**HIGHWAY WORK PROPOSAL**

Proposal Number: Ø 2

Wisconsin Department of Transportation
DT1502 10/2010 s.66.29(7) Wis. Stats.

| COUNTY | STATE PROJECT ID | FEDERAL PROJECT ID | PROJECT DESCRIPTION | HIGHWAY |
|---|---|---|---|---|
| Racine | 1030-11-72 | WISC 2018 327 | N-S Freeway – CTH K Int., Mainline and Ramps | IH 94 |
| Racine | 1030-11-79 | WISC 2018 328 | N-S Freeway – STH 20 to CTH K, Mainline (North) | IH 94 |
| Racine | 1030-11-80 | WISC 2018 329 | N-S Freeway – STH 20 to CTH K, Mainline (South) | IH 94 |
| Racine | 1030-25-79 | WISC 2018 335 | N-S Freeway – CTH K to CTH G, Mainline | IH 94 |

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<br>Payable to: Wisconsin Department of Transportation | Attach Proposal Guaranty on back of this PAGE. |
| Bid Submittal Due<br>Date: May 22, 2018<br>Time (Local Time): 9:00 AM | Firm Name, Address, City, State, Zip Code<br>**SAMPLE**<br>**NOT FOR BIDDING PURPOSES** |
| Contract Completion Time<br>November 22, 2019 | |
| Assigned Disadvantaged Business Enterprise Goal<br>10 % | 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)

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

(Date Commission Expires)

**Notary Seal**

(Bidder Signature)

(Print or Type Bidder Name)

(Bidder Title)

**For Department Use Only**

| | |
|---|---|
| Type of Work<br>Removals, grading, base aggregate, HMA pavement, concrete pavement, concrete barrier wall, retaining wall structures, bridge structures, storm sewer, culverts, erosion control, permanent signing, FTMS, traffic control, pavement markings, fencing. | |
| Notice of Award Dated | Date Guaranty Returned |

# PLEASE ATTACH
# PROPOSAL GUARANTY HERE

**Effective with November 2007 Letting**

## PROPOSAL REQUIREMENTS AND CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

**Effective with August 2015 Letting**

# BID PREPARATION

## Preparing the Proposal Schedule of Items

### A General

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

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

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

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

The contractor is responsible for reviewing this web site for general notices as well as information regarding proposals in each letting. The department will also post special notices of all addenda to each proposal through this web site no later than 4:00 P.M. local time on the Thursday before the letting. Check the department's web site after 5:00 P.M. 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 P.M. 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:
http://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

or by calling the department at (608) 266-1631. Addenda can ONLY be obtained from the departments web site listed above or by picking up the addenda at the Bureau of Highway Construction, Room 601, 4802 Sheboygan Avenue, Madison, WI, during regular business hours.

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

## B Submitting Electronic Bids

### B.1 On the Internet

(1) Do the following before submitting the bid:

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

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

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

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

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

(1) Download the latest schedule of items from the Wisconsin pages of the Bid Express™ web site reflecting the latest addenda posted on the department's web site at:

http://wisconsindot.gov/Pages/doing-bus/contractors/hcci/bid-let.aspx

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

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

**Bidder**

**Name**

**BN00**

**Proposals: 1, 12, 14, & 22**

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

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

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

1. The check code printed on the bottom of the printout of the Expedite™ generated schedule of items is not the same on each page.
2. The check code printed on the printout of the Expedite™ generated schedule of items is not the same as the check code for that proposal provided on the diskette or CD ROM.
3. The diskette or CD ROM is not submitted at the time and place the department designates.

**C Waiver of Electronic Submittal**

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

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

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

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

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

# PROPOSAL BID BOND

Wisconsin Department of Transportation

DT1303 1/2006

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

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

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

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

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

**PRINCIPAL**

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

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

(Signature of Attorney-in-Fact)

**NOTARY FOR PRINCIPAL**

(Date)

State of Wisconsin )
) ss.
_____ County )

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

**Notary Seal**

**NOTARY FOR SURETY**

(Date)

State of Wisconsin )
) ss.
_____ County )

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

**Notary Seal**

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

# CERTIFICATE OF ANNUAL BID BOND

Wisconsin Department of Transportation

DT1305 8/2003

| |
|---|
| Time Period Valid (From/To) |
| Name of Surety |
| Name of Contractor |
| Certificate Holder<br>Wisconsin Department of Transportation |

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

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

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

(Signature of Authorized Contractor Representative) (Date)

**March 2010**

## LIST OF SUBCONTRACTORS

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

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

| Name of Subcontractor | Class of Work | Estimated Value |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**DECEMBER 2000**

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

Instructions for Certification

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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**SPECIAL PROVISIONS**

## 1. General.

Perform the work under this construction contract for Project IDs:

1030-11-72, IH 94 N-S Freeway - CTH K Interchange - Mainline and Ramps,
1030-11-79, IH 94 N-S Freeway - STH 20 to CTH K (North) - Mainline,
1030-11-80, IH 94 N-S Freeway, STH 20 to CTH K (South), Mainline,
1030-25-79, IH 94 N-S Freeway - CTH K to CTH G - Mainline,

all located in Racine 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, 2018 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 (20171130)

## 2. Scope of Work.

The work under this contract shall consist of removals, grading, base aggregate, HMA pavement, concrete pavement, concrete barrier wall, retaining wall structures, bridge structures, storm sewer, culverts, erosion control, permanent signing, FTMS, traffic control, pavement markings, fencing, 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)

## 3. Mandatory Pre-Bid Meeting.

*Add the following to standard spec 102.3.1 as paragraph three:*

(3) Prospective bidders are required to attend a mandatory pre-bid meeting on May 10, 2018 from 9:00 AM to 11:00 AM at the SC Johnson Integrated Manufacturing and Engineering Technology (iMET) Center at 2320 Renaissance Blvd., Sturtevant WI 53177.

The meeting agenda will include the following:

- Corridor Overview
- IH 94 N-S Freeway, STH 20 to CTH G
    - The meeting will discuss project specific issues for the IDs listed under the General article of these special provisions.
- Safety
- Contractor Compliance
- DBE Business Outreach Provision
- Adjacent projects
- Accelerated Bridge Construction (ABC) Elements
- Potential Sites for use for Batch Plants on Department Right-of-Way

No meeting minutes will be prepared, but a published response will be sent out addressing all questions raised at the meeting.
sef-102-015 (20180104)

## 4. Prosecution and Progress.

Begin work within ten 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, including interim completion dates, is based on an expedited work schedule and may require extraordinary forces and equipment.

Be advised that there may be multiple mobilizations and/or remobilizations to complete construction operations, for example such items as: grading, concrete pavement repair/replacement, 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 construction on Projects 1030-11-72/79/80 and 1030-25-79 until the Section 404 permit has been approved. The department anticipates approval of this permit June 8, 2018.

**Interim and Final Completion of Work**
*Supplement standard spec 108.10 with the following:*

The department will not grant time extensions for the following:

1. Severe weather as specified in standard spec 108.10.2.2.
2. Labor disputes that are not industry wide.
3. Delays in material deliveries.

sef-108-015 (20171004)

Winter weather work, grading, excavation of frozen ground, high ground water, dewatering during winter months, and mitigation efforts for high water table elevations shall not be considered adverse weather delays to construction. Cost for dewatering is considered incidental to construction.

Anticipate cold weather and early spring concrete masonry, concrete paving and ancillary concrete work (curb, median barrier, etc.). Plan to heat aggregates and water for mixes, and that the heating of the aggregate and water is considered incidental to those concrete items. There will be no adverse weather delay for cold weather construction.

**A Schedule of Operations**
The department anticipates that the schedule for each stage shall be as follows below, unless modifications are approved in writing by the engineer.

**All Projects (1030-11-72/79/80, 1030-25-79):**
Keep the STH 20 Interchange ramps and CTH G Interchange ramps open to traffic. Keep the East and West Frontage Road open to traffic.

The weigh station on IH 94 Southbound between CTH K and CTH G will be closed for the duration of the project. Keep the IH 94 Southbound entrance ramp from the weigh station open during Stage 2 and Stage 3 for Wisconsin State Patrol and emergency responders.

Coordinate traffic control and work operations with IH 94 STH 142 to STH 20 contract to south, IH 94 CTH G to College Ave contract to north, as well as other projects listed under the article Other Contracts. Coordinate traffic control change from Stage 2 to Stage 3 to be at same time as traffic control change from Stage 2 to Stage 3 for contract 1030-23-72, IH 94 STH 142 to STH 20. Coordinate traffic control change from Stage 3 to Stage 4 to be at same time as traffic control change from Stage 3 to Stage 4 for contract 1030-23-72, IH 94 STH 142 to STH 20. Coordinate traffic control change from Stage 4 to Stage 5 to be at same time as traffic control change from Stage 4 to Stage 5 for contract 1030-23-72, IH 94 STH 142 to STH 20.

**Stage 1A and 1B** are initial work zone prep stages which are being completed by others prior to construction under project 1035-04-71. Two lanes of IH 94 southbound traffic are placed on the outside shoulder and the outside lane of the IH 94 southbound roadway by the previous contract.

**Stage 2** activities shall include construction of:

- IH 94 northbound three outside lanes and outside shoulder

Shift two lanes of IH 94 northbound traffic onto the inside shoulder and the inside lane of the IH 94 southbound roadway. Keep IH 94 open to two travel lanes in each direction on the southbound lanes.

**Stage 3** activities shall include construction of:

- IH 94 northbound inside lane and inside shoulder, except for northbound median concrete barrier
- IH 94 southbound partial inside shoulder and median barrier

Maintain IH 94 southbound traffic on the outside shoulder and the outside lane and open an additional lane in the middle lane of the IH 94 southbound roadway. Open IH 94 northbound to three lanes and shift IH 94 northbound traffic onto the outside shoulder and the two outside lanes of the new IH 94 northbound roadway. Keep IH 94 open to three southbound travel lanes on the existing southbound lanes and shoulder and three northbound travel lanes on the new northbound lanes and shoulder.

**Stage 4** activities shall include construction of:

- IH 94 Southbound lanes and outside shoulder

Shift three lanes of IH 94 southbound traffic onto the inside shoulder and the two inside lanes of the new IH 94 northbound roadway. Maintain three lanes of IH 94 northbound traffic on the outside shoulder and the two outside lanes of the new IH 94 northbound roadway. Keep IH 94 open to two-way traffic (three travel lanes in each direction) on the newly constructed northbound lanes.

**Stage 5A** activities shall include construction of:

- IH 94 northbound median barrier
- IH 94 southbound partial inside shoulder
- Sign structures with median sign structure footings; associated concrete barrier
- Inside shoulder rumble strips

Shift three lanes of IH 94 southbound traffic onto the outside and two middle lanes of the new IH 94 southbound roadway. Maintain three lanes of IH 94 northbound traffic on the outside shoulder and the two outside lanes of the new IH 94 northbound roadway.

**Stage 5B** activities shall include construction of:

- Outside northbound shoulder rumble strips

Use single lane closures on IH 94 northbound to install rumble strips

Additional project-specific activities are as follows.

**Project 1030-11-80:**
**Stage 2** activities shall include construction of:

- Removal of B-51-26 over Kraut Road
- Bridge B-51-133 over Kraut Road
- Retaining Walls R-51-55 and R-51-56 at Kraut Road

Close Kraut Road to all traffic under IH 94 structures.

**Stage 3** activities shall include construction of:

- No construction on IH 94 over Kraut Road
- No construction on Kraut Road

Reopen Kraut Road to traffic.

