove and replace additional tack coat and HMA pavement if the engineer directs.

D Measurement

The department will measure HMA Transverse Joint Repair by the ton, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.0444	HMA Transverse Joint Repair	TON

Payment for the HMA Transverse Joint Repair item is full compensation for providing the joint repair including removing the existing asphaltic surface and damaged concrete; for tack coat and asphaltic pavement mixture; and for maintaining the repair during the contract.

sef-455-005 (20180104)

227. Management of Solid Waste – St Paul Ave / 27th St, Item SPV.0195.0446.

A Description

A.1 General

This work will conform with the requirements of Section 205 of the Standard Specifications; to pertinent parts of the Wisconsin Administrative Code, Chapters NR 700-736 Environmental Investigation and Remediation of Environmental Contamination; Wisconsin Administration Code, Chapters NR 500-538, Solid Waste; and as shown on the plans and as supplemented herein.

Soil considered to be solid waste due to ethylbenzene, xylenes, tetrachloroethene, or trichloroethene will be encountered within the construction limits. The solid waste may contain NR 500 non-exempt industrial wastes including soil mixed with foundry sand. Impacted waste material excavated during construction which cannot in the opinion of the environmental consultant be managed as common excavation or as petroleum-contaminated soil will be managed as solid waste.

This work consists of excavating, segregating, temporary stockpiling, loading, hauling, and disposing of solid waste material at a WDNR approved disposal facility.

The closest WDNR approved disposal facility is:

Waste Management Orchard Ridge Landfill
W124 N9355 Boundary Rd,
Menomonee Falls, WI 53051
(866) 909-4458

Green For Life (GFL) Environmental Emerald Park Landfill
W124S10629 South 124th Street
Muskego, WI 53150
(414) 529-1360

Provide information to the environmental consultant and engineer that indicates the WDNR-approved disposal facility that the contractor will use.

A.2 Notice to the Contractor – Solid Waste Locations

The department and others completed hazardous materials assessment for locations within this project where excavation is required. Investigation for soil and groundwater contamination was conducted at select locations. Results indicate that solid waste (soil contaminated with ethylbenzene, xylenes, tetrachloroethene, or trichloroethene) is present at the following location as shown on the plans:

1. Station 16+60SP to 17+70SP from reference line to project limits left. Depths of contamination range from 1 to 12+ feet. The estimated volume of solid waste to be excavated at this location is 547 cubic yards (approximately 930 tons).

Directly load solid waste soil excavated by the project at the above location into trucks that will transport the material to a WDNR-licensed landfill facility for landfill disposal.

If obviously contaminated soils or signs of NR500 non-exempt solid waste and hazardous materials are unexpectedly encountered elsewhere on the project, terminate excavation activities in the area and notify the engineer. Examples of these unexpected conditions may include, but are not limited to, buried containers or tanks, noxious odors and fumes, stained soils, sheen on ground water, other industrial wastes, and significant volumes of municipal or domestic garbage.

Active groundwater monitoring wells were not observed within the construction limits during the hazardous materials assessment. If active groundwater monitoring wells are encountered during construction, notify the engineer and protect the wells to maintain their integrity. The environmental consultant will determine if monitoring wells need to be maintained. For monitoring wells that do need to be maintained, adjust the wells that do not conflict with structures or curb and gutter to be flush with the final grade. For wells that conflict with the previously mentioned items or if monitoring wells are not required to be maintained, they will be abandoned by others.

If dewatering is required at the above locations, conduct the dewatering in accordance with Section C below.

A.3 Excavation Management Plan Approval

The excavation management plan for this project has been designed to minimize the off-site disposal of contaminated waste. The excavation management plan, including these special provisions, has been developed in cooperation with the WDNR. The WDNR concurrence letter is on file at the Wisconsin Department of Transportation. For further information regarding previous investigation and remediation activities in these areas contact:

Name: Andrew Malsom
Address: 141 NW Barstow St., P.O. Box 798, Waukesha, WI 53187-0798
Phone: (262) 548-6705
Fax: (262) 548-6891
E-mail: Andrew.Malsom@dot.wi.gov

A.4 Coordination

Coordinate work under this contract with the environment consultant:

Consultant: TRC Environmental Corporation
Address: 6737 W. Washington St., Suite 3460, West Allis, WI 53214
Contact: Warren (Tyler) Stapel
Phone: (262) 825-2045
E-mail: WStapel@trccompanines.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of solid waste to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying soils to be hauled to the landfill facility;
3. Documenting that activities associated with management of solid waste are in conformance with the solid waste management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of solid waste from the landfill facility.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the area of solid waste fill described in A.2 to the environmental consultant. Identify the WDNR licensed landfill facility that will be used for disposal of solid waste and provide this information to the environmental consultant no later than 30 calendar days prior to commencement of excavation in the impacted area or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals from the landfill facility for disposal of the solid waste.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation in the impacted area. Notify the environmental consultant at least three calendar days prior to commencement of excavation in the impacted area. Perform excavation in the impacted area on a continuous basis until excavation work is completed. Do not transport soil containing solid waste offsite without prior approval from the environmental consultant.

A.5 Health and Safety Requirements

Add the following to standard spec 107.1:

During excavation activities, expect to encounter historic fill contaminated with industrial waste and associated regulated metals and organic compounds. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each impacted area as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer before the start of work.

B (Vacant)

C Construction

Add the following to standard spec 205.3:

Control operations in the impacted area to minimize the quantity of soil excavated.

The environmental consultant will periodically monitor soil excavated from the area identified in A.2 above. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 20 cubic yards excavated.

Directly load and haul solid waste soil designated by the environmental consultant for offsite disposal to the WDNR approved landfill facility. Use loading and hauling practices that are appropriate to prevent any spills or releases of the material. Prior to transport, sufficiently dewater soils designated for off-site disposal so as not to contain free liquids.

Verify that the vehicles used to transport material are licensed for such activity in accordance with applicable state and federal regulations. Obtain the necessary disposal facility approvals and WDNR approvals for disposal. Do not transport regulated solid waste off-site without obtaining the approval of the environmental consultant and engineer and notifying the disposal facility.

During excavations in the areas of known contamination, larger pieces of clean concrete (~2 cubic feet), asphalt and bricks shall be segregated from the fill to the extent practical and managed as common excavation. Under NR 500.08 this material is exempt from licensing and requirements of Wisconsin

Administrative Code NR 500-538 of the solid waste regulations and will be reused as designated by the engineer as fill on the project, or it will be disposed of off-site at the contractor's disposal site(s).

If dewatering is required in areas of known contamination, water generated from dewatering activities may contain petroleum compounds, chlorinated volatile organic compounds, and/or metals. Such water may require analytical testing, and with approval from the City of Milwaukee and the Milwaukee Metropolitan Sewerage District be discharged to the sanitary sewer as follows:

3. Meet all applicable requirements of the City of Milwaukee and the Milwaukee Metropolitan Sewerage District including the control of suspended solids. Perform all necessary monitoring to document compliance with the City of Milwaukee and the Milwaukee Metropolitan Sewerage District requirements. Furnish, install, operate, maintain, disassemble, and remove treatment equipment necessary to comply with the City of Milwaukee and the Milwaukee Metropolitan Sewerage District requirements.
4. Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities.

Groundwater with a petroleum sheen cannot be discharged to the sanitary sewer per the Milwaukee Metropolitan Sewerage District guidelines. If dewatering is necessary where the groundwater has a sheen on the surface, the water shall be pumped into a holding tank or tanker truck for off-site testing and disposal.

Notify the engineer of any dewatering activities. Contractor shall obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

Costs associated with excavation dewatering in contaminated areas are considered incidental to this pay item. The Wisconsin Department of Transportation will be the generator of regulated solid waste from this construction project.

D Measurement

The department will measure solid waste by the ton of waste accepted by the disposal facility and as documented by weight tickets.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.0446	Management of Solid Waste – St Paul Ave / 27 th St	TON

Payment is full compensation for excavating, segregating, loading, hauling, and landfill disposal of solid waste; obtaining solid waste collection and transportation service operating licenses; assisting in the collection of soil samples for field evaluation; dewatering of soils before transport, if necessary; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

228. Management of Solid Waste – Greves St, East of 27th St, Item SPV.0195.0447.

A Description

A.1 General

This work will conform with the requirements of Section 205 of the Standard Specifications; to pertinent parts of the Wisconsin Administrative Code, Chapters NR 700-736 Environmental Investigation and Remediation of Environmental Contamination; Wisconsin Administration Code, Chapters NR 500-538, Solid Waste; and as shown on the plans and as supplemented herein.

Soil considered to be solid waste due to petroleum, chlorinated solvents, metals, PCBs, and foundry waste will be encountered within the construction limits. The solid waste may contain NR 500 non-exempt industrial wastes including soil mixed with foundry sand and slag. Impacted waste material excavated during construction which cannot in the opinion of the environmental consultant be managed as common excavation or as petroleum-contaminated soil will be managed as solid waste.

This work consists of excavating, segregating, temporary stockpiling, loading, hauling, and disposing of solid waste material at a WDNR approved disposal facility. The closest WDNR approved disposal facilities are:

Waste Management Orchard Ridge Landfill
W124 N9355 Boundary Road
Menomonee Falls, WI 53051
(866) 909-4458

Green For Life (GFL) Emerald Park Landfill
W124S10629 South 124th Street
Muskego, WI 53132
(414) 529-1360

Provide information to the environmental consultant and engineer that indicates the WDNR-approved disposal facility that the contractor will use.

A.2 Notice to the Contractor – Solid Waste Soil and Contaminated Groundwater Location

The department and others completed hazardous materials assessment for locations within this project where excavation is required. Investigation for soil and groundwater contamination was conducted at select locations. Results indicate that solid waste (soil contaminated with petroleum, chlorinated solvents, metals, PCBs, and foundry waste) is present at the following location as shown on the plans:

2. Station 19TLC+90 to 24TLC+30, from 12 feet left of reference line to 285 feet right of reference line, from 0.5 to 5+ feet below grade. (Note that this area does not include Station 23TLC+10 to 23TLC+24, from 147 feet right of reference line to 173 feet right of reference line, from 0.5 to 2.5 feet below grade – see Notice to Contractor - Contamination Beyond Construction Limits). The estimated volume of solid waste soil to be excavated at this location is 573 CY (approximately 975 tons using a conversion factor of 1.7 tons per cubic yard). Groundwater at this location is contaminated with petroleum and metals.

Directly load solid waste soil excavated by the project at the above location into trucks that will transport the material to a WDNR-licensed landfill facility for landfill disposal.

If obviously contaminated soils or signs of NR500 non-exempt solid waste and hazardous materials are unexpectedly encountered elsewhere on the project, terminate excavation activities in the area and notify the engineer. Examples of these unexpected conditions may include, but are not limited to, buried containers or tanks, noxious odors and fumes, stained soils, sheen on ground water, other industrial wastes, and significant volumes of municipal or domestic garbage.

Active groundwater monitoring wells were not observed within the construction limits during the hazardous materials assessment. If active groundwater monitoring wells are encountered during construction, notify the engineer and protect the wells to maintain their integrity. The environmental consultant will determine if monitoring wells need to be maintained. For monitoring wells that do need to be maintained, adjust the wells that do not conflict with structures or curb and gutter to be flush with the final grade. For wells that conflict with the previously mentioned items or if monitoring wells are not required to be maintained, they will be abandoned by others.

If dewatering is required at the above location, conduct the dewatering in accordance with Section C below.

A.3 Excavation Management Plan Approval

The excavation management plan for this project has been designed to minimize the off-site disposal of contaminated waste. The excavation management plan, including these special provisions, has been developed in cooperation with the WDNR. The WDNR concurrence letter is on file at the Wisconsin Department of Transportation. For further information regarding previous investigation and remediation activities in this area contact:

Name: Andrew Malsom
Address: 141 NW Barstow St., P.O. Box 798, Waukesha, WI 53187-0798
Phone: (262) 548-6705
Fax: (262) 548-6891
E-mail: Andrew.Malsom@dot.wi.gov

A.4 Coordination

Coordinate work under this contract with the environment consultant:

Consultant: TRC Environmental Corporation
Address: 6737 W. Washington St., Suite 3460, West Allis, WI 53214
Contact: Bryan Bergmann
Phone: (262) 901-2126 office, (262) 227-9210 cell
E-mail: bbergmann@trccompanines.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of solid waste to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying soils to be hauled to the landfill facility;
3. Documenting that activities associated with management of solid waste are in conformance with the solid waste management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of solid waste from the landfill facility.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the area of solid waste soil described in A.2 to the environmental consultant. Identify the WDNR licensed landfill facility that will be used for disposal of solid waste soil and provide this information to the environmental consultant no later than 30 calendar days prior to commencement of excavation in the impacted area or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals from the landfill facility for disposal of the solid waste soil.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation in the impacted area. Notify the environmental consultant at least three calendar days prior to commencement of excavation in the impacted area. Perform excavation in the impacted area on a continuous basis until excavation work is completed. Do not transport soil containing solid waste offsite without prior approval from the environmental consultant.

A.5 Health and Safety Requirements

Add the following to standard spec 107.1:

During excavation activities, expect to encounter historic fill contaminated with industrial waste and associated regulated metals and organic compounds. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each impacted area as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer before the start of work.

B (Vacant)

C Construction

Add the following to standard spec 205.3:

Control operations in the impacted area to minimize the quantity of soil excavated.

The environmental consultant will periodically monitor soil excavated from the area identified in A.2 above. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 20 cubic yards excavated.

Directly load and haul solid waste soil designated by the environmental consultant for offsite disposal to the WDNR approved landfill facility. Use loading and hauling practices that are appropriate to prevent any spills or releases of the material. Prior to transport, sufficiently dewater soils designated for off-site disposal so as not to contain free liquids.

Verify that the vehicles used to transport material are licensed for such activity in accordance with applicable state and federal regulations. Obtain the necessary disposal facility approvals and WDNR approvals for disposal. Do not transport regulated solid waste off-site without obtaining the approval of the environmental consultant and engineer and notifying the disposal facility.

During excavations in the areas of known contamination, larger pieces of clean concrete (~2 cubic feet), asphalt and bricks shall be segregated from the fill to the extent practical and managed as common excavation. Under NR 500.08 this material is exempt from licensing and requirements of Wisconsin Administrative Code NR 500-538 of the solid waste regulations and will be reused as designated by the engineer as fill on the project, or it will be disposed of off-site at the contractor's disposal site(s).