Construct storm sewer outfalls under IH 94 Southbound from Sta 951+50 LT to 952+00 LT using Night Time lane closures, keeping a minimum of one southbound lane open to traffic during the Night Time closures.

**Stage 4** activities shall include construction of:

- Removal of B-51-25 over Kraut Road
- Bridge B-51-132 over Kraut Road
- Retaining Walls R-51-53 and R-51-54 at Kraut Road
- Kraut Road under IH 94 Structures

Close Kraut Road to all traffic under IH 94 structures. Reopen Kraut Road once IH 94 bridge work and Kraut Road work is completed.

**Project 1030-11-79:**
**Stage 2** activities shall include construction of:

- Removal of Structure B-51-28 over Golf Road
- Partial Structure B-51-135 over Golf Road, as shown in the plans

Close Golf Road to all traffic under IH 94 structures, except keep Golf Road open to traffic when CTH K is closed.

**Stage 3** activities shall include construction of:

- Partial removal of Structure B-51-27 over Golf Road
- Remaining portion of Structure B-51-135 over Golf Road

Golf Road remains closed to all traffic under IH 94 structures, except keep Golf Road open to traffic when CTH K is closed.

**Stage 4** activities shall include construction of:

- Removal of B-51-27 over Golf Road
- Structure B-51-134 over Golf Road
- Retaining Walls R-51-57 and R-51-58 at Golf Road
- Golf Road under IH 94 Structures

Golf Road remains closed to all traffic under IH 94 structures, except keep Golf Road open to traffic when CTH K is closed.

Reopen Golf Road once IH 94 bridge work and Golf Road work is completed.

**Project 1030-11-72:**
When CTH K is closed to traffic, keep Golf Road open to traffic. Provide one month advance notice to the engineer prior to each closure of CTH K.

**Stage 2** activities shall include construction of:

- Remove Structure B-51-30
- Construct Structure B-51-137
- IH 94 northbound ramps at CTH K

**Stage 2A** activities shall include construction of:

- Construct footings of Structure B-51-137
- Construct CTH K from 44+30 to 47+75
- Construct temporary connection

IH 94 southbound ramps at CTH K are open to traffic. Close the IH 94 northbound ramps at CTH K to traffic. Detour northbound exit ramp traffic to STH 20 and utilize the West Frontage Road for CTH K West and the East Frontage Road for CTH K East. Detour northbound entrance ramp traffic to CTH G utilizing the East and West Frontage Roads. Close CTH K to traffic between the East Frontage Road and IH 94 northbound ramp terminal. Detour CTH K traffic utilizing the East Frontage Road, CTH G, and West Frontage Road. Reopen CTH K to traffic upon completion of the B-51-137 substructure and CTH K roadway restoration.

**Stage 2B** activities shall include construction of:

- No construction on CTH K

Keep IH 94 open to two-way traffic (two travel lanes in each direction) on the southbound lanes at all times. IH 94 southbound ramps at CTH K are open to traffic. Close the IH 94 northbound ramps at CTH K to traffic. Detour northbound exit ramp traffic to STH 20 and utilize the West Frontage Road for CTH K West and the East Frontage Road for CTH K East. Detour northbound entrance ramp traffic to CTH G utilizing the East and West Frontage Roads. CTH K open to traffic.

**Stage 3** activities shall include construction of:

- Remove a portion of Structure B-51-29
- Construct remaining Structure B-51-137

**Stage 3A** activities shall include construction of:

- Construct remaining footings of Structure B-51-137
- Restore CTH K temporary connection

IH 94 northbound and southbound ramps at CTH K are open to traffic. Close CTH K to traffic between the ramp terminals at IH 94. Detour CTH K traffic utilizing the East Frontage Road, CTH G, and West Frontage Road. Reopen CTH K to traffic upon completion of the B-51-137 substructure and CTH K roadway restoration.

Construct storm sewer outfalls under IH 94 Southbound at Sta 1026+00 LT, 1029+00 LT, 1032+00 LT, 1068+00 LT, 1076+25 LT, 1086+00 LT, and 1089+00 LT using Night Time lane closures, keeping a minimum of one southbound lane open to traffic during the Night Time closures.

**Stage 3B** activities shall include construction of:

- No construction on CTH K

IH 94 northbound and southbound ramps at CTH K are open to traffic. CTH K open to traffic.

**Stage 4** activities shall include construction of:

- Remove Structure B-51-29
- Construct Structure B-51-136
- IH 94 southbound ramps at CTH K

**Stage 4A** activities shall include construction of:

- Construct footings of Structure B-51-136
- CTH K from Station 37+00 to Station 44+30

IH 94 southbound ramps at CTH K are closed to traffic. Detour southbound exit ramp traffic to CTH G and utilize the West Frontage Road for CTH K West and the East Frontage Road for CTH K East. Detour southbound entrance ramp traffic to STH 20 utilizing the East and West Frontage Roads. Close CTH K to traffic between the West Frontage Road and IH 94 southbound ramp terminal. Detour CTH K traffic utilizing the East Frontage Road, CTH G, and West Frontage Road. Reopen CTH K to traffic upon completion of the B-51-136 substructure and CTH K construction of the CTH K roadway.

**Stage 4B** activities shall include construction of:

- CTH K median from Station 37+00 to Station 47+75
- Overhead sign support
- Complete permanent pavement marking and signing

IH 94 ramps at CTH K are open to traffic. CTH K is open to traffic.

**Project 1030-25-79:**
**Stage 4** activities shall include construction of:

- Weigh Station Ramps WNW and WSW

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

**Service Ramps** Freeway to/from local road ramps

**Weekday Peak Hours**
- 5:30 AM – 9:00 AM Monday, Tuesday, Wednesday, and Thursday
- 5:30 AM – 12:00 PM Friday
- 2:00 PM – 7:00 PM Monday, Tuesday, Wednesday, and Thursday
- 12:00 PM – 9:30 PM Friday

**Weekday Midday**
- 9:00 AM – 2:00 PM Monday, Tuesday, Wednesday, and Thursday

**Weekend Peak Hours**
- 10:00 AM – 6:00 PM Saturday
- 10:00 AM – 11:00 PM Sunday

**Weekend Off-Peak Hours**

- 8:00 AM – 10:00 AM Saturday, Sunday
- 6:00 PM – 9:30 PM Saturday

**Weekday Off-Peak Hours**

- 7:00 PM – 9:30 PM Monday, Tuesday, Wednesday, Thursday

**Night Time Hours**

- 11:00 PM – 5:30 AM (Sunday PM to Monday AM)
- 9:30 PM – 5:30 AM (Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)
- 9:30 PM – 8:00 AM (Friday PM to Saturday AM, Saturday PM to Sunday AM)

**Full Freeway Closure Hours**

- 11:00 PM – 4:30 AM

sef-108-020 (20150922)

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

**Night Time Hours - CTH K**

- 9:00 PM – 5:30 AM

**C Freeway Work Restrictions**

Follow plan details for closures. If plan details are not provided in the traffic control plan, or for any traffic control change requests, furnish plans for review by the engineer and the WisDOT Traffic Management Center (414) 227-2142 a minimum of one week prior to the implementation so that approval, or disapproval, is obtained at least three days prior to roadway, lane, or ramp closures.

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 permission of the engineer.

Restrict work on open freeway roads and ramps to working in closed shoulders or closed lanes as allowed by the plans or engineer. Provide and utilize temporary access roads and ramps to access work zones. Construct temporary access incidental to other items of work. Access into the work zones from the freeway roads will be allowed during Night Time hours and Off-Peak hours, subject to approval by the engineer, if operations can be safely accomplished and do not result in non-construction traffic entering the work zones. Access from ramps will be allowed as shown in the plans or as modified with written approval from the engineer. Exiting the work zones directly onto freeway roads will be allowed only when operations do not obstruct or slow traffic on the freeway.

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

Park or store equipment and material only at work sites approved by the engineer.

Where lane closure(s) has been permitted by the engineer in conjunction with the contractor's work schedule, make a continuous effort to complete the work with said lane closure(s) in a timely manner.

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

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.

**Work Zone Ingress/Egress.**
Provide engineer approved signage and parallel deceleration and acceleration lanes for freeway access into and out of the work zones at locations approved by the engineer.

At the weekly traffic meetings, provide an Emergency Work Zone Access Plan and required updates, as approved by the engineer, to direct emergency responders accessing a mainline median barrier restricted work zone.

Locations of work zone egress or ingress for construction vehicles, other than as the plans show, is subject to approval from the engineer. Access into the work zones are not allowed directly from the freeway during peak hours. Access into the work zones from the freeway will be allowed during night-time and off-peak hours, 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 where operations do not obstruct or slow traffic on the freeway. All construction vehicles shall yield to all through traffic at all locations.
~~sef-643-050 (20130425)~~

**D Winter Maintenance**
Racine County will perform snow removal operations for freeway and ramp lanes that are open to traffic. The Village of Mount Pleasant, Town of Yorkville, Village of Caledonia, and Town of Raymond 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 as required to eliminate snow melt run-off from crossing active roadways. Provide Racine County Highway Maintenance and Racine County Sheriff's Department with a 24-hour emergency contact number for when maintenance is required.
sef-999-060 (20120330)

**Interim Completion: Completion of Stage 2 - CTH K**
If the contractor fails to complete the work necessary on project 1030-11-72 to reopen CTH K to traffic within 35 calendar days, the department will assess the contractor $2,000 in interim liquidated damages in each direction for each calendar day the contract work remains incomplete beyond 35 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.

If contract time expires prior to completing all work specified in the contract, additional liquidated damages will be assessed as specified in this contract.

**Interim Completion: Completion of Stage 2**
If the contractor fails to complete all work on projects 1030-11-72, 1030-11-79, 1030-11-80, and 1030-25-79 necessary to reopen IH 94 to three lanes of traffic in each direction as shown on the Stage 3 traffic control plans, and reopen freeway ramps as shown on the Stage 3 traffic control plans, prior to 12:01 AM November 18, 2018, the department will assess the contractor $40,000.00 in interim liquidated damages for each calendar day contract work remains incomplete beyond 12:01 AM November 18, 2018. 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 assessed as specified in this contract.

**Interim Completion: Completion of Stage 3 - CTH K**
If the contractor fails to complete the work necessary on project 1030-11-72 to reopen CTH K to traffic within 14 calendar days, the department will assess the contractor $2,000 in interim liquidated damages in each direction for each calendar day the contract work remains incomplete 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.

If contract time expires prior to completing all work specified in the contract, additional liquidated damages will be assessed as specified in this contract.

**Interim Completion: Completion of Stage 3**
Complete Stage 3 prior to beginning Stage 4. Do not begin Stage 4 prior to March 19, 2019 unless approved by the engineer.

If contract time expires prior to completing all work specified in the contract, additional liquidated damages will be assessed as specified in this contract.

**Interim Completion: Completion of Stage 4 - CTH K**
If the contractor fails to complete the work necessary on project 1030-11-72 to reopen CTH K to traffic within 40 calendar days, the department will assess the contractor $2,000 in interim liquidated damages in each direction for each calendar day the contract work remains incomplete beyond 40 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.

If contract time expires prior to completing all work specified in the contract, additional liquidated damages will be assessed as specified in this contract.

**Interim Completion: Completion of Stage 4**
If the contractor fails to complete all work on projects 1030-11-72, 1030-11-79, 1030-11-80, and 1030-25-79 necessary to switch traffic configuration on IH 94 to three lanes of traffic in each direction on respective northbound and southbound sides of IH 94 as shown on the Stage 5A traffic control plans, and to complete work on and reopen Kraut Road, Golf Road, and CTH K to traffic prior to 12:01 AM October 13, 2019, the department will assess the contractor $5,000.00 in interim liquidated damages for each calendar day contract work remains incomplete beyond 12:01 AM October 13, 2019. 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 assessed as specified in this contract.

**Final Completion**
*Replace standard spec 108.11 paragraph (3) as follows:*

The department will assess $20,000 in daily liquidated damages. These liquidated damages reflect the cost of engineering, supervision, and a portion of road user costs.

**Migratory Birds**
Swallow and other migratory birds' nests have been observed on or under the existing bridges. 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 usually between May 1 and August 30. Either prevent active nests from becoming established, or apply for a depredation permit from the US Fish and Wildlife Service for work that may disturb or destroy active nests. The need for a permit may be avoided by removing the existing bridge structure prior to nest occupation by birds, or clearing nests from all structures before the nests become active in early spring. As a last resort, prevent birds from nesting by installing a suitable netting device on the remaining structure prior to nesting activity.

A bird deterrent system has been installed on the IH 94 bridges at Kraut Road, Golf Road, and CTH K under project 1035-04-71. Maintain the bird deterrent system previously installed. For netting, use 100% virgin polyethylene (HDPE) UV stabilized Shade Cloth 30% Black Shade or an approved equivalent. Ensure that no birds are trapped within the structure during maintenance. Pull netting as tight as possible up against the bottom of the beams and attach to the opposite parapet wall with approved methods. Attach netting to the beams or a cable system run under the beams to provide proper support for the netting. Overlap netting by 6 inches and attach the two pieces of netting every 2 feet. Netting is to act as one complete unit without gaps or holes. Netting is to hang 3 feet down the face of

the piers and abutments and be securely attached at the bottom to prevent birds from gaining access behind it.

Include the cost for maintenance of the bird deterrent system in the cost of Removing Old Structure.

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

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

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

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

**Fish Spawning**
There shall be no instream disturbance of the unnamed tributary to East Branch Root River, located at mainline Station 1026+76, as a result of construction activity under or for this contract, from March 1 to June 15, both dates inclusive, in order to avoid adverse impacts upon the spawning of fish.

There shall be no instream disturbance of the unnamed tributary to Root River, located at CTH G to 7 Mile Road West Frontage Road Station 4180+00 to 4188+00 LT, as a result of construction activity under or for this contract, in order to avoid adverse impacts upon the spawning of fish.

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

Culvert pipe checks for culverts at mainline Station 1026+76 on the intermittent stream unnamed tributary to the East Branch Root River shall be removed immediately after completion of the culvert work.

## 5. Incentive/Disincentive for Interim Completion of Work, Item 108.3100.S.

### A General

This item shall consist of either an incentive payment or a disincentive pay reduction as specified below.

The contractor shall complete all work on projects 1030-11-72, 1030-11-79, 1030-11-80, and 1030-25-79 necessary to reopen IH 94 to three lanes of traffic in each direction as shown on the Stage 3 traffic control plans, and reopen freeway ramps as shown on the Stage 3 traffic control plans, on this contract prior to 12:01 AM November 18, 2018.

The completion time allowed for this contract is based on an expedited work schedule.

Under this Incentive/Disincentive plan, 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 maximum incentive payment, as shown on the Schedule of Items, is for department accounting purposes. The actual incentive payment the contractor may receive shall be according to section B of this provision.

Incentive payments will not be considered as part of the money value of the work completed for computing time extensions.

### B Incentive Payment

The contractor shall be entitled to an incentive payment for completion of all work on projects 1030-11-72, 1030-11-79, 1030-11-80, and 1030-25-79 necessary to reopen IH 94 to three lanes of traffic in each direction as shown on the Stage 3 traffic control plans, and reopen freeway ramps as shown on the Stage 3 traffic control plans, on this contract prior to 12:01 AM, November 18, 2018.

The incentive payment will be paid at the rate of $25,000 per calendar day, of completion prior to 12:01 AM November 18, 2018. The maximum amount of incentive payment cannot exceed $500,000.

### C Disincentive Pay Reduction

Should the contractor fail to complete all work on projects 1030-11-72, 1030-11-79, 1030-11-80, and 1030-25-79 necessary to reopen IH 94 to three lanes of traffic in each

direction as shown on the Stage 3 traffic control plans, and reopen freeway ramps as shown on the Stage 3 traffic control plans, under this contract prior to 12:01 AM, November 18, 2018, the contractor shall be liable to the department for a pay reduction in the amount of $25,000 per calendar day for each calendar day after 12:01 AM, November 18, 2018 that work remains incomplete. An entire calendar day will be assessed for any period of time within a calendar day that the work remains incomplete beyond 12:01 AM. The maximum amount of pay reduction cannot exceed $500,000.

If contract time expires prior to completing all work specified in the contract, additional liquidated damages will be assessed according to standard spec 108.11 or as specified within this contract.

**D Measurement and Payment**

Incentive/Disincentive for interim Completion of Work will be measured by the calendar day and will be paid/assessed at the contract unit price per calendar day.

The unit price per day for an incentive pay adjustment will be compensation in full for completing the work as specified in section B of this provision.

The unit price per day for a disincentive pay reduction will be assessed for failing to complete all the work as specified in section C of this provision.

stp-108-056 (20161130)

## 6. Lane Rental Fee Assessment.

**A General**

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

The allowable lane closure times are defined in the Prosecution and Progress and Traffic articles.

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 unless otherwise noted, is as follows:

IH 94 Night Time Lane Closure Extending into Weekday Peak Hours

- 2 lanes to 1 lane: $15,000 per lane per direction, per hour broken into 15 minute increments
- 3 lanes to 2 lanes: $10,000 per lane per direction, per hour broken into 15 minute increments

IH 94 Night Time Lane Closure Extending into Weekend Off-Peak Hours

- $10,000 per lane per direction, per hour broken into 15 minute increments

IH 94 Service Ramp Closure

- $500 per lane, per hour broken into 15 minute increments

IH 94 Full Freeway Closure

- 4:30 AM to 5:30 AM: $2,000 per lane per direction, per hour broken into 15 minute increments
- After 5:30 AM: $15,000 per lane per direction, per hour broken into 15 minute increments

CTH K Night Time Closure

- $500 per lane, per hour broken into 15 minute increments

The Lane Rental Fee Assessment represents a portion of the cost of the interference and inconvenience to the road users for each closure. All lane 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 prior to the completion of specified work in the contract, additional liquidated damages will be assessed according to standard spec 108.11 or as specified within this contract.
stp-108-070 (20161130)

## 7. Traffic.

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

Maintain access at all times to all driveways located along the IH 94 frontage roads, and all the other side roads within the project limits unless otherwise noted in the plans. Notify the property occupant five days in advance of the driveway reconstruction to verify closure or staged driveway construction methods.

Coordinate traffic requirements under this contract with other adjacent and concurrent department or local municipality projects. Implement and coordinate 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.

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.

**Contractor Coordination**
Hold weekly scheduling meetings to discuss the near term schedule activities, address any long-term schedule issues, and discuss any relevant technical issues. Develop a rolling three week schedule identifying the previous week worked and a two week “look ahead”. Provide sufficient detail to include actual and planned activities and all the subcontractors for offsite and construction activities, addressing all activities including ramp and lane closure schedules to be performed and identifying issues requiring engineering action or input. Submit plans for all traffic control for review by the engineer and approval a minimum of one week prior to implementation.

**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’) | 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') | MINIMUM NOTIFICATION |
|---|---|
| Lane and shoulder closures | 3 business days |
| Ramp closures | 3 business days |
| Modifying all closure types | 3 business days |

Discuss LCS completion dates and provide changes in the schedule to the engineer at weekly project meetings in order to manage closures nearing their completion date.
stp-108-057 (20161130)

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

Obtain prior acceptance from the engineer and Stephanie Leranth, (414) 750-1397, for Full Freeway Closures. Notify local emergency and police agencies seven calendar days prior to freeway closure.

**Freeway Lane Closures**
Obtain prior acceptance from the engineer and Stephanie Leranth, (414) 750-1397, Construction Program Work Zone and Traffic Engineer, for Freeway Lane Closures. Freeway lane closures are only allowed during Night Time Hours.

The contractor will incur a Lane Rental Fee Assessment according to the Lane Rental Fee Assessment article for each lane closure outside the allowable lane closure hours noted in the Prosecution and Progress article.

**Full Freeway Closures**
Full Freeway Closures are not anticipated. Obtain prior acceptance from the engineer and Stephanie Leranth, Construction Program Work Zone and Traffic Engineer, for Full Freeway Closures. Notify local emergency and police agencies seven calendar days prior to freeway closure. Full freeway closures are only allowed during Full Freeway Closure Hours.

The contractor will incur a Lane Rental Fee Assessment according to the Lane Rental Fee Assessment article for each lane closure outside the allowable lane closure hours noted in the Prosecution and Progress article.

**Ramp Closures**
Obtain prior acceptance from the engineer and Stephanie Leranth, Construction Program Work Zone and Traffic Engineer, for Ramp Closures. All temporary entrance and exit ramp closures shall be posted three business days in advance of their closure with dates and time of closure. Temporary ramp closures are only allowed during Night Time Hours. Long-term ramp closures shown on the traffic control plans shall be posted ten business days in advance of their closure with dates and time of closure.

Place a portable changeable message sign before the previous open entrance or exit ramp to advise traffic about the closure of the specific entrance or exit ramp.

The contractor will incur a Lane Rental Fee Assessment according to the Lane Rental Fee Assessment article for each lane closure outside the allowable lane closure hours noted in the Prosecution and Progress article.

**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 2:00 AM and 4:00 AM, and they may only be performed by freeway law enforcement.

Obtain approval from the engineer and the Construction Program Work Zone and Traffic 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.
sef-108-031 (20170406)

**Temporary Regulatory Speed Limit Reduction**
During engineer-approved regulatory speed limit reductions, install temporary speed limit signs on the inside and outside shoulders of divided roadways to enhance visibility. When construction activities impede the location of a post-mounted regulatory speed limit sign, relocate the sign for maximum visibility to motorists.

Coordinate with Regional Traffic Section to identify the construction stages that have approved temporary regulatory speed zones documented in a Temporary Speed Zone Declaration. Contact: Stephanie Leranth, Construction Program Work Zone and Traffic Engineer, (414) 750-1397, and Rebecca Klein, WisDOT Traffic, (262) 548-8728.

Contact the Region Traffic Section at least 14-calendar days before installing the temporary speed zone. After installation of the temporary speed zone is complete, notify the Regional Traffic Section with the field location(s) of the temporary speed zone.
~~stp-643-012 (20160607)~~

**Staging**
Perform construction operations on IH 94 in stages as shown in the traffic control/construction staging plan. The construction stages are:

**All Projects (1030-11-72/79/80, 1030-25-79):**
Keep the STH 20 Interchange ramps and CTH G Interchange ramps open to traffic. Keep the East and West Frontage Road open to traffic.

The weigh station on IH 94 Southbound between CTH K and CTH G will be closed for the duration of the project. Keep the IH 94 Southbound entrance ramp from the weigh station open during Stage 2 and Stage 3 for Wisconsin State Patrol and emergency responders.

**Stage 1A and 1B** are initial work zone prep stages which are being completed by others prior to construction under project 1035-04-71. Two lanes of IH 94 southbound traffic are placed on the outside shoulder and the outside lane of the IH 94 southbound roadway by the previous contract.

**Stage 2**
Shift two lanes of IH 94 northbound traffic onto the inside shoulder and the inside lane of the IH 94 southbound roadway. Keep IH 94 open to two travel lanes in each direction on the southbound lanes.