If dewatering is required in areas of known contamination, water generated from dewatering activities may contain petroleum compounds, chlorinated volatile organic compounds, PCBs, and/or metals. Such water may require analytical testing, and with approval from the City of Milwaukee and the Milwaukee Metropolitan Sewerage District (MMSD) be discharged to the sanitary sewer as follows:

5. Meet all applicable requirements of the City of Milwaukee and the MMSD including the control of suspended solids. Perform all necessary monitoring to document compliance with the City of Milwaukee and the MMSD requirements. Furnish, install, operate, maintain, disassemble, and remove treatment equipment necessary to comply with the City of Milwaukee and the MMSD requirements.
6. Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities.

Groundwater with a petroleum sheen cannot be discharged to the sanitary sewer. If dewatering is necessary where the groundwater has a sheen on the surface, the water shall be pumped into a holding tank or tanker truck for off-site testing and disposal.

Notify the engineer of any dewatering activities. Contractor shall obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

Costs associated with excavation dewatering in contaminated areas are considered incidental to this pay item. The Wisconsin Department of Transportation will be the generator of regulated solid waste from this construction project.

D Measurement

The department will measure solid waste by the ton of waste accepted by the disposal facility and as documented by weight tickets.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.0447	Management of Solid Waste – Greves St, East of 27 th St	TON

Payment is full compensation for excavating, segregating, loading, hauling, and landfill disposal of solid waste; obtaining solid waste collection and transportation service operating licenses; assisting in the collection of soil samples for field evaluation; dewatering of soils before transport, if necessary; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

229. Management of Solid Waste – Greves St, West of 27th St, Item SPV.0195.0448.

A Description

A.1 General

This work will conform with the requirements of Section 205 of the Standard Specifications; to pertinent parts of the Wisconsin Administrative Code, Chapters NR 700-736 Environmental Investigation and Remediation of Environmental Contamination; Wisconsin Administration Code, Chapters NR 500-538, Solid Waste; and as shown on the plans and as supplemented herein.

Soil considered to be solid waste due to petroleum, chlorinated solvents, and metals will be encountered within the construction limits. The solid waste may contain NR 500 non-exempt industrial wastes including soil mixed with foundry sand and slag. Impacted waste material excavated during construction which

cannot in the opinion of the environmental consultant be managed as common excavation or as petroleum-contaminated soil will be managed as solid waste.

This work consists of excavating, segregating, temporary stockpiling, loading, hauling, and disposing of solid waste material at a WDNR approved disposal facility. The closest WDNR approved disposal facilities are:

Waste Management Orchard Ridge Landfill
W124 N9355 Boundary Road
Menomonee Falls, WI 53051
(866) 909-4458

Green For Life (GFL) Emerald Park Landfill
W124S10629 South 124th Street
Muskego, WI 53132
(414) 529-1360

Provide information to the environmental consultant and engineer that indicates the WDNR-approved disposal facility that the contractor will use.

A.2 Notice to the Contractor – Solid Waste Soil and Contaminated Groundwater Location

The department and others completed hazardous materials assessment for locations within this project where excavation is required. Investigation for soil and groundwater contamination was conducted at select locations. Results indicate that solid waste (soil contaminated with petroleum, chlorinated solvents, and metals) is present at the following location as shown on the plans:

- Station 2008+10 to 2010+00 (R-40-761 alignment), from 0 feet right of reference line to 150 feet right of reference line, from 0 to 3+ feet below grade (excluding the historic pavement structure of the former Red Star Yeast site consisting of asphalt, concrete, and/or stone). The estimated volume of solid waste soil to be excavated at this location is 300 CY (approximately 510 tons using a conversion factor of 1.7 tons per cubic yard). Groundwater at this location may be contaminated with petroleum, chlorinated solvents, and metals.

Directly load solid waste soil excavated by the project at the above location into trucks that will transport the material to a WDNR-licensed landfill facility for landfill disposal.

If obviously contaminated soils or signs of NR500 non-exempt solid waste and hazardous materials are unexpectedly encountered elsewhere on the project, terminate excavation activities in the area and notify the engineer. Examples of these unexpected conditions may include, but are not limited to, buried containers or tanks, noxious odors and fumes, stained soils, sheen on ground water, other industrial wastes, and significant volumes of municipal or domestic garbage.

Active groundwater monitoring wells were not observed within the construction limits during the hazardous materials assessment. If active groundwater monitoring wells are encountered during construction, notify the engineer and protect the wells to maintain their integrity. The environmental consultant will determine if monitoring wells need to be maintained. For monitoring wells that do need to be maintained, adjust the wells that do not conflict with structures or curb and gutter to be flush with the final grade. For wells that conflict with the previously mentioned items or if monitoring wells are not required to be maintained, they will be abandoned by others.

If dewatering is required at the above location, conduct the dewatering in accordance with Section C below.

A.3 Excavation Management Plan Approval

The excavation management plan for this project has been designed to minimize the off-site disposal of contaminated waste. The excavation management plan, including these special provisions, has been developed in cooperation with the WDNR. The WDNR concurrence letter is on file at the Wisconsin Department of Transportation. For further information regarding previous investigation and remediation activities in this area contact:

Name: Andrew Malsom
Address: 141 NW Barstow St., P.O. Box 798, Waukesha, WI 53187-0798
Phone: (262) 548-6705
Fax: (262) 548-6891
E-mail: Andrew.Malsom@dot.wi.gov

A.4 Coordination

Coordinate work under this contract with the environment consultant:

Consultant: TRC Environmental Corporation
Address: 6737 W. Washington St., Suite 3460, West Allis, WI 53214
Contact: Bryan Bergmann
Phone: (262) 901-2126 office, (262) 227-9210 cell
E-mail: bbergmann@trccompanines.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of solid waste to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying soils to be hauled to the landfill facility;
3. Documenting that activities associated with management of solid waste are in conformance with the solid waste management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of solid waste from the landfill facility.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the area of solid waste soil described in A.2 to the environmental consultant. Identify the WDNR licensed landfill facility that will be used for disposal of solid waste soil and provide this information to the environmental consultant no later than 30 calendar days prior to commencement of excavation in the impacted area or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals from the landfill facility for disposal of the solid waste soil.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation in the impacted area. Notify the environmental consultant at least three calendar days prior to commencement of excavation in the impacted area. Perform excavation in the impacted area on a continuous basis until excavation work is completed. Do not transport soil containing solid waste offsite without prior approval from the environmental consultant.

A.5 Health and Safety Requirements

Add the following to standard spec 107.1:

During excavation activities, expect to encounter historic fill contaminated with industrial waste and associated regulated petroleum, metals and organic compounds. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each impacted area as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer before the start of work.

B (Vacant)

C Construction

Add the following to standard spec 205.3:

Control operations in the impacted area to minimize the quantity of soil excavated.

The environmental consultant will periodically monitor soil excavated from the area identified in A.2 above. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 20 cubic yards excavated.

Directly load and haul solid waste soil designated by the environmental consultant for offsite disposal to the WDNR approved landfill facility. Use loading and hauling practices that are appropriate to prevent any spills or releases of the material. Prior to transport, sufficiently dewater soils designated for off-site disposal so as not to contain free liquids.

Verify that the vehicles used to transport material are licensed for such activity in accordance with applicable state and federal regulations. Obtain the necessary disposal facility approvals and WDNR approvals for disposal. Do not transport regulated solid waste off-site without obtaining the approval of the environmental consultant and engineer and notifying the disposal facility.

During excavations in the areas of known contamination, larger pieces of clean concrete (~2 cubic feet), asphalt and bricks shall be segregated from the fill to the extent practical and managed as common excavation. Under NR 500.08 this material is exempt from licensing and requirements of Wisconsin Administrative Code NR 500-538 of the solid waste regulations and will be reused as designated by the engineer as fill on the project, or it will be disposed of off-site at the contractor's disposal site(s).

If dewatering is required in areas of known contamination, water generated from dewatering activities may contain petroleum compounds, chlorinated volatile organic compounds, and/or metals. Such water may require analytical testing, and with approval from the City of Milwaukee and the Milwaukee Metropolitan Sewerage District (MMSD) be discharged to the sanitary sewer as follows:

1. Meet all applicable requirements of the City of Milwaukee and the MMSD including the control of suspended solids. Perform all necessary monitoring to document compliance with the City of Milwaukee and the MMSD requirements. Furnish, install, operate, maintain, disassemble, and remove treatment equipment necessary to comply with the City of Milwaukee and the MMSD requirements.
2. Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities.

Groundwater with a petroleum sheen cannot be discharged to the sanitary sewer. If dewatering is necessary where the groundwater has a sheen on the surface, the water shall be pumped into a holding tank or tanker truck for off-site testing and disposal.

Notify the engineer of any dewatering activities. Contractor shall obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

Costs associated with excavation dewatering in contaminated areas are considered incidental to this pay item. The Wisconsin Department of Transportation will be the generator of regulated solid waste from this construction project.

D Measurement

The department will measure solid waste by the ton of waste accepted by the disposal facility and as documented by weight tickets.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.0448	Management of Solid Waste – Greves St, West of 27 th St	TON

Payment is full compensation for excavating, segregating, loading, hauling, and landfill disposal of solid waste; obtaining solid waste collection and transportation service operating licenses; assisting in the collection of soil samples for field evaluation; dewatering of soils before transport, if necessary; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

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 15 HCST Graduate(s) be utilized for 45000 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 7 HCST Apprentice(s) be utilized for 14000 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

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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 Expeditors, Packagers, Manufacturers' Representatives

- (1) No portion of the cost of the materials, supplies, services themselves will count for DBE credit. However, WisDOT will evaluate the fees or commissions charged when a prime purchases materials, supplies, or services from a DBE certified firm which is neither a manufacturer nor a regular dealer, namely: brokers, packagers, manufacturers' representatives, or other persons who arrange or expedite transactions.
- (2) Brokerage fees are calculated as **10%** of the purchase amount.
- (3) WisDOT may count the amount of fees or commissions charged for assistance in the procurement of the materials and supplies, fees, or transportation charges for the delivery of materials or supplies required on a job site.
- (4) Evaluation of DBE credit includes review of the contract need for the item/service, the sub-contract or invoice for the item/service, and a comparison of the fees customarily allowed for similar services to determine whether they are reasonable.

9. DBE Commitment Modification Policy (Formerly "DBE Replacement Policy")**a. Issuing a Contract Change Order**

Any changes or modifications to the contract once executed are considered contract modifications and as such require a change order. In addition, the DBE office must provide consent for reduction, termination, or replacement of subcontractors approved on the DBE Commitment *in advance* of the modification for the prime contractor to receive payment for work or supplies. Additions to the DBE Commitment do not require advance notification of the DBE office. (see below e. DBE Utilization beyond the approved DBE Commitment)

b. Contractor Considerations

- (1) A prime contractor cannot modify the DBE Commitment through reduction in participation, termination, or replacement of a DBE subcontractor listed on the approved DBE Commitment without prior written consent from the DBE Office. This includes, but is not limited to, instances in which a prime contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.
- (2) If a prime contractor reduces participation, replaces, or terminates a DBE subcontractor who has been approved for DBE credit toward its contract, the prime is required to provide documentation supporting its inability to fulfill the contractual commitment made to the Department regarding the DBE utilization.
- (3) The Prime Contractor is required to demonstrate efforts to find another DBE subcontractor to perform at least the same amount of work under the contract as the DBE subcontractor that was terminated, to the extent needed to meet the assigned DBE contract goal. When additional opportunity is available by contract modifications, the Prime Contractor must utilize DBE subcontractors that were committed to equal work items, in the original contract.
- (4) In circumstances when a DBE subcontractor fails to complete its work on the contract for any reason, or is terminated from a contract, the Prime Contractor must undertake efforts to maintain its commitment to the assigned DBE goal.
- (5) The DBE subcontractor should communicate with the Prime Contractor regarding its schedule and capacity in the context of the contract. If the DBE firm anticipates that it cannot fulfill its subcontract, they will advise the Prime Contractor and suggest a DBE subcontractor that may replace their services and provide written consent to be released from its subcontract.
 - i. Before the Prime Contractor can request modification to the approved DBE Commitment, the Prime Contractor must:
 - a. Make every effort to fulfill the DBE Commitment by working with the listed DBE subcontractor to ensure that the firm is fully knowledgeable of the Prime Contractor's expectations for successful performance on the contract. Document these efforts in writing.

- b. If those efforts fail, provide written notice to the DBE subcontractor of the Prime Contractor's intent to request to modify the Commitment through reduction in participation, termination, and/or replacement of the subcontractor including the reason(s) for pursuing this action.
- c. Copy the DBE Office on all correspondence related to changing a DBE subcontractor who has been approved for DBE credit on a contract, including preparation and coordination efforts.
- d. Clearly state the amount of time the DBE firm has to remedy and/or respond to the notice of intent to replace/terminate. The DBE must be allowed five days from the date notice was received as indicated by email time stamp or signed certified mail, to respond, in writing. EXCEPTION: The Prime Contractor must provide a verifiable reason for a response period shorter than five days. For example, a WisDOT project engineer or project manager confirms that WisDOT has eliminated an item the DBE subcontractor was contracted for.
- e. The DBE subcontractor must acknowledge the contract modification with written response to the Prime Contractor and the DBE Office. If objecting to the subcontract modification, the DBE subcontractor must outline the basis for objection to the proposed modification, providing sound reasoning for WisDOT to reject the prime's request.

c. Request to Modify DBE Subcontracting Commitment

The written request referenced above may be delivered by email or fax. The request must contain the following:

- (1) Project ID number
- (2) WisDOT Contract Project Engineer's name and contact information
- (3) DBE subcontractor name and work type and/or NAICS code
- (4) Contract's progress schedule
- (5) Reason(s) for requesting that the DBE subcontractor be replaced or terminated
- (6) Attach/include all communication with the DBE subcontractor to deploy/address/resolve work completion

Naming conventions: When emailing files, please use the following language to identify your submission- "Project #, Proposal #, Let date, Business Name, MODIFICATION" Email: DBE_Alert@dot.wi.gov + Project Engineer

WisDOT will review the request and any supporting documentation submitted to evaluate if the circumstance and the reasons constitute good cause for replacing or terminating the approved DBE subcontractor.