**Stage 3**
Maintain IH 94 southbound traffic on the outside shoulder and the outside lane and open an additional lane in the middle lane of the IH 94 southbound roadway. Open IH 94 northbound to three lanes and shift IH 94 northbound traffic onto the outside shoulder and the two outside lanes of the new IH 94 northbound roadway. Keep IH 94 open to three southbound travel lanes on the existing southbound lanes and shoulder and three northbound travel lanes on the new northbound lanes and shoulder.

**Stage 4**
Shift three lanes of IH 94 southbound traffic onto the inside shoulder and the two inside lanes of the new IH 94 northbound roadway. Maintain three lanes of IH 94 northbound traffic on the outside shoulder and the two outside lanes of the new IH 94 northbound roadway. Keep IH 94 open to two-way traffic (three travel lanes in each direction) on the newly constructed northbound lanes.

**Stage 5A**
Shift three lanes of IH 94 southbound traffic onto the outside and two middle lanes of the new IH 94 southbound roadway. Maintain three lanes of IH 94 northbound traffic on the outside shoulder and the two outside lanes of the new IH 94 northbound roadway.

**Stage 5B**
Use single lane closures on IH 94 northbound to install rumble strips.

Additional project-specific staging and traffic is as follows.

**Project 1030-11-72:**
When CTH K is closed to traffic, keep Golf Road open to traffic.

**Stage 2 and 2A**
IH 94 southbound ramps at CTH K are open to traffic. Close the IH 94 northbound ramps at CTH K to traffic. Detour northbound exit ramp traffic to STH 20 and utilize the West Frontage Road for CTH K West and the East Frontage Road for CTH K East. Detour

northbound entrance ramp traffic to CTH G utilizing the East and West Frontage Roads. Close CTH K to traffic between the East Frontage Road and IH 94 northbound ramp terminal. Detour CTH K traffic utilizing the East Frontage Road, CTH G, and West Frontage Road. Reopen CTH K to traffic upon completion of the B-51-137 substructure and CTH K roadway restoration.

**Stage 2B**
Keep IH 94 open to two-way traffic (two travel lanes in each direction) on the southbound lanes at all times. IH 94 southbound ramps at CTH K are open to traffic. Close the IH 94 northbound ramps at CTH K to traffic. Detour northbound exit ramp traffic to STH 20 and utilize the West Frontage Road for CTH K West and the East Frontage Road for CTH K East. Detour northbound entrance ramp traffic to CTH G utilizing the East and West Frontage Roads. CTH K open to traffic.

**Stage 3 and 3A**
IH 94 northbound and southbound ramps at CTH K are open to traffic. Close CTH K to traffic between the ramp terminals at IH 94. Detour CTH K traffic utilizing the East Frontage Road, CTH G, and West Frontage Road. Reopen CTH K to traffic upon completion of the B-51-137 substructure and CTH K roadway restoration.

**Stage 3B**
IH 94 northbound and southbound ramps at CTH K are open to traffic. CTH K open to traffic.

**Stage 4 and 4A**
IH 94 southbound ramps at CTH K are closed to traffic. Detour southbound exit ramp traffic to CTH G and utilize the West Frontage Road for CTH K West and the East Frontage Road for CTH K East. Detour southbound entrance ramp traffic to STH 20 utilizing the East and West Frontage Roads. Close CTH K to traffic between the West Frontage Road and IH 94 southbound ramp terminal. Detour CTH K traffic utilizing the East Frontage Road, CTH G, and West Frontage Road. Reopen CTH K to traffic upon completion of the B-51-136 substructure and CTH K construction of the CTH K roadway.

**Stage 4B**
IH 94 ramps at CTH K are open to traffic. CTH K is open to traffic.

**Project 1030-11-79:**
**Stage 2**
Close Golf Road to all traffic under IH 94 structures, except keep Golf Road open to traffic when CTH K is closed.

**Stage 3**
Golf Road remains closed to all traffic under IH 94 structures, except keep Golf Road open to traffic when CTH K is closed.

**Stage 4**
Golf Road remains closed to all traffic under IH 94 structures, except keep Golf Road open to traffic when CTH K is closed.

Reopen Golf Road once IH 94 bridge work and Golf Road work is completed.

**Project 1030-11-80:**
**Stage 2**
Close Kraut Road to all traffic under IH 94 structures.

**Stage 3**
Reopen Kraut Road to traffic.

**Stage 4**
Close Kraut Road to all traffic under IH 94 structures. Reopen Kraut Road once IH 94 bridge work and Kraut Road work is completed.

**Project 1030-25-79:**
No project-specific stages

## 8. Holiday Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying IH 94 traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday periods:

- From noon Friday, May 25, 2018 to 6:00 AM Tuesday, May 29, 2018 for Memorial Day;
- From noon Tuesday, July 3, 2018 to 6:00 AM Thursday, July 5, 2018 for Independence Day;
- From noon Thursday, August 30, 2018 to 6:00 AM Tuesday, September 4, 2018 for Labor Day;
- From noon Wednesday, November 21, 2018 to 6:00 AM Monday, November 26, 2018 for Thanksgiving;
- From noon Sunday, December 23, 2018 to 6:00 AM Wednesday, December 26, 2018 for Christmas;
- From noon Monday, December 31, 2018 to 6:00 AM Wednesday, January 2, 2019 for New Year's Day;
- From noon Friday, May 24, 2019 to 6:00 AM Tuesday, May 28, 2019 for Memorial Day;
- From noon Wednesday, July 3, 2019 to 6:00 AM Monday, July 8, 2019 for Independence Day;

- From noon Friday, August 30, 2019 to 6:00 AM Tuesday, September 3, 2019 for Labor Day;
- From noon Wednesday, November 27, 2019 to 6:00 AM Monday, December 2, 2019 for Thanksgiving.

stp-107-005 (20050502)

Holiday 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 holiday work restrictions.

## 9. Utilities.

This contract comes under the provisions of Administrative Rule TRANS 220.

Additional information regarding recently relocated utility facilities may be available on permits issued to the utility companies. These permits can be viewed at the Region Office during normal working hours. Contact WisDOT SE Freeways Utility Coordinator Greg Berry at (414) 750-7824 for further information.

Underground and overhead utility facilities are located within the project limits. Utility adjustments are required for this construction project as noted below. Coordinate construction activities with a call to Diggers Hotline or a direct call to the utilities that have facilities in the area as required per state statute. Use caution to ensure the integrity of underground facilities and maintain code clearances from overhead facilities at all times.

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

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

Utility companies will be performing utility work and adjustments within the limits and during the life of the project. The contractor shall cooperate and coordinate construction activities with these companies.

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

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

Known utilities in the project area are as follows:

**1030-11-72**

**AT&T Legacy (aka. AT&T Corporation)** has a discontinued underground communications duct package within the project limits, consisting of 6 ducts owned by AT&T Corporation bundled with 3 ducts owned by Level 3 Communications, beginning beyond the southerly project limits and running northerly along the westerly fence line of IH 94, crossing the southbound IH 94 on-ramp from CTH K at Station 1044SW+14, and continuing northerly, crossing CTH K at Station 41WB+93, and continuing northerly along the fence line to Station 1067+11, 77'LT. From there it runs northwesterly, crossing the southbound off-ramp to CTH K at Station 1067NW+81, and continuing northerly along the westerly fence line of IH 94 to beyond the project limits.

Contact Ken Nine, (574) 842-8830 office / (574) 904-6336 cell, of JMC Engineers & Associates, Inc. 7 days in advance to coordinate locations and any excavation near their facilities.

**AT&T Wisconsin** has a discontinued underground communications line within the project limits beginning at a manhole at Station 1056NW+97, 23'LT running southwesterly to Station 39WB+75, 13'LT where it turns and runs westerly along the northerly side of CTH K to beyond the project limits.

Contact Mark Eder, (262) 896-7434, of AT&T Wisconsin 7 days in advance to coordinate locations and any excavation near their facilities.

**Caledonia Utility District - Sewer** has an existing sanitary sewer within the project limits beginning at a manhole at Station 45WB+93, 72'RT and running southeasterly along the south side of CTH K to beyond the project limits. This sewer will remain in place without adjustment. Caledonia Utility District will adjust the manhole at Station 45WB+93, 72'RT during construction. Allow Caledonia Utility District 3 working days to adjust the manhole.

Contact Bob Lui, (262) 681-3900, of the Village of Caledonia Utility District 7 days in advance to coordinate locations and any excavation near their facilities.

**Caledonia Utility District - Water** has an existing water main within the project limits beginning at Station 45WB+66, 59'LT and running southeasterly along the north side of CTH K to beyond the project limits. This main will remain in place without adjustment. Caledonia Utility District will adjust a valve at Station 45WB+91, 58'LT during construction. Allow Caledonia Utility District one working day to adjust the valve.

Contact Bob Lui, (262) 681-3900, of the Village of Caledonia Utility District 7 days in advance to coordinate locations and any excavation near their facilities.

**Level 3 Communications** has a discontinued underground communications duct package within the project limits, consisting of 3 ducts owned by Level 3 Communications bundled with 6 ducts owned by AT&T Corporation, beginning beyond the southerly project limits and running northerly along the westerly fence line of IH 94, crossing the southbound IH 94 on-ramp from CTH K at Station 1044SW+14, and continuing northerly, crossing CTH K at Station 41WB+93, and continuing northerly along the fence line to Station 1067+11, 77'LT. From there it runs northwesterly, crossing the southbound off-ramp to CTH K at Station 1067NW+81, and continuing northerly along the westerly fence line of IH 94 to beyond the project limits.

Contact Brahim Gaddour, (414) 908-1027 office / (414) 704-1026 cell, of Level 3 Communications 7 days in advance to coordinate locations and any excavation near their facilities.

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

- An existing overhead electric line beginning at a pole at Station 46WB+45, 93'RT and running southeasterly along the south side of CTH K to beyond the project limits. This line will remain in place without adjustment.
- An existing underground electric line beginning at a pole at Station 46WB+45, 93'RT and running northerly, crossing CTH K at Station 46WB+42, and continuing northerly to Station 46WB+43, 43'LT. From it runs northwesterly along the north side of CTH K to Station 45WB+70, 73'LT, where it turns and runs westerly to a cabinet at Station 1056NE+51, 83'RT. From there the line runs northwesterly, crossing the northbound IH 94 on-ramp from CTH K, and continuing northwesterly to Station 1057NE+97, 23'LT, where it turns and runs westerly and ends at a pedestal at Station 1057+99, 103'LT. We Energies will discontinue these facilities in place and reconstruct new electric services during construction in conjunction with reconstruction of WisDOT traffic management facilities as shown in the plans.

Contact Dan Toomey, (414) 944-5695, of We Energies 7 days in advance to coordinate locations and any excavation near their facilities.

**We Energies – Gas** has existing underground gas facilities within the project limits in the following locations:

- An existing underground gas line beginning beyond the westerly project limits and running easterly along the south side of CTH K and ending at Station 40WB+61, 98'RT. This line will remain in place without adjustment.

We Energies – Gas also has discontinued underground gas facilities within the project limits in the following locations:

- A discontinued underground gas line beginning beyond the southerly project limits and running northerly along the westerly IH 94 right-of-way and ending at the south side of CTH K at Station 40WB+82, 95'RT.
- A discontinued underground gas line beginning beyond the southerly project limits and running northerly along the easterly IH 94 right-of-way to Station 44WB+93, 96'RT where it turns and runs northeasterly and ends at the south side of CTH K at Station 45WB+21, 68'RT.
- A discontinued underground gas line beginning beyond the westerly project limits and running easterly along the south side of CTH K, crossing the southbound IH 94 on-ramp from CTH K at Station 1055SW+23, and continuing easterly to Station 42WB+00, 79'RT. From there the line runs northeasterly to Station 42WB+30, 49'RT and then turns and runs easterly to Station 44WB+07, 39'RT and then runs southeasterly to Station 44WB+22, 75'RT. From there runs easterly and southeasterly to beyond the project limits.
- A discontinued underground gas line beginning at the south side of CTH K at Station 45WB+96, 67'RT and running northerly, crossing CTH K at Station 45WB+82, and continuing northerly to Station 45WB+62, 102'LT. From there the line turns and runs easterly to beyond the project limits.

Contact Dan Toomey, (414) 944-5695, of We Energies 7 days in advance to coordinate locations and any excavation near their facilities.

**WisDOT** has existing overhead electric lines and light poles within the project limits at the intersections of the IH 94 on-ramps and off-ramps with CTH K. Relocate, reconstruct, remove, discontinue and leave in place portions of these facilities as shown in the plans.

Contact Eric Perea, (262) 574-5422 office / (414) 750-0935 cell, of WisDOT 7 days in advance to coordinate construction, locations and any excavation near their facilities.

**WisDOT** has existing overhead electric lines and temporary signals within the project limits at the intersections of the IH 94 on-ramps and off-ramps with CTH K. Relocate, reconstruct, remove, discontinue and leave in place portions of these facilities as shown in the plans.

Contact John Haug, (262) 521-5356, of WisDOT 7 days in advance to coordinate construction, locations and any excavation near their facilities.

**WisDOT** has existing traffic management and underground communication facilities within the project limits in the following locations:

- Existing traffic management and underground communications facilities along the IH 94 mainline pavement, along the IH 94 on-ramps and off-ramps at CTH K, and at the intersections of the IH 94 ramps with CTH K. Relocate, reconstruct, remove, discontinue and leave in place portions of these facilities as shown in the plans.
- Discontinued communications lines in the previously described AT&T Corporation duct package.

Contact Jeff Madson, (414) 225-3723, of WisDOT 7 days in advance to coordinate construction, locations and any excavation near their facilities.

**1030-11-79**

**AT&T Legacy (aka. AT&T Corporation)** has a discontinued underground communications duct package within the project limits, consisting of 6 ducts owned by AT&T Corporation bundled with 3 ducts owned by Level 3 Communications, beginning beyond the southerly project limits and running northerly along the westerly fence line of IH 94 to beyond the northerly project limits.

Contact Ken Nine, (574) 842-8830 office / (574) 904-6336 cell, of JMC Engineers & Associates, Inc. 7 days in advance to coordinate locations and any excavation near their facilities.

**Level 3 Communications** has a discontinued underground communication duct package within the project limits, consisting of 3 ducts owned by Level 3 Communications bundled with 6 ducts owned by AT&T Corporation, beginning beyond the southerly project limits and running northerly along the westerly fence line of IH 94 to beyond the northerly project limits.

Contact Brahim Gaddour, (414) 908-1027 office / (414) 704-1026 cell, of Level 3 Communications 7 days in advance to coordinate locations and any excavation near their facilities.

**Time Warner Cable (aka. Charter Communications)** has existing underground communication facilities within the project limits in the following locations:

- An existing underground communication line beginning at the westerly IH 94 right-of-way beyond the project limits and running easterly along the south side of Golf Road, crossing IH 94 at Station 1002+83, and continuing easterly to beyond the project limits. This line will remain in place without adjustment.
- A discontinued communication line beginning at the westerly IH 94 right-of-way beyond the project limits and running easterly along the north side of Golf Road, crossing IH 94 at Station 1003+30, and continuing easterly to beyond the project limits.

Contact Steve Cramer, (414) 227-4045 office / (414) 688-2385 cell, of Charter Communications 7 days in advance to coordinate locations and any excavation near their facilities.

**We Energies – Gas** has existing underground gas facilities within the project limits in the following locations:

- An existing underground gas line beginning at the westerly IH 94 right-of-way beyond the project limits and running easterly, crossing IH 94 at Station 1001+00, and continuing easterly to the easterly IH 94 right-of-way beyond the project limits. This line will remain in place without adjustment.
- A discontinued gas line beginning at the westerly IH 94 right-of-way beyond the project limits and running easterly along eastbound Golf Road, crossing IH 94 at Station 1002+90, and continuing easterly to beyond the project limits.

Contact Dan Toomey, (414) 944-5695, of We Energies 7 days in advance to coordinate locations and any excavation near their facilities.

**WisDOT** has existing traffic management and underground communication facilities within the project limits in the following locations:

- Existing traffic management and underground communications facilities along the IH 94 mainline pavement. Relocate, reconstruct, remove, discontinue and leave in place portions of these facilities as shown in the plans.
- Discontinued communications lines in the previously described AT&T Corporation duct package.

Contact Jeff Madson, (414) 225-3723, of WisDOT 7 days in advance to coordinate construction, locations and any excavation near their facilities.

**1030-11-80**

**AT&T Legacy (aka. AT&T Corporation)** has a discontinued underground communications duct package within the project limits, consisting of 6 ducts owned by AT&T Corporation bundled with 3 ducts owned by Level 3 Communications, beginning beyond the southerly project limits and running northerly along the westerly fence line of IH 94 to beyond the northerly project limits.

Contact Ken Nine, (574) 842-8830 office / (574) 904-6336 cell, of JMC Engineers & Associates, Inc. 7 days in advance to coordinate locations and any excavation near their facilities.

**Level 3 Communications** has a discontinued underground communication duct package within the project limits, consisting of 3 ducts owned by Level 3 Communications bundled with 6 ducts owned by AT&T Corporation, beginning beyond the southerly project limits and running northerly along the westerly fence line of IH 94 to beyond the northerly project limits.

Contact Brahim Gaddour, (414) 908-1027 office / (414) 704-1026 cell, of Level 3 Communications 7 days in advance to coordinate locations and any excavation near their facilities.

**WisDOT** has existing traffic management and underground communication facilities within the project limits in the following locations:

- Existing traffic management and underground communications facilities along the IH 94 mainline pavement. Relocate, reconstruct, remove, discontinue and leave in place portions of these facilities as shown in the plans.
- Discontinued communications lines in the previously described AT&T Corporation duct package.

Contact Jeff Madson, (414) 225-3723, of WisDOT 7 days in advance to coordinate construction, locations and any excavation near their facilities.

**1030-25-79**

**AT&T Legacy (aka. AT&T Corporation)** has a discontinued underground communications duct package within the project limits, consisting of 6 ducts owned by AT&T Corporation bundled with 3 ducts owned by Level 3 Communications, beginning beyond the southerly project limits and running northerly along the westerly fence line of IH 94 to beyond the northerly project limits.

Contact Ken Nine, (574) 842-8830 office / (574) 904-6336 cell, of JMC Engineers & Associates, Inc. 7 days in advance to coordinate locations and any excavation near their facilities.

**Level 3 Communications** has a discontinued underground communication duct package within the project limits, consisting of 3 ducts owned by Level 3 Communications bundled with 6 ducts owned by AT&T Corporation, beginning beyond the southerly project limits and running northerly along the westerly fence line of IH 94 to beyond the northerly project limits.

Contact Brahim Gaddour, (414) 908-1027 office / (414) 704-1026 cell, of Level 3 Communications 7 days in advance to coordinate locations and any excavation near their facilities.

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

- An existing underground electric beginning at a meter at the easterly side of a Weigh Station building along southbound IH 94 at Station 1114+89, 91’LT and running southerly to Station 1114+63, 87’LT where it turns and runs southwesterly to beyond the project limits. This line will remain in place without adjustment.
- An existing underground electric line beginning beyond the project limits at a pole at the easterly IH 94 right-of-way at Station 1107+63, 189’ RT and running westerly and ending at Station 1107+57, 66 RT. This line will remain in place without adjustment.

- An existing underground electric line beginning beyond the project limits at a pole at the westerly IH 94 right-of-way at Station 1134+65, 215'LT and running southeasterly, crossing IH 94 at Station 1134+08, and continuing southeasterly to a pole beyond the project limits at the easterly IH 94 right-of-way at Station 1133+82, 102'RT. This line will remain in place without adjustment.

Contact Dan Toomey, (414) 944-5695, of We Energies 7 days in advance to coordinate locations and any excavation near their facilities.

**WisDOT** has existing underground electric lines and light poles within the project limits in the following locations:

- Existing underground electric lines and light poles along the entrance and exit ramps to a Weigh Station along southbound IH 94 near Station 1114+90. Relocate, reconstruct, remove, discontinue and leave in place these facilities as shown in the plans.
- An existing underground electric line beginning at a meter at the easterly side of a Weigh Station building along southbound IH 94 at Station 1114+89, 91'LT and running northwesterly to a pull box at Station 1116+06, 113'LT where it turns and runs northerly to a pull box at Station 1117+78, 110'LT. From there it runs westerly to a pull box at Station 1117+69, 170'LT and then turns and runs northerly and ends at a pull box at Station 1118+11, 146'LT. Relocate, reconstruct, remove, discontinue and leave in place these facilities as shown in the plans.
- An existing underground electric line beginning at a pull box at Station 1116+06, 113'LT and running easterly to Station 1116+06, 79'LT where it turns and runs northerly and ends at Station 1116+31, 80'LT. Relocate, reconstruct, remove, discontinue and leave in place these facilities as shown in the plans.

Contact Eric Perea, (262) 574-5422 office / (414) 750-0935 cell, of WisDOT 7 days in advance to coordinate construction, locations and any excavation near their facilities.

**WisDOT** has existing traffic management and underground communication facilities within the project limits in the following locations:

- Existing traffic management and underground communications facilities along the IH 94 mainline pavement. Relocate, reconstruct, remove, discontinue and leave in place portions of these facilities as shown in the plans.
- Discontinued communications lines in the previously described AT&T Corporation duct package.

Contact Jeff Madson, (414) 225-3723, of WisDOT 7 days in advance to coordinate construction, locations and any excavation near their facilities.

## 10. Other Contracts.

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

It is expected that routine maintenance by the city and county personnel may be required at certain times concurrently with the work being done under this contract.