Good Causes to Replace a DBE subcontractor according to the federal DBE program guidelines {49 CFR part 26.53}

- The listed DBE subcontractor fails or refuses to execute a written contract
- The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor
- The listed DBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements
- The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness
- The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215, and 1,200 or applicable state law
- The prime has determined that the listed DBE subcontractor is not a responsible contractor
- The listed DBE subcontractor voluntarily withdraws from the project and provides written notice of its withdrawal
- The listed DBE subcontractor is ineligible to receive DBE credit for the type of work required

- A DBE firm owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract.

d. Evaluation and Response to the Request

WisDOT's timely response to the Prime Contractor's request for modification of the approved DBE Commitment will be provided to the prime and the WisDOT project engineer via email.

If WisDOT determines that the Prime Contractor's basis for reduction in participation, replacement, or termination of the DBE subcontractor is not consistent with the good cause guidelines, the DBE office will provide a response via email within 48-hours of receipt of request from the Prime Contractor as indicated by email time stamp. The communication will include: the requirement to utilize the committed DBE, actions to support the completion of the contractual commitment, a list of available WisDOT support services, and administrative remedies, including withholding payment to the prime, that may be invoked for failure to comply with federal DBE guidelines for DBE replacement.

The WisDOT contact for all actions related to modification of the approved DBE Commitment is the DBE Program Engineer who can be reached at DBE_Alert@dot.wi.gov or (414) 335-0413.

e. DBE Utilization beyond the approved DBE Commitment

When the prime or a subcontractor increases the scope of work for an approved DBE subcontractor or adds a DBE subcontractor who was not on the approved form DT1506 or DBE Commitment submitted with bid at any time after contract execution, this is referred to as voluntary DBE contract goal achievement. The contractor must follow these steps to ensure that the participation is accurately credited toward the DBE goal:

- (1) Forward a complete, signed Attachment A form to the DBE Office. A complete Attachment A includes DBE subcontractor contact information, signatures, subcontract value, and description of the work areas to be performed by the DBE. The DBE Office will verify the DBE participation and revise the DBE Commitment based on the email/discussion and the new Attachment A.
- (2) When adding to an existing DBE Commitment, submit a new Attachment A to the DBE Alert mailbox
- (3) OR Submit a final Attachment A to DBE Alert during the Finals Process when Compliance receives notice of "Substantially Complete"

Naming conventions: When emailing files, please use the following language to identify your submission- "Project #, Proposal #, Let date, Business Name, New Attachment A" Email: DBE_Alert@dot.wi.gov

Special note on trucking

- DBE truckers added to the sublets in CRCS *will* be approved without DBE credit (You will see a "N" in CRCS instead of "Y")
- Prime Contractors may enter a "place holder" e.g. \$1000.00, for DBE Trucking in CRCS if the full amount of trucking is unknown for sublet purposes only
- The hiring contractor may obtain the Attachment A with DBE signature included but the **Prime Contractor** must sign the Attachment A before submitting
- DBE truckers need to be added to the DBE commitment once. If the DBE trucker is on the initial commitment (DT1506/E1506) there is no requirement to submit another Attachment A for that trucker for that contract.

10. Commercially Useful Function

- a. Commercially Useful Function (CUF) is evaluated after the contract has been executed, while the DBE certified firm is performing contracted work items.
- b. The Department uses Form DT1011, DBE Commercially Useful Function Review and Certification to evaluate if the DBE is performing a commercially useful function. WisDOT counts expenditures of a DBE toward the DBE goal only if the DBE is performing a commercially useful function on that contract.

- c. A DBE firm is performing a commercially useful function if the following conditions are met:
 - (1) For contract work, the DBE is responsible for executing a distinct portion of the work and is carrying out its responsibilities by actually performing, managing, and supervising that work.
 - (2) For materials and supplies, the DBE is responsible for negotiating price, determining quality and quantity, ordering, and paying for those materials and supplies.
- d. Offsite Hauling – when DBE truck will haul between a pit and plant or location other than the construction site associated with the commitment
 - (1) Indicate Offsite Hauling on Attachment A
 - (2) Discuss offsite hauling at weekly progress meetings with Project Engineer (PE)
 - (3) PE conducts spot checks of pits/plants to verify DBE truck is hauling and/or verifying hauling log
 - (4) Prime should be prepared to submit haul tickets, plant/pit tickets, timecards, and other pertinent documentation if requested by PE or DBE Office

11. Credit Evaluation for DBE Primes

WisDOT calculates DBE credit based on the amount and type of work performed by DBE certified firms for work submitted with required documentation. If the prime contractor is a DBE certified firm, the Department will only count the work that the DBE prime performs with its own forces for DBE neutral credit. The Department will also calculate DBE credit for work performed by any other DBE certified subcontractor, DBE certified supplier, and DBE certified manufacturer on the contract in each firm's approved NAICS code/work areas that are submitted with required documentation. Crediting for manufacturers and suppliers is calculated consistent with Section 8 of this document and 49 CFR Part 26.

12. Joint Venture

A joint venture is an association of a DBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest. If a DBE performs as a participant in a joint venture, the Department will only credit the portion of the total dollar value of the contract equal to the portion of the work that the DBE performs with its own forces.

13. Mentor-Protégé

- a. If a DBE performs as a participant in a mentor-protégé agreement, the Department will credit the portion of the work performed by the DBE protégé firm.
- b. DBE credit is evaluated and confirmed by the DBE Office for any contracts on which the mentor-protégé team identifies itself to the DBE Office as a current participant of the Mentor-Protégé Program.
 - (1) DBE credit may only be awarded to a non-DBE mentor firm for using its own protégé firm for less than one half of its goal on any contract; and
 - (2) Not award DBE credit to a non-DBE mentor firm for using its own protégé firm for more than every other contract performed by the protégé firm.
- c. A DBE protégé firm may be eligible for conditional NAICS code extension for training with the mentor. Request permission from the DBE Office- Certification area.
- d. Refer to WisDOT's Mentor-Protégé guidelines for guidance on the number of contracts and amount of DBE credit allowed on WisDOT projects.

14. Use of Joint Checks

The use of joint checks is allowable if it is a commonly recognized business practice in the material industry. A joint check is defined as a two-party check between a DBE subcontractor, a prime contractor, and the regular dealer or materials supplier who is neither the prime nor an affiliate of the prime. Typically, the prime contractor issues one check as payor to the DBE subcontractor and to the supplier jointly (to guarantee payment to the supplier) as payment for the material/supplies used by the DBE firm in cases where the DBE subcontractor and materials have been approved for DBE credit. The DBE subcontractor gains the opportunity to establish a direct contracting relationship with the supplier to potentially facilitate a business rapport that results in a line of credit or increased partnering opportunities.

The cost of material and supplies purchased by the DBE firm is part of the value of work performed by the DBE to be counted toward the goal. To receive credit, the DBE firm must be responsible for negotiating price, determining quality and quantity, ordering the materials, and installing (where applicable) and "paying for the material itself." See 49 CFR 26.55(c)(1).

The approval to use joint checks constitutes a commitment to provide further information to WisDOT, upon request by staff. WisDOT will allow the use of joint checks when the following conditions are met:

- a. The Prime Contractor must request permission to use joint checks from the DBE Office by submitting the Application to Use Joint Checks.
 - (1) Request should be made when the DBE Commitment or the Request to Sublet is submitted; the request will not be considered if submitted after the DBE Subcontractor starts its work.
 - (2) Approval/Permission must be granted prior to the issuance of any joint checks.
 - (3) The payment schedule for the supplier must be presented to the DBE office before the first check is issued.
 - (4) The joint check for supplies must be strictly for the cost of approved supplies.
- b. The DBE subcontractor is responsible for furnishing and/or installing the material/work item and is not an 'extra participant' in the transaction. The DBE firm's role in the transaction cannot be limited solely to signing the check(s) to release payment to the material supplier. At a minimum, the DBE subcontractor's tasks should include the following:
 - (1) The DBE subcontractor (not the prime/payor) negotiates the quantities, price, and delivery of materials.
 - (2) The DBE subcontractor consents to sign/release the check to the supplier by signing the [Application to Use Joint Checks](#) after establishing the conditions and documentation of payment within the subcontract terms or in a separate written document.
- c. The Prime contractor/payor acts solely as a guarantor.
 - (1) The Prime Contractor agrees to furnish the check used for the payment of materials/supplies under the contract.
 - (2) The prime contractor/payor cannot require the subcontractor to use a specific supplier or the prime contractor's negotiated unit price.

15. Payment

Costs for conforming to this Additional Special Provision (ASP) and any associated DBE requirements are incidental to the contract.

Appendix A

Substantive Conversation Guidelines

The substantive conversation is critical to all bidders' demonstration of good faith effort to meet the DBE goal prior to bid opening. Relationship building between primes and subcontractors is crucial to DBE goal attainment. Responsible bidders seek to build rapport with potential DBE subcontractors to understand capacity, areas of expertise, and assess contracting feasibility. Bidders who compete for WisDOT contracts are specialty contractors responding to a growing and changing contract environment. Just as these specialists are responsible for care of the roads, they are likewise responsible for contributing to the health of the industry. The substantive conversation drives collaboration that will build industry health and capacity. The following is intended to provide guidance for such discussions but is not an exhaustive list. Contractors are encouraged to incorporate their existing strategies for cultivating business relationships as well.

Prior to Bid Opening- this discussion should happen as early as possible (WisDOT advertisements are released weeks prior to each Let)

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?

Following Bid Opening- this discussion can happen at any time

1. After reviewing their quote, note the following in your discussion:
 - Does the quote look complete? Irregular?
 - Are there errors in the quote? Are items very high or very low?
 - In general, does the quote look competitive?
2. Questions and Advice for the bidder to share with the potential DBE subcontractor:
 - What line items would typically be in a competitive quote for a subcontractor of their specialty?
 - How many employees and what is their role/experience/expertise in your firm?
 - Do you have resources for labor (union member, family-based, community-resourced) and capital (banking relationship, bond agent, CPA)?
 - Where have you worked: cities, states, government, commercial, residential/private sector, etc. Explain similarities or differences.
 - Refer them to reliable, trusted, industry resources that can educate or connect them to relevant resources, education/certification resources, more appropriate contract opportunities.
 - Discussion about prime contract and subcontract liability, critical path items, contract quantities, schedule risks, and potential profit/loss (for upcoming known projects or in general).
 - Discussion of bonding, insurance, and overall business risk considerations.

Appendix B

Sample Contractor Solicitation Letter Page 1

(This sample is provided as a guide, not a formatting requirement)

DBE Solicitation - [Month] [Day], [Year] WisDOT Bid Letting

Attention all DBEs. [Prime Contractor] is actively seeking your quote for the [Month][Day], [Year] Bid Letting. [Prime Contractor] is considering bidding on the projects listed on page 2 as a prime contractor. Please see page 2 for instructions and the sub-contractable opportunities for each proposal.

Does [Prime Contractor] accept quotes in areas we might self-perform? Yes, we do! We support this federal rule and (if needed) we consider areas we might self-perform an opportunity to provide in the field assistance and training if we award your quote.

Where can DBEs find the plans, specifications & addenda? Please visit [Prime Contractor's] plan room [LINK] or on WisDOT's Highway Construction Contract Information HCCI website: [Wisconsin Department of Transportation Highway Construction Contract Information \(wisconsindot.gov\)](https://wisconsindot.gov/HighwayConstructionContractInformation). 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	1	6
County	Dane County	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. <i>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)</i>		
Selected Work Items Documentation	All work items are broken out into economically feasible units to facilitate DBE participation. <i>Such as: Selected work items are specific to each proposal and clearly identified in all solicitation(s)</i>		
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. <i>Such as: Project information is clearly identified in all solicitation(s)</i>		
Documentation of Negotiation with Interested DBEs	Provide sufficient evidence demonstrating that good faith negotiations took place during the bid letting. <i>Such as: Documented attempts with DBEs or on behalf of DBEs to increase DBE participation</i>		
Documentation of Sound Reason for Rejecting DBEs	Provide sufficient evidence demonstrating that DBEs are rejected for sound reasons. <i>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.</i>		
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. <i>Such as: Variety of activities that translate into meaningful DBE participation</i>		
Documentation of other GFE activities	<i>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</i>		
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) Conducting 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

COMMITMENT TO SUBCONTRACT TO DBE

Wisconsin Department of Transportation

Proposal #

County:

DBE Goal Achieved:

0.00 %

\$	0.00	\$	0.00

**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: <i>(list all names of tiers if more than one)</i>	
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. 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 Representative's Signature	Date
	Participating DBE Firm Representative's Name (Print Name)	
	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

**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 PROVISIONS 5 FUEL COST ADJUSTMENT

A Description

Fuel Cost Adjustments will be applied to partial and final payments for work items categorized in Section B as a payment to the contractor or a credit to the department. ASP-5 shall not apply to any force account work.

B Categories of Work Items

The following items and Fuel Usage Factors shall be used to determine Fuel Cost Adjustments:

(1) Earthwork.		Unit	Gal. Fuel Per Unit
205.0100	Excavation Common	CY	0.23
205.0200	Excavation Rock	CY	0.39
205.0400	Excavation Marsh	CY	0.29
208.0100	Borrow	CY	0.23
208.1100	Select Borrow	CY	0.23
209.1100	Backfill Granular Grade 1	CY	0.23
209.1500	Backfill Granular Grade 1	Ton	0.115
209.2100	Backfill Granular Grade 2	CY	0.23
209.2500	Backfill Granular Grade 2	Ton	0.115
350.0102	Subbase	CY	0.28
350.0104	Subbase	Ton	0.14
350.0115	Subbase 6-Inch	SY	0.05
350.0120	Subbase 7-Inch	SY	0.05
350.0125	Subbase 8-Inch	SY	0.06
350.0130	Subbase 9-Inch	SY	0.07
350.0135	Subbase 10-Inch	SY	0.08
350.0140	Subbase 11-Inch	SY	0.09
350.0145	Subbase 12-Inch	SY	0.09

C Fuel Index

A Current Fuel Index (CFI) in dollars per gallon will be established by the Department of Transportation for each month. The CFI will be the price of No. 2 fuel oil, as reported in U.S. Oil Week, using the first issue dated that month. The CFI will be the average of prices quoted for Green Bay, Madison, Milwaukee and Minneapolis.

The base Fuel Index (BFI) for this contract is \$2.55 per gallon.