The following contracts are anticipated to be under construction within the time period of this contract, unless otherwise indicated:

**2018**

**IH 94 N-S CTH K Cross Road Reconstruction**

- ID 1030-11-71, CTH K Interchange Cross Road

**IH 94 N-S Frontage Road Construction Contract**

- ID 1030-24-77 and 1030-24-78, CTH KR to STH 11 East and West Frontage Road
- ID 1030-24-70 and 1030-24-74, STH 11 Interchange East and West Frontage Road
- ID 1033-02-77 and 1033-02-78, STH 11 to STH 20 East and West Frontage Road

**IH 94 N-S Freeway Mainline Work Zone Prep**

- ID 1035-04-71, STH 142 to CTH G, Kenosha and Racine County

**Reconstruction**

- ID 2340-00-76, STH 20 Intersection with CTH C

**Roadway Rehabilitations**

- ID 2250-16-70, STH 20, IH 94 to CTH H
- ID 3765-04-70, CTH A, East Frontage Road to CTH H
- ID 3723-01-70, CTH H, CTH A to CTH KR
- ID 2818-00-73, CTH H, CTH KR to STH 20

**2018 - 2019**

**IH 94 N-S Freeway Mainline Construction STH 142 to STH 20 Contract:**

- ID 1030-23-72, IH 94 N-S Freeway, CTH E Interchange Mainline/Ramps
- ID 1030-23-79, IH 94 N-S Freeway, STH 142 to CTH E Mainline
- ID 1030-24-71, IH 94 N-S Freeway, STH 11 Interchange, STH 11 Eastbound and Westbound
- ID 1030-24-72, IH 94 N-S Freeway, STH 11 Interchange, Mainline and Ramps
- ID 1030-24-79, IH 94 N-S Freeway, CTH KR to STH 11, Mainline
- ID 1033-02-79, IH 94 N-S Freeway, STH 11 to STH 20, Mainline
- ID 1035-03-71, IH 94 N-S Freeway, CTH KR Interchange Crossroad
- ID 1035-03-72, IH 94 N-S Freeway, CTH KR Interchange Mainline and Ramps
- ID 1035-03-79, IH 94 N-S Freeway, CTH E to CTH KR Mainline

**2018 - 2020**

**IH 94 N-S Freeway Mainline Construction CTH G to College Ave Contract:**

- ID 1035-01-79, IH 94 N-S Freeway, CTH G to 7 Mile Road
- ID 1035-01-72, IH 94 N-S Freeway, 7 Mile Road Interchange, 7 Mile Road
- ID 1035-01-74, IH 94 N-S Freeway, 7 Mile Road Interchange, Mainline and Ramps

- ID 1035-01-82, IH 94 N-S Freeway, 7 Mile Road to Milwaukee County Line
- ID 1030-20-87, IH 94 N-S Freeway, County Line to Oakwood Rd, Elm Rd Interchange
- ID 1030-20-84, IH 94 N-S Freeway, Oakwood Rd to College Ave

**ID 1030-26-74, IH 94 N-S Freeway, STH 142 to Rawson Avenue, Advanced/Alternate Route Signing**

**2018-2021**
**Development Roads**

- ID 1320-23-70, STH 11, East Frontage Road to CTH H (2019)
- ID 1320-23-71, STH 11, CTH H Intersection (2019 - 2020)
- ID 1320-23-72, STH 11, 56th Road to West Frontage Road (2021)
- ID 2704-09-70, Braun Road, IH 94 to CTH H (2018 - 2019)
- ID 2704-09-71, Braun Road, CTH H to 90th Street (2021)
- ID 2704-00-75, International Drive, STH 11 to STH 20 (2018 - 2019)
- ID 2704-00-76, Wisconn Valley Way, CTH KR to STH 11 (2019)
- ID 2704-00-77, Wisconn Valley Way/CTH KR Intersection (2018-2019)
- ID 3760-00-70, CTH H, CTH KR to STH 11 (2019 - 2020)
- ID 3763-00-73, CTH KR, East Frontage Road to CTH H (2019)
- ID 3763-00-74, CTH KR, CTH H to 90th Street (2021)
- Kilbourn Ditch Box Culvert, CTH KR east of IH 94 (2018)

## 11. Hauling Restrictions.

*Replace standard spec 107.2 with the following:*

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

The department will review the submittal and provide a letter with comments and proposed revisions to the contractor within five business days of its receipt. The local municipality is responsible for issuing approval of haul routes. 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.

At all times, conduct operations in a manner that will cause a minimum of disruption to traffic on existing roadways.
~~sef-107-015 (20170310)~~

## 12. Environmental Protection, Aquatic Exotic Species Control.

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

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

Ensure that all equipment that has been in contact with waters of the state, or with infested or potentially infested waters, has been decontaminated for aquatic plant materials and zebra mussels prior to being used in other waters of the state. Before using equipment on this project, thoroughly disinfect all equipment that has come into contact with potentially infested waters. Use the following inspection and removal procedures (guidelines from the Wisconsin Department of Natural Resources http://dnr.wi.gov/topic/fishing/documents/vhs/disinfection_protocols.pdf for disinfection:

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

Complete the inspection and removal procedure before equipment is brought to the project site and before the equipment leaves the project site.
stp-107-055 (20130615)

## 13. 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 top soil to minimize the exposure to possible erosion.

(10) Provide the ECIP 14 days before the pre-construction conference. Provide 1 copy of the ECIP to the department and 1 copy of the ECIP to the WDNR Liaison Craig Webster, (414) 303-3011, Craig.Webster@wi.gov. Do not implement the ECIP until department approval, and perform all work conforming to the approved ECIP.

(11) Maintain Erosion Control BMP's 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. 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)

Erosion control devices are specified on the construction plans, but the contractor's ECIP should detail how these devices will be implemented for the worksite. Additional devices may be needed based on field conditions. A 'staged' ECIP may be required for this project, as new areas are disturbed. Each new 'stage' of the ECIP needs to be submitted to DNR for review as an amendment to the ECIP and a 14-day review period for each amendment should be allowed. Work should not commence in new areas until DNR has reviewed and concurred with the corresponding ECIP amendment.

All disturbed areas should be adequately protected and restored as soon as feasible. Any disturbed area that will not be 're-worked' for 14 days or more should be temporary seeded or matted to prevent erosion into adjacent waterways or wetlands. DNR may identify 'sensitive' areas in the field that require additional temporary stabilization to protect resources from being contaminated by sediment-laden water discharging from the work site. Any 'release' of sediment-laden water from the work site that enters a wetland or waterway should be reported to the DNR liaison within 24 hours.

Dust generated by project activities needs to be controlled to the maximum extent practicable through water or chemical application. The contractor needs to provide a plan for controlling dust, which should include a plan for cleaning sediment tracked from the project site from active roadway surfaces, which commonly generates dust.

If dewatering is required for any reason, 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. Do not house any dewatering technique in a wetland or floodplain.

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 DNR for review in an amendment to the ECIP.

All temporary stock piles must be in an upland location and protected with erosion control measures (e.g. silt fence, rock filter-bag berm, etc.). Proposed stockpile locations should be included in the ECIP. Do not stockpile fill or other construction materials in or adjacent to wetlands, waterways or floodplain.

The DOT Select Site process must be adhered to for clean fill or any other material that leaves the work site. The DNR 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 attains required 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.

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

## 14. Notice to Contractor – Personnel Identification Program.

All contractor personnel will be required to register in the program prior to performing work. Valid photo identification which includes unexpired driver's license, government issued identification cards, military identification, passport, or other identification approved by the department will be required to register. All personnel registered will be issued a hard 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 spec 108.6, applicable under the contract.

## 15. Notice to Contractor – Media Relations.

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

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

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

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

i. The department's project manager

ii. Becky Kikkert
4802 Sheboygan Avenue
Madison, WI 53705
Phone: (608) 266-3581
Email: rebecca.kikkert@dot.wi.gov

iii. Michael Pyritz
141 NW Barstow Street
P.O. Box 798
Waukesha, WI 53188
Phone: (262) 521-5373
Email: michael.pyritz@dot.wi.gov

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

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

## 16. Notice to Contractor – Safety.

All workers shall wear OSHA and ANSI compliant safety head protection, safety glasses, safety-toe protective footwear, and safety vest at all times while within 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.

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.

## 17. Notice to Contractor – Airport Operating Restrictions.

The Federal Aviation Administration (FAA) has height restrictions surrounding select airports. The department is obtaining Temporary Determination of No Hazard to Air Navigation for all temporary structure (i.e. crane) erections associated with bridge and

retaining wall construction for the project. These Determinations are anticipated to be received by May 1, 2018. Once received, copies of the Determinations can be obtained through the engineer.

The Determinations are anticipated to include conditions such as red obstruction lights and orange/white checkered flags on cranes, as well as lowering the cranes to the ground when not in use and during the hours between sunset and sunrise.

Notify the manager of the applicable airport at least 3 business days prior to the temporary structure being erected and again when the structure is removed from the site. Contact the airport owner to disseminate a Notice to Airmen (NOTAM) when cranes are in use and construction is occurring.

Include dust control provisions near airports in the Dust Control Implementation Plan.

Any failure or malfunction that lasts more than 30 minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

Any height exceeding the above ground level (AGL) or above mean sea level (AMSL) in the Determinations will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

The Determinations will expire unless extended, revised or terminated by the issuing office. Contractor must request an extension of the effective period of the determination to be postmarked or delivered by the contractor at least 30 days prior to the expiration date to:

Federal Aviation Administration
Air Traffic Airspace Branch, ASW-520
2601 Meacham Blvd.
Fort Worth, TX 76137-0520

Once the Determinations are received, for questions on extensions to the effective period of the determinations, contact the FAA office at (847) 294-7575 and reference the Aeronautical Study Number.

Any changes in coordinates and/or heights will void the Determinations. Any future construction or alteration, including increase to heights, requires separate notice to the FAA.

Determinations include temporary construction equipment such as cranes, derricks, and other equipment, which may be used during actual construction of a structure. Equipment shall not exceed the overall heights as indicated above. Contractor must request separate notice to the FAA if equipment has a height greater than the studied structure.

Contractor must copy the engineer on any correspondence with the FAA as it relates to time extensions and new/revised Determinations.

A Determination concerns the effect of temporary structures on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If drainage or pond designs need to be modified in the field, contact WisDOT Bureau of Aeronautics, Levi Eastlick, Levi.Eastlick@dot.wi.gov, (608) 267-5018 or Matt Malicki, Matthew.Malicki@dot.wi.gov, (608) 267-5273, to obtain input on minimizing wildlife attractants for the modified designs.

## 18. Notice to Contractor – Tunnel and Shaft Construction.

### A General

This article focuses on aspects of the project related to the single-pass trenchless installation of culverts and storm sewers as shown on the contract drawings. The work covered under this section includes: control of water, shaft excavation and support, ground improvement, microtunneling, contact grouting, protection of property, and geotechnical instrumentation. Topics related to open-cut storm sewer construction are not covered in this special provision.

### B Definitions

#### B.1 General

Definitions covered here apply to all subsections in this article.

#### B.1.1 Ground Improvement

Grouting, jet grouting, ground freezing, dewatering or other methods of increasing ground strength and/or reducing permeability to facilitate groundwater control and ground stability for excavations.

#### B.1.2 Soil Mix

The mixture created by mixing in-situ soils with a stabilizing cement grout mix

#### B.1.3 Dewatering

Dewatering is defined as the lowering of ground water levels affecting an excavation to provide suitable standup time for shaft and tunnel construction, to prevent lost ground by erosion or piping of fines with seepage, and to provide dry working conditions and stable bottom conditions that do not degrade subgrade strength and compressibility. Suitable dewatering may require lowering of phreatic surfaces to a suitable distance below excavation bottoms or pressure relief to provide adequate factors of safety for ground stability or ground support system integrity.

#### B.1.4 Preconstruction Survey

A preconstruction survey is a survey of adjacent structures within 200 feet of the proposed trenchless crossing that is used to document the condition of a structure prior to tunneling.

**B1.5 Shaft**
The term "shaft" shall mean the manholes or other permanent vertical structures with a final shaft lining placed next to the initial ground support within a workshaft excavation. In conventional usage a “shaft” is a structure that is deeper than it is wide, but in the context of these specifications the term “shaft” includes miscellaneous concrete structures that may be wider than they are deep that are constructed within workshaft excavations as defined below.

**B.1.6 Workshaft**
The term "workshaft" shall mean the temporary excavation requiring a ground support system until the trenchless installation is complete and /or the shaft structure to be constructed within the excavation is complete and backfilled.

**B.1.7 Portal**
Portal is defined as the eye or break-in or break-out opening from a workshaft to a tunnel. Portals in soil often include a seal around the opening to prevent intrusion of water, slurry and soil into the workshaft, and may include ground improvement such as permeation or jet grouting to form a more stable soil mass that provides stability and control of water when launching a tunnel boring machine or shield.