D Computing the Fuel Cost Adjustment

The engineer will compute the ratio CFI/BFI each month. If the ratio falls between 0.85 and 1.15, inclusive, no fuel adjustment will be made for that month. If the ratio is less than 0.85 a credit to the department will be computed. If the ratio is greater than 1.15 additional payment to the contractor will be computed. Credit or additional payment will be computed as follows:

- (1) The engineer will estimate the quantity of work done in that month under each of the contract items categorized in Section B.
- (2) The engineer will compute the gallons of fuel used in that month for each of the contract items categorized in Section B by applying the unit fuel usage factors shown in Section B.
- (3) The engineer will summarize the total gallons (Q) of fuel used in that month for the items categorized in Section B.
- (4) The engineer will determine the Fuel Cost Adjustment credit or payment from the following formula:

$$FA = \frac{CFI}{BFI} - 1 \times Q \times BFI$$

(plus is payment to contractor; minus is credit to the department)

Where	FA	=	Fuel Cost Adjustment (plus or minus)
	CFI	=	Current Fuel Index
	BFI	=	Base Fuel Index
	Q	=	Monthly total gallons of fuel

E Payment

A Fuel Cost Adjustment credit to the department will be deducted as a dollar amount each month from any sums due to the contractor. A Fuel Cost Adjustment payment to the contractor will be made as a dollar amount each month.

Upon completion of the work under the contract, any difference between the estimated quantities and the final quantities will be determined. An average CFI, calculated by averaging the CFI for all months that fuel cost adjustment was applied, will be applied to the quantity differences. The average CFI shall be applied in accordance with the procedure set forth in Section D.

Additional Special Provision 6 (ASP-6)

Modifications to the standard specifications

Make the following revisions to the standard specifications.

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.

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 procurement 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/WHDL/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 procurement 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 contract). "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 contractor). "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:

<u>County</u>	<u>%</u>	<u>County</u>	<u>%</u>	<u>County</u>	<u>%</u>
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 project¹; or
- The total amount of Federal financial assistance applied to the project, through awards or subaward, is below \$500,000²

The contractor shall take actions and provide documentation conforming to CMM 228.5 to ensure compliance with this Buy America provision.

<https://wisconsindot.gov/rdw/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. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price will be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

II. COVERAGE OF TRUCK DRIVERS

Truck drivers are covered by Davis-Bacon Minimum Wage Rates in the following circumstances:

- Drivers of a contractor or subcontractor for time spent working on the site of the work.
- Drivers of a contractor or subcontractor for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimis.
https://www.dol.gov/whd/FOH/FOH_Ch15.pdf
- Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the work and the actual construction site.
- Truck drivers transporting portions of the building or work between a site established specifically for the performance of the contract where a significant portion of such building or work is constructed and the physical place where the building or work called for in the contract will remain.

Truck drivers are not covered by Davis-Bacon Minimum Wage Rates in the following circumstances:

- Material delivery truck drivers while off the site of the work.
- Drivers of a contractor or subcontractor traveling between a Davis-Bacon job and a commercial supply facility while they are off the site of the work.”
- Truck drivers whose time spent on the site of the work is de minimis, such as only a few minutes at a time merely to pick up or drop off materials or supplies.

Details are available online at:

<https://www.dol.gov/whd/recovery/pwrb/Tab9.pdf>

<https://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/trckng.aspx>

III. POSTINGS AT THE SITE OF THE WORK

In addition to the required postings furnished by the department, the contractor shall post the following in at least one conspicuous and accessible place at the site of work:

- a. A copy of the contractor's Equal Employment Opportunity Policy.

All required documents shall be posted by the first day of work and be accurate and complete. Postings must be readable, in an area where they will be noticed, and maintained until the last day of work.

IV. RESOURCES

Required information regarding compliance with federal provisions is found in the following resources:

- FHWA-1273 included in this contract
- U.S. Department of Labor Prevailing Wage Resource Book
- U.S. Department of Labor Field Operations Handbook
- U.S. Code of Federal Regulations
- Any applicable law, Act, or Executive Order enacted by the federal government at the time of the letting of this contract

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>.

1	02/07/2025
2	02/21/2025
3	05/23/2025
4	06/06/2025
5	06/27/2025
6	07/04/2025
7	07/11/2025
8	07/25/2025

BRWI0001-002 06/03/2024

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPLEAU, 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 06/01/2025		
KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA COUNTIES		
	Rates	Fringes
CARPENTER.....	\$ 47.73	31.52

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 06/02/2025

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, JEFFERSON,
LAFAYETTE, RICHLAND, ROCK, SAUK, AND WALWORTH COUNTIES

	Rates	Fringes
Carpenter.....	\$ 42.45	28.78
Piledrivermen.....	\$ 44.45	28.78

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
PILEDRIIVER.....	\$ 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, TREMPLEAU, 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
PILEDRIIVER.....	\$ 42.44	28.44

CARP1143-002 06/03/2024		

BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPLEAU AND
VERNON COUNTIES

	Rates	Fringes
CARPENTER.....	\$ 42.44	28.44
PILEDRIIVER.....	\$ 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
PILEDRIIVER.....	\$ 42.44	28.44

CARP2337-009 06/03/2024		

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA

	Rates	Fringes
PILEDRIIVERMAN.....	\$ 42.21	34.07

ELEC0014-002 05/25/2025		

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, TREMPLEAU, VERNON, AND WASHBURN
COUNTIES

	Rates	Fringes
Electricians:.....	\$ 44.29	25.21

* ELEC0014-007 05/25/2025

ADAMS, ASHLAND, BARRON, BAYFIELD, BROWN, BUFFALO, BURNETT,
CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE,
DOOR, DOUGLAS, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST,
GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON,
JUNEAU, KENOSHA, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE,
LINCOLN, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE,
OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE, POLK, PORTAGE, PRICE,
RACINE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN,
ST CROIX, TAYLOR, TREMPLEAU, VERNON, VILAS, WALWORTH,
WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO AND WOOD COUNTIES

	Rates	Fringes

Teledata System Installer		
Installer/Technician.....	\$ 31.17	20.08

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(Wausaukee and area South thereof), OCONTO, MENOMINEE
(East of a line 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 06/01/2025		

DOUGLAS COUNTY

	Rates	Fringes
Electricians:.....	\$ 47.46	33.34

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 06/01/2025		

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:.....	\$ 50.86	28.26

ELEC0494-006 06/01/2025		

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:.....	\$ 45.20	25.27

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 carillon, 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

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

	Rates	Fringes
Power Equipment Operator		
Group 1.....	\$ 48.37	30.30
Group 2.....	\$ 47.87	30.30
Group 3.....	\$ 46.77	30.30
Group 4.....	\$ 46.51	30.30
Group 5.....	\$ 46.22	30.30
Group 6.....	\$ 40.32	30.30

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; bituminous 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 06/01/2025

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC,
MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO
COUNTIES:

	Rates	Fringes
IRONWORKER.....	\$ 44.66	33.67

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor
Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/01/2025

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3),
WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 47.52	33.67

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor
Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/01/2025

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.....	\$ 44.00	32.66

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 05/01/2025

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON,
PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPLEAU
COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 46.35	36.86

IRON0512-021 05/01/2025

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA,
PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 42.89	36.86

LAB00113-002 06/02/2025

MILWAUKEE AND WAUKESHA COUNTIES

	Rates	Fringes
LABORER		
Group 1.....	\$ 38.81	25.53
Group 2.....	\$ 38.96	25.53
Group 3.....	\$ 39.16	25.53
Group 4.....	\$ 39.31	25.53
Group 5.....	\$ 39.46	25.53
Group 6.....	\$ 35.30	25.53

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 Sawyer 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

LAB00113-003 06/02/2025

OZAUKEE AND WASHINGTON COUNTIES

	Rates	Fringes
LABORER		
Group 1.....	\$ 38.06	25.53
Group 2.....	\$ 38.16	25.53
Group 3.....	\$ 38.21	25.53
Group 4.....	\$ 38.41	25.53
Group 5.....	\$ 38.26	25.53
Group 6.....	\$ 35.15	25.53

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 Sawyer 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

LAB00113-011 06/02/2025

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
LABORER		
Group 1.....	\$ 37.87	25.53
Group 2.....	\$ 38.02	25.53
Group 3.....	\$ 38.22	25.53
Group 4.....	\$ 38.19	25.53
Group 5.....	\$ 38.52	25.53
Group 6.....	\$ 35.02	25.53

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 Sawyer 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

LAB00140-002 06/02/2025

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, TREMPLEAU, VERNON, VILLAS, WALWORTH, WASHBURN,
WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
LABORER		
Group 1.....	\$ 43.77	19.97
Group 2.....	\$ 43.87	19.97
Group 3.....	\$ 43.92	19.97
Group 4.....	\$ 44.12	19.97
Group 5.....	\$ 43.97	19.97
Group 6.....	\$ 40.40	19.97

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; 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 Sawyer 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; Traffic Control

LAB00464-003 06/02/2025

DANE COUNTY

	Rates	Fringes
LABORER		
Group 1.....	\$ 44.05	19.97

Group 2.....	\$ 44.15	19.97
Group 3.....	\$ 44.20	19.97
Group 4.....	\$ 44.40	19.97
Group 5.....	\$ 44.25	19.97
Group 6.....	\$ 40.40	19.97

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 Sawyer 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 05/05/2025

ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES

	Rates	Fringes
Painters:		
New:		
Brush, Roller.....	\$ 38.17	27.26
Spray, Sandblast, Steel....	\$ 38.77	27.26
Repaint:		
Brush, Roller.....	\$ 36.67	27.26
Spray, Sandblast, Steel....	\$ 37.27	27.26

PAIN0108-002 06/01/2025

RACINE COUNTY

	Rates	Fringes
Painters:		
Brush, Roller.....	\$ 43.64	23.35
Spray & Sandblast.....	\$ 44.64	23.35

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, TREMPLEAU, AND
VERNON COUNTIES

	Rates	Fringes
PAINTER.....	\$ 22.03	12.45

PAIN0781-002 06/01/2025

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Painters:		
Bridge.....	\$ 43.19	24.87
Brush.....	\$ 42.44	24.87
Spray & Sandblast.....	\$ 43.19	24.87

PAIN0802-002 06/01/2025

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND,
ROCK, AND SAUK COUNTIES

	Rates	Fringes
PAINTER		
Brush.....	\$ 37.65	21.17

PREMIUM PAY:
 Structural Steel, Spray, Bridges = \$1.00 additional per
 hour.

PAIN0802-003 06/01/2025

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.....	\$ 37.65	21.17

PAIN0934-001 06/01/2025

KENOSHA AND WALWORTH COUNTIES

	Rates	Fringes
Painters:		
Brush.....	\$ 40.62	26.37
Spray.....	\$ 41.62	26.37
Structural Steel.....	\$ 40.77	26.37

PAIN1011-002 06/01/2025

FLORENCE COUNTY

	Rates	Fringes
Painters:.....	\$ 31.17	15.92

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, TREMPLEAU, 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 06/01/2025		

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles.....	\$ 39.57	28.70
3 or more Axles; Euclids, Dumpton & Articulated,		
Truck Mechanic.....	\$ 39.72	28.70

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their

own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (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"

Superseded General Decision Number: WI20240008

State: Wisconsin

Construction Types: Heavy (Sewer and Water Line and Tunnel)

Counties: Wisconsin Statewide.

TUNNEL, SEWER & WATER LINE CONSTRUCTION PROJECTS

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>.

2	02/21/2025
3	05/23/2025
4	06/06/2025
5	06/27/2025
6	07/04/2025
7	07/11/2025

BRWI0001-002 06/03/2024

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPLEAU, 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 05/05/2025		

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 06/01/2025		

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
CARPENTER.....	\$ 47.73	31.52

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 06/02/2025		

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, JEFFERSON, LAFAYETTE, RICHLAND, ROCK, SAUK, AND WALWORTH COUNTIES

	Rates	Fringes
Carpenter.....	\$ 42.45	28.78
Piledrivermen.....	\$ 44.45	28.78

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, TREMPLEALEAU, 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, TREMPLEALEAU 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
PILEDRIIVER.....	\$ 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 05/25/2025

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, TREMPLEAU, VERNON, AND WASHBURN
COUNTIES

Rates	Fringes

Electricians:.....	\$ 44.29	25.21

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 line 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 06/01/2025

DOUGLAS COUNTY

Rates	Fringes

Electricians:.....	\$ 47.46	33.34

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 06/01/2025

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

Rates	Fringes

Electricians:.....	\$ 50.86	28.26

ELEC0494-006 06/01/2025

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

Rates	Fringes

Electricians:.....	\$ 45.20	25.27

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

ENGI0139-003 06/02/2025

REMAINING COUNTIES

	Rates	Fringes
Power Equipment Operator		
Group 1.....	\$ 50.53	27.89
Group 2.....	\$ 49.28	27.89
Group 3.....	\$ 45.73	27.89
Group 4.....	\$ 45.20	27.89
Group 5.....	\$ 43.13	27.89
Group 6.....	\$ 41.60	27.89

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 130,000 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 Sweepers; 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/Freeze 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

ENGI0139-007 06/02/2025

DODGE, FOND DU LAC, JEFFERSON, KENOSHA, MILWAUKEE, OZAUKEE, RACINE, SHEBOYGAN, WALWORTH, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Power Equipment Operator		
Group 1.....	\$ 47.19	28.15
Group 2.....	\$ 46.41	28.15
Group 3.....	\$ 45.46	28.15
Group 4.....	\$ 44.41	28.15
Group 5.....	\$ 43.01	28.15

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; Backhoes
(Excavators) 130,000 lbs and over; Caisson Rigs and Pile
Drivers

GROUP 2: Cranes, Tower Cranes and Derricks with or without
attachments with a lifting capacity of 100 tons or under;
or Cranes, Tower Cranes, and Derricks with boom, lead,
and/or jib lengths measuring 175 feet or under; Backhoes
(Excavators) under 130,000 lbs; Skid Rigs; Dredge Operator:
Traveling Crane (Bridge type); Concrete Paver over 27 E;
Concrete Spreader and Distributor; Concrete Pumps and
Boring Machines (directional)

GROUP 3: Material Hoists; Stack Hoists; Tractor or Truck
mounted Hydraulic Backhoe; Tractor or Truck Mounted
Hydraulic Crane, 5 tons or under; Manhoist; Tractor over 40
hp; Bulldozer over 40 hp; Endloader over 40 hp; Forklift,
25 ft and over; Motor Patrol; Scraper Operator; Sideboom;
Straddle Carrier; Mechanic and Welder; Bituminous Plant and
Paver Operator; Roller over 5 tons; Percussion Drill
Operator; Rotary Drill Operator; Blaster; Air Track Drill;
Trencher (wheel type or chain type having over 8 inch
bucket); Elevator; Milling Machine and Boring Machine
(horizontal or vertical); Backhoe Mounted Compactor

GROUP 4: Backfiller; Concrete Auto Breaker (large); Concrete
Finishing Machine (road type); Roller, Rubber Tire;
Concrete Batch Hopper; Concrete Conveyor System; Concrete
Mixers (14S or over); Screw type Pumps and Gypsum Pumps;
Grout Pumps; Tractor, Bulldozer, End Loader, under 40 hp;
Pumps (well points); Trencher (chain type 8 inch or smaller
bucket); Industrial Locomotives; Roller under 5 tons;
Fireman (Piledrivers and Derricks); Robotic Tool Carrier
with or without attachments.