**B.1.8 Soil Excavation**
Soil excavation is defined as the removal of natural soil or soil-like fill materials at the tunnel heading that does not requiring special excavation methods such as drilling and splitting, blasting or cutting with torches. Excavated material is commonly referred to as muck. In-place fill material may contain debris or abandoned foundations or structures as described in the Geotechnical Baseline Report. Cobbles and boulders may be encountered within this definition in either natural or man-made fill material. Boulder obstructions are covered separately.

**B.1.9 Cobbles and Boulders**
A boulder is a rock fragment that has a size (largest dimension or chord length) of 12 inches or more. Rock fragments that have a size ranging from 3 to 12 inches are cobbles.

**B.1.10 Boulder Obstruction**
Defined in the article Boulder Obstructions.

**B.1.11 Tunnel**
A tunnel is a horizontal or nearly horizontal opening that is excavated within soil or rock. Short, small diameter tunnels are called adits. Short, large diameter tunnels are called chambers.

**B.1.12 Jacked Pipe Tunneling**
Jacked pipe tunneling is a one-pass lining method in which both the initial support and final lining are created using a shield or tunnel boring machine for excavating and controlling ground and groundwater at the heading, followed by contiguous pipes jacked in a series from a workshaft. Requirements for jacked pipe tunneling using precast reinforced concrete

pipe are specified in this article, article Microtunneling Storm Sewer Reinforced Concrete Pipe Class V.

**B.1.13 Controls**
The system which synchronizes excavation, removal of the excavated material, and jacking of pipe to maintain overall balance to provide complete and adequate ground support at all times.

**B.1.14 Microtunneling**
A trenchless construction method for installing pipe meeting the following criteria; the machine is remotely operated from the surface, utilizes a guidance system, installs the pipe using a jacking system for thrust, and provides continuous pressure to the face of the excavation to balance groundwater and earth pressures.

**B.1.15 Microtunnel Boring Machine (MTBM)**
A remote controlled, steerable, closed face tunneling machine capable of balancing groundwater and earth pressures that performs microtunneling.

**B.1.16 Slurry Machine**
An MTBM with a bulkhead behind the face of the machine to form a plenum chamber. Slurry or other medium is introduced into the plenum chamber under appropriate pressure to stabilize the face and to be mixed with material excavated by the rotary cutter wheel. The resultant slurry is removed by a slurry pumping system. The MTBM incorporates a crushing mechanism (a crusher cone) in the plenum chamber that reduces granular materials encountered in the excavation to sizes that can be removed through the slurry system.

**B.1.17 Slurry System**
The transportation of excavated material in a slurry flow matched to excavation rate. The system balances groundwater pressures and separates soil from slurry at the end of the process.

**B.1.18 Lubrication Port**
A port located in a jacking pipe segment, fitted with a one-way valve, for injection of lubrication material or grout into the annular space between the jacking pipe and the ground.

**B.1.19 Laser**
An optical system projecting a beam onto a target in the head of the MTBM to provide guidance for steering the MTBM.

**B.1.20 Jacking Record**
A computer-generated or hand-recorded report that contains information on pertinent microtunneling operations including rate of advance, slurry flow rates and pressures, jacking forces, face pressure, cutter-head speed and torque, steering corrections, machine inclination, roll, and position, installed tunnel length, date, time, name of operator, problems with the tunneling machine and reasons for delays.

**B.1.21 Excavation Support System**
System provided to maintain stability of an excavation made for any purpose and to be occupied by workmen, and construction activity, until the final support system structure is complete in place, and the excavation is closed, and the structure is backfilled. A single system may be used to fulfill the requirements of both excavation support system and final support system.

**B.1.22 Contact Grouting**
An injection of neat cement grout into voids outside of initial support systems and final linings of workshaft and tunnel excavations to achieve continuous and permanent contact between support systems or lining and the ground. This definition includes grouting the annular space outside the casing pipe string after pipe jacking installations are complete.

**B.1.23 Grout Refusal**
Refusal is defined as the point at which grouting is stopped on a grout hole. It is defined as a grout injection rate of less than one-half cubic foot of grout over a 10-minute interval, at 100 percent of the required pressure.

**B.1.24 Voids**
Spaces within soil that filled with air, water, slurry or disturbed ground resulting in void ratios (volume of voids divided by volume of solids) greater than 2.0.

**C. Submittals**
**C.1 Control of Water Submittals**
**C.1.1 Informational Submittals**
The following submittals shall be made at least 30 days prior to start of excavation, unless otherwise noted:

1. Discharge permits.
2. Water control plan.
3. Quality control.

**C.1.2 Discharge Permits**
Submit discharge and well permit applications to Wisconsin Department of Natural Resources (WDNR) if dewatering wells are to be used. Also submit design and calculations for the sedimentation tank or clarifier system to be utilized to reduce sediment levels to minimum levels required by WDNR prior to discharging.

**C.1.3 Water Control Plan**
Water control plan shall be coordinated with requirements of:

1. Subsection E of this article, Shaft Excavation and Support.
2. Subsection F of this article, Ground Improvement.
3. Subsection G of this article, Microtunneling.
4. The article Geotechnical Instrumentation.

As a minimum, include:

1. Descriptions of proposed groundwater and surface water control facilities including, but not limited to, equipment; methods; installation; standby equipment and power supply, pollution control facilities including silt removal facilities, discharge locations to be utilized; removal of water control systems; provisions for immediate temporary water supply as required by this section.
2. The contractor shall submit shop drawings showing locations, dimensions, and relationships of elements of each water control system. The submittal shall include design calculations demonstrating adequacy of proposed water control or isolation systems and their components. The contractor shall provide manufacturer's literature describing installation, operation, and maintenance procedures for all components of the water control system.
3. Design calculations demonstrating adequacy of proposed water control systems and components. The contractor may be required to demonstrate the systems proposed in the water control plan and to verify that adequate equipment, personnel, and materials are provided to dewater the excavations at all locations and times required.

If system is modified during installation or operation, revise or amend and resubmit Water Control Plan.

**C.1.4 Quality Control Submittals**

During construction, submit pumping rate measurements, water level readings taken at construction phase piezometers and groundwater quality data. Contractor readings shall be performed in addition to any readings taken by the engineer. Submit the data within 24 hours of readings.

**C.2 Shaft Excavation and Support Submittals**

**C.2.1 Ground Support System Engineer Qualifications**

Submit written documentation (in addition to a certificate of design) as supporting evidence of the qualifications of the initial ground support design engineer. Drawings and calculations shall be prepared and sealed by a professional civil engineer registered in the State of Wisconsin with at least five years' experience in design and construction of ground support systems similar to those planned.

**C.2.2 Certificate of Design**

Prior to beginning any tunnel or workshaft excavation, submit a Certificate of Design confirming responsibility for design and professional registration for design of tunnel and workshaft ground support systems in accordance to the provisions of subsection E of this article, Shaft Excavation and Support and subsection G, Microtunneling.

**C.2.3 Contractor's Engineer Certification**

Obtain from your engineer and submit to the department's engineer, no later than the 5$^{th}$ day of each month, a signed and sealed certification (letter memorandum or report) that, based on his observations, the work completed during the previous month pertaining to his (contractor's engineer) design was installed and is performing substantially in accordance to the design concepts prepared by him. The contractor's engineer shall also report any

significant deviations from the submitted design concepts, any performance concerns observed and actions recommended to remediate these items. The contractor's engineer certifications shall be made monthly during a period commencing with the start of excavation and ground support system installation, continuing during portal excavation and pipe jacking operations and ending when the ground support system has been abandoned and backfilled or removed and backfilled.

**C.2.4 Workshaft Plans and Shop Drawings**

Submit plans and shop drawings for shaft excavations, excavation support systems, and other related information. As a minimum, the submittal shall contain the following information:

1. Name and qualifications (including evidence of professional registration in the State of Wisconsin) of person responsible for ground support system design.
2. Construction method to be used for the installation of each system, including sequence of installation and equipment description.
3. Shop drawings and design calculations showing assumed loading conditions, estimated ground movements, system component design, arrangement of supports and construction sequence for proposed support system(s). See subsection E of this article, Shaft Excavation and Support for a minimum submittal list for a particular shaft initial ground support system chosen. Show the elevation of struts, braces, or other supports as related to the depth of excavation at intermediate stages of construction. Provide details of bottom slab, drains, and sump construction. Indicate sizes, shapes, and material specifications for all support elements including lagging, if used. Calculations shall include estimates of likely deflections or deformations of the support system and maximum tolerable values. Calculations shall also show the thrust block design and an adequate structural factor of safety for the thrust block-wall system when subjected to the anticipated maximum jacking forces during pipe jacking.
4. Plans and procedures for protecting adjacent structures, utilities and facilities including: excavation, control of water, ground improvement, underpinning, monitoring and restoration of any damage.
5. A site plan for each portal site indicating utilities, use of access roads, site grading and site development details for the excavation and all work areas, and the proposed limits of disturbance surrounding each excavation.
6. Portal plans indicating support installed to maintain ground support system integrity and stability of the excavation when commencing tunneling and when holing through. Provide details of the portal bracing, seal and ground improvement needed for face stability and tunnel launching.
7. Quality Control Procedures: address materials testing requirements and excavation monitoring provisions.

**C.2.5 Ground Support System Data and Records**

Submit the following data and reports during the work:

1. Any excavation monitoring analysis, including: horizontal and vertical deflections of supports, horizontal and vertical movements of adjacent ground and facilities, and measurements of strut loads being collected by the contractor as specified by the ground support design engineer, and as required by subsection I of this article,

Protection of Property and Ground Movement Limits and the article Geotechnical Instrumentation.

2. Monthly reports from contractor's ground support design engineer on performance of ground support system elements and associated adjacent ground movements and protection of adjacent property, as required by subsection E of this article, Shaft Excavation and Support, subsection I of this article, Protection of Property and Ground Movement Limits, and the article Geotechnical Instrumentation.

**C.3 Ground Improvement Submittals**

**C.3.1 Shop Drawings, Statements, and Calculations**

The contractor shall submit the following shop drawings, methods statements, calculations and information:

1. List and description of locations, including a test location, where grouting is to be performed, with description of the size of the grouted zone.
2. Design calculations with clearly identified design parameters and assumptions for the grouted zones based on anticipated subsurface conditions.
3. Equipment, methods, and details of grouting operation, including arrangement of grout mixing and injection equipment, sequence and details of grout placement, and minimum set time and strength before grouting additional zones.
4. Details for identifying, protecting, and maintaining utilities in working service.
5. Means and methods for handling, containing, treating, and disposing of excess or spilled materials generated during the grouting operation.
6. Extent of, and means and methods for effecting repairs to streets, sidewalks, and other facilities damaged or disturbed during grouting operations.
7. Plans for probing entry/exit zones from shafts before cutting eyes, if required.

**C.3.2 Materials**

The contractor shall submit the source of all materials to be used in the grout mix.

**C.3.3 Mix Design**

The contractor shall submit the proposed proportions for soil-cement mixture along with results of laboratory testing of trial mixtures using the proposed material components.

**C.3.4 Quality Control**

1. Qualifications: The contractor shall submit evidence for approval that the contractor or subcontractor is experienced in grouting in a variety of subsurface conditions and in conditions similar to those specific to this project. Qualifications shall be submitted for:
   a. Grouting subcontractor.
   b. Grouting superintendent.
2. Certifications and Permits:
   a. Certificates of compliance for materials specified herein.
   b. Required permits for disposing of waste materials.