GROUP 5: Hoists (Automatic); Forklift, 12 ft to 25 ft;
Tampers-Compactors, riding type; A-Frame and Winch Trucks;
Concrete Auto Breaker; Hydrohammer, small; Brooms and
Sweepers; Hoist (Tuggers); Stump Chipper, large; Boats
(Tug, Safety, Work Barges and Launch); Shouldering Machine
Operator; Screed Operator; Farm or Industrial Tractor; Post
Hole Digger; Stone Crushers and Screening Plants; Firemen
(Asphalt Plants); Air Compressor (400 CFM or over); Augers
(vertical and horizontal); Generators, 150 KW and over;
Air, Electric Hydraulic Jacks (Slipform); Prestress
Machines; Skid Steer Loader with or without attachments;
Boiler operators (temporary heat); Forklift, 12 ft and
under; Screed Operator Milling Machine; Refrigeration
Plant/Freeze Machine; Power Pack Vibratory/Ultra Sound
Driver and Extractor; Generators under 150 KW; Combination
small equipment operator; Compressors under 400 CFM;
Welding Machines; Heaters, Mechanical; Pumps; Winches,
Small Electric; Oiler and Greaser; Conveyor; High pressure
utility locating machine (daylighting machine).

IRON0008-002 06/01/2025

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC,
MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO
COUNTIES:

	Rates	Fringes
IRONWORKER.....	\$ 44.66	33.67

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/01/2025

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3),
WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 47.52	33.67

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/01/2025

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.....	\$ 44.00	32.66

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 05/01/2025

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON,
PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPLEAU
COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 46.35	36.86

* IRON0512-021 05/01/2025

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA,
PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes

IRONWORKER.....\$ 42.89 36.86

LAB00113-004 06/01/2025

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Laborers: (Open Cut)		
Group 1.....	\$ 19.99	24.42
Group 2.....	\$ 22.54	24.42
Group 3.....	\$ 26.53	24.42
Group 4.....	\$ 37.05	24.42
Group 5.....	\$ 37.23	24.42
Group 6.....	\$ 37.29	24.42
Group 7.....	\$ 41.62	24.42
Group 8.....	\$ 44.78	24.42
Group 9.....	\$ 45.51	24.42

LABORERS CLASSIFICATIONS [OPEN CUT]

GROUP 1: Yard Laborer

GROUP 2: Landscaper

GROUP 3: Flag Person

GROUP 4: Paving Laborer

GROUP 5: General Laborer on Surface; Top Man

GROUP 6: Mud Mixer

GROUP 7: Mucker; Form Stripper; Bottom Digger and Misc;
Bottom Man and Welder on Surface

GROUP 8: Concrete Manhole Builder; Caisson Worker; Miner;
Pipe Layer; Rock Driller and Joint Man; Timber Man and
Concrete Brusher; Bracer in Trench Behind Machine & Tight
Sheeting; Concrete Formsetter and Shoveler; Jackhammer
Operator

GROUP 9: Blaster

LAB00113-005 06/01/2025

SEWER, TUNNEL & UNDERGROUND

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
Laborers:		
Group 1.....	\$ 27.49	24.42
Group 2.....	\$ 34.17	24.42
Group 3.....	\$ 38.89	24.42
Group 4.....	\$ 40.88	24.42

TUNNEL WORK UNDER COMPRESSED AIR: 0-15 lbs add \$1.00, 15-30
lbs add \$2.00, over 30 lbs add \$3.00

LABORERS CLASSIFICATIONS

GROUP 1: Flagperson

GROUP 2: Top Man, General Laborer, Wellpoint Installation,
Wire Mesh and Reinforcement, Concrete Worker, Form
Stripper, Strike-off Work

GROUP 3: Machine and Equipment Operator, Sheeting, Form
Setting, Patch Finisher, Bottom Man, Joint Sawyer, Gunnite
Man, Manhole Builder, Welder-Torchman, Blaster, Caulker,
Bracer, Bull Float, Conduit Worker, Mucker and Car Pusher,
Raker and Luteman, Hydraulic Jacking of Shields, Shield
Drivers, Mining Machine, Lock Tenders, Mucking Machine
Operator, Motor Men & Gauge Tenders and operation of
incidental Mechanical Equipment and all Power Driven Tools

GROUP 4: Pipelayer, Miner and Laser Operator

LAB00113-008 06/01/2025

MILWAUKEE, OZAUCREE, WASHINGTON & WAUKESHA COUNTIES

	Rates	Fringes
Laborers: (Tunnel-Free Air)		
Group 1.....	\$ 26.53	24.42
Group 2.....	\$ 37.23	24.42
Group 3.....	\$ 37.29	24.42
Group 4.....	\$ 41.62	24.42
Group 5.....	\$ 41.77	24.42
Group 6.....	\$ 44.78	24.42
Group 7.....	\$ 45.51	24.42

LABORERS CLASSIFICATIONS [TUNNEL - FREE AIR]:

GROUP 1: Flagperson

GROUP 2: General Laborer on surface; Tower Man

GROUP 3: Saw Man; Top Man

GROUP 4: Form Stripper; Car Pusher

GROUP 5: Mucker; Dinkey; Welder (rate on surface)

GROUP 6: Concrete Manhole Builder; Mucking Machine; Miner;
Mining Machine; Welder; Rock Driller; Concrete Buster; Jack
Hammer Operator; Caisson Worker; Pipelayer and Joint Man;
Bracerman

GROUP 7: Blaster

* LAB00113-009 06/01/2025

MILWAUKEE, OZAUCREE, WASHINGTON & WAUKESHA COUNTIES

	Rates	Fringes
Laborers: (Tunnel - *COMPRESSED AIR 0 - 15 lbs.)		
Group 1.....	\$ 26.53	24.42
Group 2.....	\$ 37.23	24.42
Group 3.....	\$ 42.22	24.42
Group 4.....	\$ 43.12	24.42

Group 5.....	\$ 43.27	24.42
Group 6.....	\$ 46.30	24.42
Group 7.....	\$ 46.99	24.42

LABORERS CLASSIFICATIONS [TUNNEL - COMPRESSED AIR]:

*Compressed Air 15 - 30 lbs add \$2.00 to all classifications

*Compressed Air over 30 lbs add \$3.00 to all classifications

GROUP 1: Flagperson

GROUP 2: General Laborer on surface

GROUP 3: Lock Tender on surface

GROUP 4: Form Stripper; Car Pusher

GROUP 5: Mucker; Dinkey

GROUP 6: Mucking Machine; Miner; Mining Machine; Welder & Rock Driller; Lock Tender in tunnel; Concrete Buster; Jack Hammer Operator; Caisson Worker; Pielayer and Joint Man; Bracerman; Nozzle Man on Gunite; Timber Man; Concrete Brusher

GROUP 7: Blaster

NOTE: Hazardous & Toxic Waste Removal: add \$0.15 per hour.

LAB00140-005 06/01/2025

ADAMS, ASHLAND, BARRON, BROWN, BUFFALO, CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LACROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RICHLAND, ROCK, RUSK, ST CROIX, SAUK, SAWYER, SHAWANO, SHEBOYGAN, TAYLOR, TREMMPEALEAU, VERNON, VILAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
LABORER (SEWER & WATER)		
Group 1.....	\$ 36.98	19.97
Group 2.....	\$ 38.83	19.97
Group 3.....	\$ 39.13	19.97
Group 4.....	\$ 39.78	19.97

FOR ALL TUNNEL WORK UNDER COMPRESSED AIR: 0-15 lbs add \$1.00, 15-30 lbs add \$2.00, over 30 lbs add \$3.00

LABORER CLASSIFICATIONS:

GROUP 1: Flagperson

GROUP 2: General Laborer, Wellpoint Installation; Form Stripper; Strike Off worker

GROUP 3: Sheeting Formsetting; Patch Finisher; Bottom Man; Joint Sawyer; Gunnite Man; Manhole Builder; Welder;

Torchman; Blaster; Caulker Bracer; Bull Float; Mucker and Car Pusher; Raker and Luteman; Hydraulic jacking of shields, Shield Drivers; Mining Machine; Lock Tenders; Mucking Machine Operators; Motor Men and Gauge Tenders; Power Tool Operators

GROUP 4: Pipelayer, Miner, and Laser Operator

LAB00464-002 06/01/2025

DANE AND DOUGLAS COUNTIES

	Rates	Fringes
LABORER		
Group 1.....	\$ 36.88	19.97
Group 2.....	\$ 39.08	19.97
Group 3.....	\$ 39.38	19.97
Group 4.....	\$ 40.03	19.97

FOR ALL TUNNEL WORK UNDER COMPRESSED AIR: 0 - 15 lbs add \$1.00, 15- 30 lbs add \$2.00, over 30 lbs add \$3.00

LABORERS CLASSIFICATIONS:

GROUP 1: Flagperson

GROUP 2: General Laborer; Wellpoint Installation; Concrete Worker; Form Stripper; Strike Off worker

GROUP 3: Sheeting Formsetting; Patch Finisher; Bottom Man; Joint Sawyer; Gunnite Man; Manhole Builder; Welder; Torchman; Blaster; Caulker Bracer; Bull Float; Mucker and Car Pusher; Raker and Luteman; Hydraulic jacking of shields, Shield Drivers; Mining Machine; Lock Tenders; Mucking Machine Operators; Motor Men and Gauge Tenders; Power Tool Operators

GROUP 4: Pipelayer, Miner, and Laser Operator

LAB01091-010 06/01/2025

BAYFIELD, BURNETT, IRON, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
Laborers: (SEWER & WATER)		
Group 1.....	\$ 36.67	19.97
Group 2.....	\$ 38.73	19.97
Group 3.....	\$ 39.03	19.97
Group 4.....	\$ 39.68	19.97

FOR ALL TUNNEL WORK UNDER COMPRESSED AIR:
0 - 15 lbs add \$1.00, 15-30 lbs add \$2.00, over 30 lbs add \$3.00

LABORERS CLASSIFICATIONS:

GROUP 1: Flagperson

GROUP 2: Laborers, Wellpoint Installation; Form Stripper;

Strike Off worker

GROUP 3: Sheeting Formsetting; Patch Finisher; Bottom Man; Joint Sawyer; Gunnite Man; Manhole Builder; Welder; Torchman; Blaster; Caulker Bracer; Bull Float; Mucker and Car Pusher; Raker and Luteman; Hydraulic jacking of shields, Shield Drivers; Mining Machine; Lock Tenders; Mucking Machine Operators; Motor Men and Gauge Tenders; Power Tool Operators

GROUP 4: Pipelayer, Miner, and Laser Operator

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, TREMPLEAU, 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 06/01/2025

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles.....	\$ 39.57	28.70
3 or more Axles; Euclids, Dumpton & Articulated, Truck Mechanic.....	\$ 39.72	28.70

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (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.



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Contract Items

Alt Set ID:

Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0002	201.0105 Clearing	23.000 STA	_____.	_____.
0004	201.0120 Clearing	140.000 ID	_____.	_____.
0006	201.0205 Grubbing	23.000 STA	_____.	_____.
0008	201.0220 Grubbing	140.000 ID	_____.	_____.
0010	203.0220 Removing Structure (structure) 0010. R-40-10	1.000 EACH	_____.	_____.
0012	203.0220 Removing Structure (structure) 0033. R-40-33	1.000 EACH	_____.	_____.
0014	203.0220 Removing Structure (structure) 0043. B-40-43	1.000 EACH	_____.	_____.
0016	203.0220 Removing Structure (structure) 0057. B-40-57	1.000 EACH	_____.	_____.
0018	203.0220 Removing Structure (structure) 0513. B-40-513	1.000 EACH	_____.	_____.
0020	203.0220 Removing Structure (structure) 1000. CIP Concrete Retaining Wall 415EW+60 - 416EW+83	1.000 EACH	_____.	_____.
0022	204.0100 Removing Concrete Pavement	18,770.000 SY	_____.	_____.
0024	204.0110 Removing Asphaltic Surface	4,290.000 SY	_____.	_____.
0026	204.0115 Removing Asphaltic Surface Butt Joints	170.000 SY	_____.	_____.
0028	204.0120 Removing Asphaltic Surface Milling	95,720.000 SY	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0030	204.0150 Removing Curb & Gutter	130.000 LF	_____.	_____.
0032	204.0155 Removing Concrete Sidewalk	1,560.000 SY	_____.	_____.
0034	204.0157 Removing Concrete Barrier	2,170.000 LF	_____.	_____.
0036	204.0165 Removing Guardrail	1,400.000 LF	_____.	_____.
0038	204.0170 Removing Fence	2,840.000 LF	_____.	_____.
0040	204.0195 Removing Concrete Bases	26.000 EACH	_____.	_____.
0042	204.0210 Removing Manholes	14.000 EACH	_____.	_____.
0044	204.0220 Removing Inlets	38.000 EACH	_____.	_____.
0046	204.0245 Removing Storm Sewer (size) 0001. 12-Inch	1,321.000 LF	_____.	_____.
0048	204.0245 Removing Storm Sewer (size) 0002. 15-Inch	1.000 LF	_____.	_____.
0050	204.0245 Removing Storm Sewer (size) 0003. 18-Inch	238.000 LF	_____.	_____.
0052	204.0245 Removing Storm Sewer (size) 0004. 21-Inch	351.000 LF	_____.	_____.
0054	204.0245 Removing Storm Sewer (size) 0005. 24-Inch	428.000 LF	_____.	_____.
0056	204.0245 Removing Storm Sewer (size) 0006. 27-Inch	276.000 LF	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0058	204.0245 Removing Storm Sewer (size) 0007. 30-Inch	20.000 LF	_____.	_____.
0060	204.0250 Abandoning Manholes	1.000 EACH	_____.	_____.
0062	204.0265 Abandoning Wells	3.000 EACH	_____.	_____.
0064	204.0291.S Abandoning Sewer	5.000 CY	_____.	_____.
0066	204.9001.S Removing Advance Flasher Assemblies Type 1	1.000 EACH	_____.	_____.
0068	204.9060.S Removing (item description) 0001. Steps Railing	2.000 EACH	_____.	_____.
0070	204.9060.S Removing (item description) 1002. Lighting Units	35.000 EACH	_____.	_____.
0072	204.9060.S Removing (item description) 3101. Traffic Signals W St Paul Ave & N 27th St	1.000 EACH	_____.	_____.
0074	204.9165.S Removing (item description) 0002. Landscape Rock	1,360.000 SF	_____.	_____.
0076	205.0100 Excavation Common	70,498.000 CY	_____.	_____.
0078	205.0501.S Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	1,415.000 TON	_____.	_____.
0080	206.1001 Excavation for Structures Bridges (structure) 1083. B-40-1083	1.000 EACH	_____.	_____.
0082	206.3001 Excavation for Structures Retaining Walls (structure) 0761. R-40-761	1.000 EACH	_____.	_____.
0084	209.0200.S Backfill Controlled Low Strength	40.000 CY	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0086	210.1500 Backfill Structure Type A	2,790.000 TON	_____.	_____.
0088	213.0100 Finishing Roadway (project) 0001. 1060-27-74	1.000 EACH	_____.	_____.
0090	305.0120 Base Aggregate Dense 1 1/4-Inch	23,680.000 TON	_____.	_____.
0092	312.0110 Select Crushed Material	29,470.000 TON	_____.	_____.
0094	390.0100 Removing Pavement for Base Patching	610.000 CY	_____.	_____.
0096	390.0201 Base Patching Asphaltic	100.000 TON	_____.	_____.
0098	390.0405 Base Patching Concrete SHES	110.000 CY	_____.	_____.
0100	405.0200 Coloring Concrete Custom	49.000 CY	_____.	_____.
0102	415.0210 Concrete Pavement Gaps	4.000 EACH	_____.	_____.
0104	415.0410 Concrete Pavement Approach Slab	345.000 SY	_____.	_____.
0106	416.0610 Drilled Tie Bars	420.000 EACH	_____.	_____.
0108	416.0620 Drilled Dowel Bars	550.000 EACH	_____.	_____.
0110	416.1715 Concrete Pavement Repair SHES	360.000 SY	_____.	_____.
0112	416.1720 Concrete Pavement Replacement	333.000 SY	_____.	_____.
0114	416.1725 Concrete Pavement Replacement SHES	10.000 SY	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0116	450.1100.S Asphaltic Mixture For Extreme Conditions	50.000 TON	_____.	_____.
0118	450.4000 HMA Cold Weather Paving	700.000 TON	_____.	_____.
0120	455.0605 Tack Coat	15,791.000 GAL	_____.	_____.
0122	460.2000 Incentive Density HMA Pavement	13,030.000 DOL	1.00000	13,030.00
0124	460.6223 HMA Pavement 3 MT 58-28 S	110.000 TON	_____.	_____.
0126	460.6224 HMA Pavement 4 MT 58-28 S	14,494.000 TON	_____.	_____.
0128	460.7223 HMA Pavement 3 HT 58-28 S	4,570.000 TON	_____.	_____.
0130	460.7424 HMA Pavement 4 HT 58-28 H	1,670.000 TON	_____.	_____.
0132	465.0105 Asphaltic Surface	7.000 TON	_____.	_____.
0134	465.0125 Asphaltic Surface Temporary	720.000 TON	_____.	_____.
0136	495.1000.S Cold Patch	100.000 TON	_____.	_____.
0138	501.1000.S Ice Hot Weather Concreting	47,210.000 LB	_____.	_____.
0140	502.0100 Concrete Masonry Bridges	1,382.000 CY	_____.	_____.
0142	502.0110.S Concrete Masonry Soldier Pile Footings 0761. R-40-761	2,050.000 CY	_____.	_____.
0144	502.0120.S Non-Shrink Grout	6.000 CF	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0146	502.3101 Expansion Device	200.000 LF	_____.	_____.
0148	502.3200 Protective Surface Treatment	4,019.000 SY	_____.	_____.
0150	502.3210 Pigmented Surface Sealer	338.000 SY	_____.	_____.
0152	502.4206 Adhesive Anchors No. 6 Bar	160.000 EACH	_____.	_____.
0154	504.0500 Concrete Masonry Retaining Walls	1,615.000 CY	_____.	_____.
0156	505.0400 Bar Steel Reinforcement HS Structures	87,160.000 LB	_____.	_____.
0158	505.0600 Bar Steel Reinforcement HS Coated Structures	650,100.000 LB	_____.	_____.
0160	505.0910 Bar Couplers No. 10	348.000 EACH	_____.	_____.
0162	506.0605 Structural Steel HS	1,153,680.000 LB	_____.	_____.
0164	506.3015 Welded Stud Shear Connectors 7/8x6-Inch	16,746.000 EACH	_____.	_____.
0166	506.3020 Welded Stud Shear Connectors 7/8x7-Inch	54.000 EACH	_____.	_____.
0168	506.3035 Welded Stud Shear Connectors 7/8x10-Inch	7,952.000 EACH	_____.	_____.
0170	506.5000 Bearing Assemblies Fixed (structure) 1083. B-40-1083	22.000 EACH	_____.	_____.
0172	506.6000 Bearing Assemblies Expansion (structure) 0513. B-40-513_5	9.000 EACH	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0174	506.6000 Bearing Assemblies Expansion (structure) 1083.B-40-1083	21.000 EACH	_____.	_____.
0176	509.1500 Concrete Surface Repair	250.000 SF	_____.	_____.
0178	511.1200 Temporary Shoring (structure) 0010. R-40-10	3,420.000 SF	_____.	_____.
0180	511.1200 Temporary Shoring (structure) 0761. R-40-761	568.000 SF	_____.	_____.
0182	511.2200 Temporary Shoring Left in Place (structure) 0057. B-40-57	1,000.000 SF	_____.	_____.
0184	511.2200 Temporary Shoring Left in Place (structure) 0761. R-40-761	223.000 SF	_____.	_____.
0186	511.2300 Temporary Shoring Left in Place (location) 0001. IH 94 EB	3,300.000 SF	_____.	_____.
0188	511.2300 Temporary Shoring Left in Place (location) 0002. IH 94 WB	900.000 SF	_____.	_____.
0190	512.0500 Piling Steel Sheet Permanent Delivered	225.000 SF	_____.	_____.
0192	512.0600 Piling Steel Sheet Permanent Driven	225.000 SF	_____.	_____.
0194	513.2001 Railing Pipe 0761. R-40-761	1,615.000 LF	_____.	_____.
0196	513.4091 Railing Tubular Screening	826.000 LF	_____.	_____.
0198	514.0450 Floor Drains Type WF	5.000 EACH	_____.	_____.
0200	514.2608 Downspout 8-Inch	270.000 LF	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0202	516.0100 Dampproofing	7,442.000 SY	_____.	_____.
0204	516.0500 Rubberized Membrane Waterproofing	30.000 SY	_____.	_____.
0206	517.0601 Painting Epoxy System (structure) 0513. B-40-513_5	1.000 EACH	_____.	_____.
0208	517.0601 Painting Epoxy System (structure) 0761. R-40-761	1.000 EACH	_____.	_____.
0210	517.0601 Painting Epoxy System (structure) 1083. B-40-1083	1.000 EACH	_____.	_____.
0212	517.0901.S Preparation and Coating of Top Flanges (structure) 0513. B-40-513_5	1.000 EACH	_____.	_____.
0214	517.1801.S Structure Repainting Recycled Abrasive (structure) 0513. B-40-513_5	1.000 EACH	_____.	_____.
0216	517.4501.S Negative Pressure Containment and Collection of Waste Materials (structure) 0513. B-40-513_5	1.000 EACH	_____.	_____.
0218	517.6001.S Portable Decontamination Facility	1.000 EACH	_____.	_____.
0220	531.1100 Concrete Masonry Ancillary Structures Type NS	5.000 CY	_____.	_____.
0222	531.1140 Steel Reinforcement HS Ancillary Structures Type NS	720.000 LB	_____.	_____.
0224	531.2024 Drilling Shaft 24-Inch	40.000 LF	_____.	_____.
0226	601.0331 Concrete Curb & Gutter 31-Inch	3,023.000 LF	_____.	_____.
0228	601.0405 Concrete Curb & Gutter 18-Inch Type A	22.000 LF	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0230	601.0553 Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	287.000 LF	_____.	_____.
0232	601.0600 Concrete Curb Pedestrian	56.000 LF	_____.	_____.
0234	602.0410 Concrete Sidewalk 5-Inch	17,550.000 SF	_____.	_____.
0236	602.0515 Curb Ramp Detectable Warning Field Natural Patina	170.000 SF	_____.	_____.
0238	602.0615 Curb Ramp Detectable Warning Field Radial Natural Patina	15.000 SF	_____.	_____.
0240	602.0815 Concrete Driveway 7-Inch	155.000 SY	_____.	_____.
0242	602.0865 Concrete Driveway HES 7-Inch	140.000 SY	_____.	_____.
0244	602.1500 Concrete Steps	135.000 SF	_____.	_____.
0246	603.8000 Concrete Barrier Temporary Precast Delivered	9,312.500 LF	_____.	_____.
0248	603.8125 Concrete Barrier Temporary Precast Installed	17,137.500 LF	_____.	_____.
0250	603.8500 Anchoring Concrete Barrier Temporary Precast	2,275.000 LF	_____.	_____.
0252	608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	1,579.000 LF	_____.	_____.
0254	608.0315 Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	2,107.000 LF	_____.	_____.
0256	608.0318 Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	152.000 LF	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0258	608.0324 Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	1,072.000 LF	_____.	_____.
0260	608.0330 Storm Sewer Pipe Reinforced Concrete Class III 30-Inch	1,103.000 LF	_____.	_____.
0262	608.0412 Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	51.000 LF	_____.	_____.
0264	608.0430 Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch	92.000 LF	_____.	_____.
0266	608.0442 Storm Sewer Pipe Reinforced Concrete Class IV 42-Inch	13.000 LF	_____.	_____.
0268	611.0530 Manhole Covers Type J	16.000 EACH	_____.	_____.
0270	611.0612 Inlet Covers Type C	2.000 EACH	_____.	_____.
0272	611.0624 Inlet Covers Type H	3.000 EACH	_____.	_____.
0274	611.0627 Inlet Covers Type HM	5.000 EACH	_____.	_____.
0276	611.0642 Inlet Covers Type MS	4.000 EACH	_____.	_____.
0278	611.0654 Inlet Covers Type V	47.000 EACH	_____.	_____.
0280	611.0656 Inlet Covers Type VV-B	12.000 EACH	_____.	_____.
0282	611.1004 Catch Basins 4-FT Diameter	33.000 EACH	_____.	_____.
0284	611.1005 Catch Basins 5-FT Diameter	2.000 EACH	_____.	_____.
0286	611.2004 Manholes 4-FT Diameter	21.000 EACH	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0288	611.2005 Manholes 5-FT Diameter	20.000 EACH	_____.	_____.
0290	611.2006 Manholes 6-FT Diameter	3.000 EACH	_____.	_____.
0292	611.2007 Manholes 7-FT Diameter	1.000 EACH	_____.	_____.
0294	611.3004 Inlets 4-FT Diameter	23.000 EACH	_____.	_____.
0296	611.3220 Inlets 2x2-FT	1.000 EACH	_____.	_____.
0298	611.3225 Inlets 2x2.5-FT	37.000 EACH	_____.	_____.
0300	611.3230 Inlets 2x3-FT	2.000 EACH	_____.	_____.
0302	611.3902 Inlets Median 2 Grate	2.000 EACH	_____.	_____.
0304	611.8110 Adjusting Manhole Covers	16.000 EACH	_____.	_____.
0306	611.8115 Adjusting Inlet Covers	4.000 EACH	_____.	_____.
0308	611.8120.S Cover Plates Temporary	12.000 EACH	_____.	_____.
0310	612.0206 Pipe Underdrain Unperforated 6-Inch	455.000 LF	_____.	_____.
0312	612.0208 Pipe Underdrain Unperforated 8-Inch	85.000 LF	_____.	_____.
0314	612.0406 Pipe Underdrain Wrapped 6-Inch	185.000 LF	_____.	_____.
0316	612.0806 Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	4.000 EACH	_____.	_____.
0318	614.0905 Crash Cushions Temporary	5.000 EACH	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0320	616.0206 Fence Chain Link 6-FT	1,770.000 LF	_____.	_____.
0322	616.0329 Gates Chain Link (width) 0001. 4-FT	1.000 EACH	_____.	_____.
0324	616.0329 Gates Chain Link (width) 0002. 12-FT	1.000 EACH	_____.	_____.
0326	616.0700.S Fence Safety	9.000 LF	_____.	_____.
0328	619.1000 Mobilization	1.000 EACH	_____.	_____.
0330	620.0300 Concrete Median Sloped Nose	189.000 SF	_____.	_____.
0332	623.0200 Dust Control Surface Treatment	27,800.000 SY	_____.	_____.
0334	624.0100 Water	376.000 MGAL	_____.	_____.
0336	625.0100 Topsoil	8,010.000 SY	_____.	_____.
0338	625.0500 Salvaged Topsoil	19,930.000 SY	_____.	_____.
0340	627.0200 Mulching	22,830.000 SY	_____.	_____.
0342	628.1104 Erosion Bales	10.000 EACH	_____.	_____.
0344	628.1504 Silt Fence	3,810.000 LF	_____.	_____.
0346	628.1520 Silt Fence Maintenance	3,810.000 LF	_____.	_____.
0348	628.1905 Mobilizations Erosion Control	35.000 EACH	_____.	_____.
0350	628.1910 Mobilizations Emergency Erosion Control	26.000 EACH	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0352	628.2004 Erosion Mat Class I Type B	18,550.000 SY	_____.	_____.
0354	628.2006 Erosion Mat Urban Class I Type A	1,350.000 SY	_____.	_____.
0356	628.6510 Soil Stabilizer Type B	5.000 ACRE	_____.	_____.
0358	628.7005 Inlet Protection Type A	130.000 EACH	_____.	_____.
0360	628.7020 Inlet Protection Type D	225.000 EACH	_____.	_____.
0362	628.7504 Temporary Ditch Checks	245.000 LF	_____.	_____.
0364	628.7560 Tracking Pads	4.000 EACH	_____.	_____.
0366	628.7570 Rock Bags	125.000 EACH	_____.	_____.
0368	629.0210 Fertilizer Type B	20.000 CWT	_____.	_____.
0370	630.0120 Seeding Mixture No. 20	1,930.000 LB	_____.	_____.
0372	630.0200 Seeding Temporary	1,160.000 LB	_____.	_____.
0374	630.0500 Seed Water	470.000 MGAL	_____.	_____.
0376	631.0300 Sod Water	16.000 MGAL	_____.	_____.
0378	631.1000 Sod Lawn	1,500.000 SY	_____.	_____.
0380	633.5350 Markers Permanent Flexible	20.000 EACH	_____.	_____.
0382	634.0620 Posts Wood 4x6-Inch X 20-FT	48.000 EACH	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0384	635.0200 Sign Supports Structural Steel HS	1,600.000 LB	_____.	_____.
0386	637.2210 Signs Type II Reflective H	522.100 SF	_____.	_____.
0388	637.2215 Signs Type II Reflective H Folding	20.720 SF	_____.	_____.
0390	637.2220 Signs Type II Reflective SH	6.750 SF	_____.	_____.
0392	637.2230 Signs Type II Reflective F	531.000 SF	_____.	_____.
0394	638.2101 Moving Signs Type I	2.000 EACH	_____.	_____.
0396	638.2102 Moving Signs Type II	63.000 EACH	_____.	_____.
0398	638.2602 Removing Signs Type II	80.000 EACH	_____.	_____.
0400	638.3000 Removing Small Sign Supports	57.000 EACH	_____.	_____.
0402	638.3100 Removing Structural Steel Sign Supports	4.000 EACH	_____.	_____.
0404	643.0300 Traffic Control Drums	159,650.000 DAY	_____.	_____.
0406	643.0410 Traffic Control Barricades Type II	7,225.000 EACH	_____.	_____.
0408	643.0420 Traffic Control Barricades Type III	38,550.000 DAY	_____.	_____.
0410	643.0705 Traffic Control Warning Lights Type A	77,070.000 DAY	_____.	_____.
0412	643.0715 Traffic Control Warning Lights Type C	40,790.000 DAY	_____.	_____.
0414	643.0810.S Connected Arrow Board	2,400.000 DAY	_____.	_____.



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0416	643.0900 Traffic Control Signs	249,210.000 DAY	_____.	_____.
0418	643.0910 Traffic Control Covering Signs Type I	45.000 EACH	_____.	_____.
0420	643.0920 Traffic Control Covering Signs Type II	325.000 EACH	_____.	_____.
0422	643.1000 Traffic Control Signs Fixed Message	925.000 SF	_____.	_____.
0424	643.1050 Traffic Control Signs PCMS	2,430.000 DAY	_____.	_____.
0426	643.1220.S Connected Work Zone Start and End Location Markers	1,435.000 DAY	_____.	_____.
0428	643.3150 Temporary Marking Line Removable Tape 4-Inch	3,170.000 LF	_____.	_____.
0430	643.3170 Temporary Marking Line Epoxy 6-Inch	51,300.000 LF	_____.	_____.
0432	643.3175 Temporary Marking Line Black Epoxy 6-Inch	1,625.000 LF	_____.	_____.
0434	643.3180 Temporary Marking Line Removable Tape 6-Inch	14,915.000 LF	_____.	_____.
0436	643.3270 Temporary Marking Line Epoxy 10-Inch	2,740.000 LF	_____.	_____.
0438	643.3550 Temporary Marking Arrow Removable Tape	3.000 EACH	_____.	_____.
0440	643.3760 Temporary Marking Raised Pavement Marker Type I	265.000 EACH	_____.	_____.
0442	643.3960 Temporary Marking Removable Mask Out Tape 6-Inch	2,300.000 LF	_____.	_____.



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0444	643.4100 Traffic Control Interim Lane Closure	528.000 EACH	_____.	_____.
0446	643.5000 Traffic Control	1.000 EACH	_____.	_____.
0448	644.1410 Temporary Pedestrian Surface Asphalt	250.000 SF	_____.	_____.
0450	644.1430 Temporary Pedestrian Surface Plate	100.000 SF	_____.	_____.
0452	644.1601 Temporary Pedestrian Curb Ramp	25.000 DAY	_____.	_____.
0454	644.1605 Temporary Pedestrian Detectable Warning Field	15.000 SF	_____.	_____.
0456	644.1810 Temporary Pedestrian Barricade	650.000 LF	_____.	_____.
0458	644.1900.S Temporary Audible Message Devices	3,510.000 DAY	_____.	_____.
0460	645.0111 Geotextile Type DF Schedule A	120.000 SY	_____.	_____.
0462	646.1020 Marking Line Epoxy 4-Inch	23,887.000 LF	_____.	_____.
0464	646.2020 Marking Line Epoxy 6-Inch	92,546.000 LF	_____.	_____.
0466	646.3020 Marking Line Epoxy 8-Inch	2,530.000 LF	_____.	_____.
0468	646.4020 Marking Line Epoxy 10-Inch	13,923.000 LF	_____.	_____.
0470	646.4040 Marking Line Grooved Wet Ref Epoxy 10-Inch	177.000 LF	_____.	_____.
0472	646.5020 Marking Arrow Epoxy	40.000 EACH	_____.	_____.



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0474	646.5120 Marking Word Epoxy	7.000 EACH	_____.	_____.
0476	646.5220 Marking Symbol Epoxy	63.000 EACH	_____.	_____.
0478	646.6120 Marking Stop Line Epoxy 18-Inch	392.000 LF	_____.	_____.
0480	646.7120 Marking Diagonal Epoxy 12-Inch	697.000 LF	_____.	_____.
0482	646.7220 Marking Chevron Epoxy 24-Inch	287.000 LF	_____.	_____.
0484	646.7420 Marking Crosswalk Epoxy Transverse Line 6-Inch	1,617.000 LF	_____.	_____.
0486	646.8120 Marking Curb Epoxy	20.000 LF	_____.	_____.
0488	646.8220 Marking Island Nose Epoxy	1.000 EACH	_____.	_____.
0490	646.9000 Marking Removal Line 4-Inch	2,100.000 LF	_____.	_____.
0492	646.9010 Marking Removal Line Water Blasting 4-Inch	2,280.000 LF	_____.	_____.
0494	646.9050 Marking Removal Line Grooved Permanent Tape 4-Inch	2,060.000 LF	_____.	_____.
0496	646.9100 Marking Removal Line 8-Inch	90.000 LF	_____.	_____.
0498	646.9300 Marking Removal Special Marking	3.000 EACH	_____.	_____.
0500	652.0125 Conduit Rigid Metallic 2-Inch	102.000 LF	_____.	_____.
0502	652.0210 Conduit Rigid Nonmetallic Schedule 40 1-Inch	420.000 LF	_____.	_____.



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0504	652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch	2,450.000 LF	_____.	_____.
0506	652.0235 Conduit Rigid Nonmetallic Schedule 40 3-Inch	4,178.000 LF	_____.	_____.
0508	652.0335 Conduit Rigid Nonmetallic Schedule 80 3-Inch	206.000 LF	_____.	_____.
0510	652.0615 Conduit Special 3-Inch	39.000 LF	_____.	_____.
0512	652.0700.S Install Conduit into Existing Item	8.000 EACH	_____.	_____.
0514	653.0140 Pull Boxes Steel 24x42-Inch	3.000 EACH	_____.	_____.
0516	653.0222 Junction Boxes 18x12x6-Inch	11.000 EACH	_____.	_____.
0518	653.0905 Removing Pull Boxes	12.000 EACH	_____.	_____.
0520	654.0102 Concrete Bases Type 2	2.000 EACH	_____.	_____.
0522	654.0105 Concrete Bases Type 5	18.000 EACH	_____.	_____.
0524	654.0120 Concrete Bases Type 10-Special	2.000 EACH	_____.	_____.
0526	655.0144 Cable In Duct 4-4 AWG	606.000 LF	_____.	_____.
0528	655.0305 Cable Type UF 2-12 AWG Grounded	800.000 LF	_____.	_____.
0530	655.0320 Cable Type UF 2-10 AWG Grounded	30.000 LF	_____.	_____.
0532	655.0510 Electrical Wire Traffic Signals 12 AWG	407.000 LF	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0534	655.0630 Electrical Wire Lighting 4 AWG	829.000 LF	_____.	_____.
0536	657.0255 Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	20.000 EACH	_____.	_____.
0538	659.0601 Underdeck Lighting (structure) 0015. B-40-0015	1.000 EACH	_____.	_____.
0540	659.1215 Luminaires Underdeck LED C	2.000 EACH	_____.	_____.
0542	659.5000.S Lamp, Ballast, LED, Switch Disposal by Contractor	60.000 EACH	_____.	_____.
0544	661.0201 Temporary Traffic Signals for Intersections (location) 3101. W St Paul Ave & N 27th St Left In Place	1.000 EACH	_____.	_____.
0546	662.1032.S Ramp Closure Gates 32-FT	1.000 EACH	_____.	_____.
0548	662.1037.S Ramp Closure Gates 37-FT	1.000 EACH	_____.	_____.
0550	670.0101 Field System Integrator	1.000 EACH	_____.	_____.
0552	670.0201 ITS Documentation	1.000 EACH	_____.	_____.
0554	674.0300 Remove Cable	2,090.000 LF	_____.	_____.
0556	674.0400 Reinstall Cable	60.000 LF	_____.	_____.
0558	678.0036 Install Fiber Optic Cable Outdoor Plant 36-CT	490.000 LF	_____.	_____.
0560	678.0300 Fiber Optic Splice	112.000 EACH	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0562	678.0501 Communication System Testing	1.000 EACH	_____.	_____.
0564	690.0150 Sawing Asphalt	4,210.000 LF	_____.	_____.
0566	690.0250 Sawing Concrete	6,170.000 LF	_____.	_____.
0568	715.0502 Incentive Strength Concrete Structures	38,578.000 DOL	1.00000	38,578.00
0570	715.0603 Incentive Strength Concrete Barrier	169.000 DOL	1.00000	169.00
0572	715.0715 Incentive Flexural Strength Concrete Pavement	2,004.000 DOL	1.00000	2,004.00
0574	801.0117 Railroad Flagging Reimbursement	200,000.000 DOL	1.00000	200,000.00
0576	ASP.1T0A On-the-Job Training Apprentice at \$5.00/HR	14,000.000 HRS	5.00000	70,000.00
0578	ASP.1T0G On-the-Job Training Graduate at \$5.00/HR	45,000.000 HRS	5.00000	225,000.00
0580	SPV.0035 Special 0001. Roadway Embankment	84,466.000 CY	_____.	_____.
0582	SPV.0035 Special 0004. Excavation, Hauling, and Reuse of Low-Level Petroleum Contaminated Soil	37,200.000 CY	_____.	_____.
0584	SPV.0035 Special 0005. Clay Cap	4,270.000 CY	_____.	_____.
0586	SPV.0035 Special 0006. Lightweight Foamed Concrete Fill Grade 1	19,333.000 CY	_____.	_____.
0588	SPV.0035 Special 0007. Lightweight Foamed Concrete Fill Grade 2	4,546.000 CY	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0590	SPV.0035 Special 4000. HPC Masonry Structures	1,247.000 CY	_____.	_____.
0592	SPV.0060 Special 0001. Baseline CPM Progress Schedule	1.000 EACH	_____.	_____.
0594	SPV.0060 Special 0002. Monthly CPM Progress Schedule Updates	23.000 EACH	_____.	_____.
0596	SPV.0060 Special 0010. Remove, Salvage and Reset Boulder	1.000 EACH	_____.	_____.
0598	SPV.0060 Special 0108. Concrete Barrier Transition Type S1	1.000 EACH	_____.	_____.
0600	SPV.0060 Special 0109. Concrete Barrier Transition Type S2	1.000 EACH	_____.	_____.
0602	SPV.0060 Special 0122. Sawing Concrete Barrier	5.000 EACH	_____.	_____.
0604	SPV.0060 Special 0123. Salvage Ramp Gate	2.000 EACH	_____.	_____.
0606	SPV.0060 Special 0129. Survey Project (1060-27-74)	1.000 EACH	_____.	_____.
0608	SPV.0060 Special 0150. Round Aluminum Sign Post System in Soft Surface 7-Foot	3.000 EACH	_____.	_____.
0610	SPV.0060 Special 0151. Round Aluminum Sign Post System in Soft Surface 10-Foot	38.000 EACH	_____.	_____.
0612	SPV.0060 Special 0152. Round Aluminum Sign Post System in Soft Surface 11-Foot	3.000 EACH	_____.	_____.
0614	SPV.0060 Special 0158. Round Aluminum Sign Post System in Concrete Surface 7-Foot	1.000 EACH	_____.	_____.



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0616	SPV.0060 Special 0159. Round Aluminum Sign Post System in Concrete Surface 10-Foot	1.000 EACH	_____.	_____.
0618	SPV.0060 Special 0160. Round Aluminum Sign Post System in Concrete Surface 11-Foot	2.000 EACH	_____.	_____.
0620	SPV.0060 Special 0170. Exposing Existing Infrastructure Paved Area	15.000 EACH	_____.	_____.
0622	SPV.0060 Special 0171. Exposing Existing Infrastructure Unpaved Area	15.000 EACH	_____.	_____.
0624	SPV.0060 Special 0200. Vibration Control and Monitoring of 122-Inch Combined Sewer	1.000 EACH	_____.	_____.
0626	SPV.0060 Special 0552. Crash Cushions Temporary Low Maintenance Left In Place	3.000 EACH	_____.	_____.
0628	SPV.0060 Special 0554. Emergency Response to Traffic Incident Involving Conc Barrier Temp Precast	5.000 EACH	_____.	_____.
0630	SPV.0060 Special 0555. Emergency Response to Traffic Incident Involving Crash Cushion	5.000 EACH	_____.	_____.
0632	SPV.0060 Special 0556. Emergency Response to Pavement Repair	10.000 EACH	_____.	_____.
0634	SPV.0060 Special 0557. Fixed Message Sign Portable Support Special	2.000 EACH	_____.	_____.
0636	SPV.0060 Special 0559. Maintain and Repair Existing Crash Cushion	1.000 EACH	_____.	_____.
0638	SPV.0060 Special 0560. Maintain and Repair Existing Sand Barrel Arrays	1.000 EACH	_____.	_____.



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0640	SPV.0060 Special 0564. Traffic Control Close-Open Freeway to Freeway System Ramp	136.000 EACH	_____.	_____.
0642	SPV.0060 Special 0565. Traffic Control Close-Open Freeway Entrance Ramp	184.000 EACH	_____.	_____.
0644	SPV.0060 Special 0566. Traffic Control Full Freeway Closure	46.000 EACH	_____.	_____.
0646	SPV.0060 Special 0567. Traffic Control Signs Left In Place	4.000 EACH	_____.	_____.
0648	SPV.0060 Special 0569. Traffic Control Warning Lights Type A Left In Place	12.000 EACH	_____.	_____.
0650	SPV.0060 Special 0570. Traffic Control Barricades Type III Left In Place	6.000 EACH	_____.	_____.
0652	SPV.0060 Special 0571. Traffic Control Local Road Lane Closure	50.000 EACH	_____.	_____.
0654	SPV.0060 Special 0572. Thrie Beam Connection to Concrete Barrier Temporary Precast	1.000 EACH	_____.	_____.
0656	SPV.0060 Special 1001. Poles Wood 60-FT	4.000 EACH	_____.	_____.
0658	SPV.0060 Special 1002. Wood Pole Lighting 60-Ft	8.000 EACH	_____.	_____.
0660	SPV.0060 Special 1004. Luminaires Utility Floodlight	8.000 EACH	_____.	_____.
0662	SPV.0060 Special 1005. Poles Type 30-AL-BD	8.000 EACH	_____.	_____.
0664	SPV.0060 Special 1006. Poles Type 25-AL-BD	15.000 EACH	_____.	_____.



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0666	SPV.0060 Special 1010. Luminaire Historic Milwaukee Lantern LED3	17.000 EACH	_____.	_____.
0668	SPV.0060 Special 1013. Inline 5A Fast Acting Fuse With Holder	24.000 EACH	_____.	_____.
0670	SPV.0060 Special 1014. Luminaire Arms Single Member 6-Ft.	6.000 EACH	_____.	_____.
0672	SPV.0060 Special 1017. Luminaire Utility 2LED	3.000 EACH	_____.	_____.
0674	SPV.0060 Special 1018. Luminaire Utility 3LED	3.000 EACH	_____.	_____.
0676	SPV.0060 Special 1020. Pull Boxes 17-Inch X 30-Inch X 24-Inch	18.000 EACH	_____.	_____.
0678	SPV.0060 Special 1023. Submersible Multitap 3-Port Pre-Insulated Connector	58.000 EACH	_____.	_____.
0680	SPV.0060 Special 1024. Submersible Multitap 4-Port Pre-Insulated Connector	84.000 EACH	_____.	_____.
0682	SPV.0060 Special 1034. Maintenance of Lighting System (1060-27-74)	1.000 EACH	_____.	_____.
0684	SPV.0060 Special 1044. Lighting Systems Integrator Project (1060-27-74)	1.000 EACH	_____.	_____.
0686	SPV.0060 Special 1060. Lighting Equipment Painting Project 1060-27-74	1.000 EACH	_____.	_____.
0688	SPV.0060 Special 2000. Removing Electrical Service Meter Breaker Pedestal	1.000 EACH	_____.	_____.
0690	SPV.0060 Special 2050. Enter Existing Splice Enclosure	1.000 EACH	_____.	_____.



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0692	SPV.0060 Special 2057. Salvaged Signal Assembly Advance Flashed Type 2	1.000 EACH	_____.	_____.
0694	SPV.0060 Special 3101. Removing Monotube Concrete Bases	4.000 EACH	_____.	_____.
0696	SPV.0060 Special 3143. Temporary EVP System Left In Place W St Paul Ave & N 27th St	1.000 EACH	_____.	_____.
0698	SPV.0060 Special 3145. Monotube Base Anchor Bolt Cover Type 10 Special	2.000 EACH	_____.	_____.
0700	SPV.0060 Special 3146. Covering Traffic Signal Heads	6.000 EACH	_____.	_____.
0702	SPV.0060 Special 4000. Anchor Assemblies Light Poles on Structures	7.000 EACH	_____.	_____.
0704	SPV.0060 Special 4010. Bridge Jacking B-40-513_5	1.000 EACH	_____.	_____.
0706	SPV.0060 Special 4100. Thermal Integrity Profile (TIP) Testing, Drilled Shaft Foundation 34.65-In	17.000 EACH	_____.	_____.
0708	SPV.0060 Special 4110. Thermal Integrity Profile (TIP) Testing, Drilled Shaft Foundation 59.06-In	10.000 EACH	_____.	_____.
0710	SPV.0060 Special 4200. Crosshole Sonic Log (CSL) Testing, Drilled Foundation Shaft 34.65-Inch	17.000 EACH	_____.	_____.
0712	SPV.0060 Special 4210. Crosshole Sonic Log (CSL) Testing, Drilled Foundation Shaft 59.06-Inch	10.000 EACH	_____.	_____.
0714	SPV.0060 Special 4400. Tieback Anchors	472.000 EACH	_____.	_____.



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0716	SPV.0060 Special 4410. Tieback Anchors Performance Tests	31.000 EACH	_____.	_____.
0718	SPV.0060 Special 4600. Trial Drilled Foundation Shaft 34.65-Inch	1.000 EACH	_____.	_____.
0720	SPV.0060 Special 4700. Underdeck Utility Structure B-40-1083	1.000 EACH	_____.	_____.
0722	SPV.0060 Special 4800. Retaining Wall Instrumentation R-40-761	1.000 EACH	_____.	_____.
0724	SPV.0060 Special 4810. Retaining Wall Instrumentation R-40-767	1.000 EACH	_____.	_____.
0726	SPV.0060 Special 4900. Embedded Galvanic Anodes	136.000 EACH	_____.	_____.
0728	SPV.0060 Special 5000. Installing Hydrant	1.000 EACH	_____.	_____.
0730	SPV.0060 Special 5001. Removing Hydrant/Major	1.000 EACH	_____.	_____.
0732	SPV.0060 Special 5002. Installing Hydrant - Alteration	1.000 EACH	_____.	_____.
0734	SPV.0060 Special 5003. Adjusting Water Valve Boxes	24.000 EACH	_____.	_____.
0736	SPV.0060 Special 5004. Connect Original Service (C.O.S.)	1.000 EACH	_____.	_____.
0738	SPV.0060 Special 5200. Manholes Type TES 4-FT Diameter	3.000 EACH	_____.	_____.
0740	SPV.0060 Special 5201. Manholes Type TES Doghouse 4-FT Diameter	1.000 EACH	_____.	_____.



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Proposal ID: 20250909007 Project(s): 1060-27-74

Federal ID(s): WISC 2025597

SECTION: 0001

Contract Items

Alt Set ID:

Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0742	SPV.0060 Special 5202. Manholes Type TES 5-FT Diameter	1.000 EACH	_____.	_____.
0744	SPV.0060 Special 5204. Removing CUC Manholes	1.000 EACH	_____.	_____.
0746	SPV.0060 Special 5210. Install Cement Encased Conduit Into Existing Manhole	1.000 EACH	_____.	_____.
0748	SPV.0060 Special 5212. Adjusting TES Manhole	2.000 EACH	_____.	_____.
0750	SPV.0060 Special 8003. Reconnect Storm Sewer	47.000 EACH	_____.	_____.
0752	SPV.0060 Special 8005. Sealing Storm Structure	14.000 EACH	_____.	_____.
0754	SPV.0060 Special 8007. Cover Plates Left in Place	20.000 EACH	_____.	_____.
0756	SPV.0060 Special 8009. Manhole Cover Type MS 58A	5.000 EACH	_____.	_____.
0758	SPV.0060 Special 8010. Inlet Cover Type MS 57	34.000 EACH	_____.	_____.
0760	SPV.0060 Special 8100. Cover Plates Left In Place In Pavement	12.000 EACH	_____.	_____.
0762	SPV.0075 Special 0203. Pavement Cleanup Project (1060-27-74)	1,500.000 HRS	_____.	_____.
0764	SPV.0075 Special 4000. Obstructions, Drilled Foundation Shaft	40.000 HRS	_____.	_____.
0766	SPV.0075 Special 4010. Obstructions Foundation Drilling	120.000 HRS	_____.	_____.
0768	SPV.0085 Special 4000. Structural Steel HS Soldier Piles Delivered	1,616,194.000 LB	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0770	SPV.0085 Special 4010. Structural Steel HS Soldier Piles Installed	1,460,116.000 LB	_____.	_____.
0772	SPV.0090 Special 0260. Pipe Underdrain 6-Inch Special	8,850.000 LF	_____.	_____.
0774	SPV.0090 Special 0263. Removing Modular Block Retaining Wall	108.000 LF	_____.	_____.
0776	SPV.0090 Special 0264. Removing Railroad Tie Retaining Wall	74.000 LF	_____.	_____.
0778	SPV.0090 Special 0272. Marking Line Epoxy Block Style 12-Inch	144.000 LF	_____.	_____.
0780	SPV.0090 Special 0274. Marking Epoxy 6-Inch Black Non Grooved	11,734.000 LF	_____.	_____.
0782	SPV.0090 Special 0275. Marking Epoxy 10-Inch Black Non Grooved	2,370.000 LF	_____.	_____.
0784	SPV.0090 Special 0280. Fence Safety Left In Place	1,025.000 LF	_____.	_____.
0786	SPV.0090 Special 0285. Galvanized Pipe Railing	30.000 LF	_____.	_____.
0788	SPV.0090 Special 0701. Anchoring Concrete Barrier Temporary Precast Left In Place	2,550.000 LF	_____.	_____.
0790	SPV.0090 Special 0702. Concrete Barrier Temporary Precast Left In Place	5,300.000 LF	_____.	_____.
0792	SPV.0090 Special 0703. Fence Temporary 6-Foot	175.000 LF	_____.	_____.
0794	SPV.0090 Special 0704. Glare Screens Temporary	1,600.000 LF	_____.	_____.



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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0796	SPV.0090 Special 0705. Glare Screens Temporary Left In Place	1,652.000 LF	_____.	_____.
0798	SPV.0090 Special 1005. Liquidtight Flexible Nonmetallic 1 1/2 inch Conduit	5.000 LF	_____.	_____.
0800	SPV.0090 Special 1012. Electrical Cable Type 4#2/1#8 XLP	3,872.000 LF	_____.	_____.
0802	SPV.0090 Special 1013. Cable Aerial Aluminum 4 AWG Quadruplex Left In Place	2,110.000 LF	_____.	_____.
0804	SPV.0090 Special 4100. Drilled Foundation Shaft 34.65-Inch	800.000 LF	_____.	_____.
0806	SPV.0090 Special 4110. Drilled Foundation Shaft 59.06-Inch	415.000 LF	_____.	_____.
0808	SPV.0090 Special 4200. Foundation Drilling	12,350.000 LF	_____.	_____.
0810	SPV.0090 Special 4300. Remove Existing Steel Piling	40.000 LF	_____.	_____.
0812	SPV.0090 Special 5000. Ductile Iron (DI) AWWA C-151 Class 55 Watermain 6-Inch	34.000 LF	_____.	_____.
0814	SPV.0090 Special 5001. Ductile Iron (DI) AWWA C-151 Class 55 Watermain 12-Inch	34.000 LF	_____.	_____.
0816	SPV.0090 Special 5002. Ductile Iron Hydrant Branch 6-Inch	13.000 LF	_____.	_____.
0818	SPV.0090 Special 5200. 2-Duct Conduit Cement Encased 4-Inch Conduit DB-60	105.000 LF	_____.	_____.
0820	SPV.0090 Special 5201. 4-Duct Conduit Cement Encased 4-Inch Conduit DB-60	445.000 LF	_____.	_____.



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Contract Items

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0822	SPV.0090 Special 5202. 6-Duct Conduit Cement Encased 4-Inch Conduit DB-60	133.000 LF	_____.	_____.
0824	SPV.0090 Special 5203. 2-Duct Conduit Cement Encased 3-Inch Conduit DB-60	83.000 LF	_____.	_____.
0826	SPV.0090 Special 5210. Conduit Subduct 1-Inch	606.000 LF	_____.	_____.
0828	SPV.0090 Special 5215. Furnish Municipal Fiber Optic Cable 288 Count	786.000 LF	_____.	_____.
0830	SPV.0090 Special 5216. Install Fiber Optic Cable Outdoor Plant 288-Ct	1,465.000 LF	_____.	_____.
0832	SPV.0090 Special 5217. Removing Service Cable	706.000 LF	_____.	_____.
0834	SPV.0090 Special 8002. Drain Slotted Vane Permanent	1,793.000 LF	_____.	_____.
0836	SPV.0110 Special 4000. Timber Lagging	10.000 MBM	_____.	_____.
0838	SPV.0135 Special 0301. Vibration Monitoring	24.000 MON	_____.	_____.
0840	SPV.0165 Special 0400. Tactile Directional Indicator	600.000 SF	_____.	_____.
0842	SPV.0165 Special 0401. High Friction Traffic Marking Green Bike Lane Panel	70.000 SF	_____.	_____.
0844	SPV.0165 Special 0410. Wall Modular Block Gravity Landscape	762.000 SF	_____.	_____.
0846	SPV.0165 Special 4000. Geocomposite Drain Board	30,533.000 SF	_____.	_____.



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0848	SPV.0165 Special 4100. Temporary Wall Wire Faced Mechanically Stabilized Earth LFCF R-40-767	1,895.000 SF	_____.	_____.
0850	SPV.0165 Special 4761. Wall Concrete Panel Mechanically Stabilized Earth LFCF R-40-761	4,726.000 SF	_____.	_____.
0852	SPV.0165 Special 4767. Wall Concrete Panel Mechanically Stabilized Earth LFCF R-40-767	21,190.000 SF	_____.	_____.
0854	SPV.0180 Special 0421. HPC Pavement 9-Inch	6,280.000 SY	_____.	_____.
0856	SPV.0195 Special 0443. HMA Longitudinal Joint Repair	50.000 TON	_____.	_____.
0858	SPV.0195 Special 0444. HMA Transverse Joint Repair	25.000 TON	_____.	_____.
0860	SPV.0195 Special 0446. Management of Solid Waste - St Paul Ave / 27th St	930.000 TON	_____.	_____.
0862	SPV.0195 Special 0447. Management of Solid Waste - Greves St, East of 27th St	975.000 TON	_____.	_____.
0864	SPV.0195 Special 0448. Management of Solid Waste - Greves St, West of 27th St	510.000 TON	_____.	_____.

Section: 0001

Total:

Total Bid:

PLEASE ATTACH ADDENDA HERE