3. Quality Control Plans:
    a. Sampling and testing methods, where not otherwise specified, for determining compliance with design criteria.
    b. Methods for controlling and verifying the limits of the grouting operation.
4. Daily Records: Shall be submitted by noon of the day following the shift to which the daily records pertain, and shall include:
    a. Quantity and location of grout injections.
    b. Quality control sampling, measurements, and results.
    c. Nature, causes, duration, and impacts of interruptions and delays to the grouting operation.
5. Notifications:
    a. Notify the engineer at least three days in advance of performing grouting at all work areas.
6. As-built drawings indicating the locations of grouted zones.

**C.4 Microtunneling Submittals**

**C.4.1 General**

The contractor shall submit to the engineer for review, plans, details and data including compliance with the requirements of the contract drawings. Such review shall not be construed to relieve the contractor in any way of responsibilities under the contract. Contractor shall not commence work on any items requiring a tunneling work plan or other submittals until the submittals have been reviewed and accepted by the engineer.

Submittals shall be made in accordance to Contract requirements. Submittals shall be made within 30 days of the date of Notice to Proceed.

**C.4.2 Contractor's Qualifications**

Submit contractor's qualifications in accordance to subsections Qualifications and Quality Assurance in subsection G of this article, Microtunneling.

**C.4.3 Personnel Experience**

Submit resumes for the superintendent(s) and MTBM operator(s) that will be on-site for the duration of the microtunneling. Personnel experience records shall include project names, locations, type and diameter of pipe installed, total length, number of drives, maximum drive length, depth, ground and groundwater conditions. Owner and owner's representative shall be listed with current address and telephone number. The superintendent and MTBM operator shall be on-site at all times during microtunneling operations.

**C.4.4 Shop Drawings**

Prepare and submit detailed shop drawings and pertinent descriptions, data and calculations for all items to be incorporated into the finished work, including, but not necessarily limited to, jacked reinforced concrete casing pipe and carrier pipe. The drawings and calculations shall show compliance to specified requirements and applicable codes and shall bear the seal, signature and date of a professional engineer registered in the State of Wisconsin. As a minimum, include the following:

1. The drawings and pipe drawings shall include reinforcement details, joint details, joint cushion materials, and fabrication tolerances.
2. Design calculations demonstrating that the pipe is capable of sustaining the maximum stresses to be imposed during jacking in accordance to ASCE 27, Standard Practice for Direct Design of Precast Concrete Pipe for Jacking in Trenchless Construction. The calculations shall take into account maximum anticipated ground loads (earth, groundwater and surcharge pressure), live loads, jacking forces, eccentric forces due to steering, external loads such as traffic, and any other loads that may be reasonably anticipated. All loads shall be shown and described. Use the maximum allowable bearing stress criteria specified in this section.
3. Calculations showing pipe resistance to damage from contact grouting.
4. Calculations showing the hydraulic pressure that is required to develop the maximum allowable jacking force for main jacks. A description of controls to ensure that the maximum allowed hydraulic pressure will not be exceeded during jacking operations. Calculations demonstrating that the soils behind the backstop (or thrust wall) will sustain the maximum forces developed by the main jacks.
5. Calculations showing anticipated face pressure and side resistance for tunnel boring machine and pipe string.

**C.4.5 Work Plan**

Prior to the start of work, submit a generalized work plan to the department. This submittal is in addition to the detailed schedule that is required in standard spec 108.4. The work plan shall include descriptions indicating the proposed locations of workshafts, facilities, and equipment to be utilized and shall describe the methods of construction. The work plan shall include, but not be limited to, the following items:

1. Access, manhole and structure workshaft plans and sequencing.
2. Workspace layouts and sizes including crane locations, pipe unloading and storage areas, muck stockpiles, separation plant size and location and muck loading facilities.
3. Hoisting plant (crane) for placement of MTBM, jacking equipment and pipe, and for muck removal.
4. Dimensions of tunnel excavations.
5. Methods of excavation, and equipment to be used.
6. MTBM to be used for tunnel excavation showing dimensions, cutterhead design and face control capability, amount of overcut on the cutterhead radius, propulsion system, articulation provisions, means of installing initial support system, and trailing gear.
7. Muck handling equipment and methods, including muck transfer from the heading, surface retention, and disposal.
8. Tunnel ventilation system layout and minimum capacity.
9. Capabilities of hazardous gas monitoring, alarm, and equipment shutdown system.
10. Bulkhead placement and removal.
11. Provisions for controlling line and grade, and survey frequency with respect to progress of excavation.
12. Location(s) of temporary stockpile and disposal site(s) and copy of release(s) from affected property owners.
13. Procedures for MTBM launch and reception.

14. A safety plan for personnel conducting the tunneling operations, including provisions for lighting, ventilation, and electrical system safeguards. The contractor shall provide the name and resume, with references and certifications, for the on-site safety representative.
15. Contingency Plans:
    a. High jacking forces.
    b. Damaged pipe.
    c. Obstruction(s).
    d. Settlement exceeding limits specified in subsection I of this article, Protection of Property and Ground Movement.
    e. Loss of line or grade beyond tolerances specified herein.
    f. Major mechanical breakdown.
    g. Stoppage of jacking.
    h. Leakage of groundwater into the tunnel.
    i. Loss of cutter tools on the cutter head of the MTBM.

The work plan shall include proposed methods for support and protection of adjacent structures and other facilities that might be impacted by workshaft and tunnel construction.

**C.4.6 MTBM Documentation**

Prior to the use of MTBMs, submit detailed documentation to the engineer showing that the design, specification and method of operation will meet the requirements specified in this section for the MTBM. The following shall be included:

1. MTBM performance and operating specifications, manufacturer's or rebuilder's working drawings and details of accessory and monitoring equipment. Include calculations showing target range for face pressures to be maintained and provide details of how face pressures will be monitored and recorded. Also include descriptions and plans for any jetting of water or conditioners at the heading.
2. Describe the cutterhead configuration including sketches and descriptions of the cutting tools, excavation diameter, and head profile. The submitted excavation diameter shall be verified upon MTBM mobilization to site by measurement of gage cutters and cutter head diameter in the presence of the engineer. Provide manufacturer's written certification that the MTBM, cutterhead, and cutting tool configuration have been specifically designed for the soil conditions anticipated on this project, as described in the Geotechnical Baseline Report, and tunneling of the grout zones as specified in subsection F of this article, Ground Improvement.
3. Drawings and details showing excavation and mucking systems and components, trailing equipment, and muck handling and transportation equipment. Include dimensions, manufacturer's specifications, capacity, noise rating, and soundproofing details on the slurry separation and re-circulation components and system. Details shall be provided on the planned slurry composition and any slurry additives that are planned for use during the microtunneling operations. Include diagrams showing the location of all slurry delivery and return pumps. Provide written documentation signed by the site owner or manager of the disposal site(s) indicating that the site will accept the muck or slurry and the site is in compliance with all applicable local, State, and

Federal regulations. Submit muck transport plans, including route to be used and measures to avoid spillage on-site or on to streets and highways.

4. Details of the methods, if needed, to probe the ground in the portal zone for rate of groundwater inflow and stability, control groundwater and prevent excess loss of ground into the workshafts at portals when launching from the launching shaft and entering into the receiving shaft. Provide seal and ground improvement details to prevent intrusion of water, soil, lubrication slurry and grout into workshafts.
5. A description of the laser guidance, alignment control, and steering systems. Confirm that these systems can achieve the required pipeline line and grade within the specified tolerances. Provide manufacturer's literature for laser and show details of laser supports in launching shaft. Provide documentation that the laser has been tested and that required function, accuracy, and precision have been verified by the contractor.
6. Arrangement, position, and details of main jacks, thrust ring, jacking controls, and pressure gages.
7. Jacking operations for main jacks.
8. Thrust block and jacking frame design and details, including reaction transfer calculations.
9. Details of pipe lubrication system and description of pipe lubricants to be used during pipe jacking, including manufacturer’s literature.
10. Contact grouting equipment and procedure, including grout hole pattern.
11. Provide description, including drawings of the method and special equipment and materials required for retrievability of the MTBM through the jacking shaft without the need for a rescue shaft. The description shall address resumption of the bore in the same location after the problem is corrected and grouting to fill the aborted bore and ensure stability of the excavation, if the bore cannot be resumed and completed.
12. Method of preventing inward movement of the pipe or MTBM toward the launching shaft when the main jacks are released to set a new pipe.
13. Include letter from proposed pipe manufacturer certifying their acceptability and approval of the Pipe Jacking Plan and above criteria with respect to their pipe on this project.

**C.4.7 Daily Records**

The following daily records shall be submitted by the contractor by noon on the day following the shift for which the data or records were taken, to the on-site engineer for review:

1. Jacking Records: The contractor shall provide complete written jacking records to the engineer. These records will include, at a minimum, date, time, name of operator, tunnel drive identification, installed pipe number and corresponding tunnel length, rate of advance, jacking forces, cutterhead speed and torque, slurry flow rates and pressures, bypass valve position, use of any cutting or high-pressure nozzles, face pressure, steering jack positions, line and grade offsets, any movement of the guidance system, machine inclination and roll, pressure, volume, and location of lubricant pumped, problems encountered with the tunneling machine or other components or equipment, and durations and reasons for delays. The operating system shall continuously provide performance data to the operator. Computer-recorded data shall be referenced to time and distance and be recorded at time intervals of one minute or

less. Manually recorded observations should be made at intervals of not less than three times per pipe, as conditions change, and as directed by the engineer. At least seven days prior to the launch of the machine, the contractor shall submit samples of the automated and manual jacking records. Samples shall include electronic data and any necessary programs to interpret data, and the manual logs or records to be used.

2. Muck Records: Provide a generalized description of the excavated soil (muck) including records of any obstructions or contaminated soil encountered (including photo-ionization detector readings) and computed muck volume and excavated soil volume records for each pipe shove or lining segment advance, including indications of lost ground at the heading.
3. Obstructions Records: Provide records of any obstructions documenting: station; time obstruction encountered and delay time; obstruction position at heading; type of obstruction; estimated size and shape, method of removal or means of advancing through obstruction; and MTBM delay time for obstruction removal.
4. Lubrication Records: Provide lubrication records to the engineer. These records will include the amount, in gallons, of lubrication pumped throughout a drive, reported as pumped volume per shift, and total for each drive. The records will also include the type of additive used and amount, in pounds or gallons used, and date, time, and drive distance when used.
5. Slurry Additives: Provide records of slurry additives to the engineer. These records will include all slurry additives, including bentonite and polymers, and will be submitted with the daily jacking record. The time and volume, or weight, of the addition to the slurry shall be noted. Measurements of mud weights, specific gravity and viscosity will be made at the beginning, middle, and end of each shift, and submitted with the daily logs. Measurements will be made on slurry mixtures in the slurry tanks and noted accordingly.
6. Gas Monitoring Records: Provide records of atmosphere quality monitoring, ventilation operating conditions, airflow measures, any toxic gas observations, any combustible gas measurements exceeding 10 percent of the lower explosive limit for the contaminant encountered, any alarms and MTBM and tunnel component deactivation from explosive gas infiltration.
7. Provide immediate notification to the resident engineer if monitoring in the tunnel or geotechnical instrumentation indicates that significant face instability or excess loss of ground has occurred and may cause or has caused settlement Action Limits to be exceeded.

Before each drive commences, survey the jacking frame rails to confirm design line and grade and perform probing of the ground in the portal zone. Contractor shall submit results to the engineer and obtain engineer's approval of survey of installed jacking frame rails and results of probing of the portal zone prior to launch of the MTBM.

**C.4.8 Structures Assessment**

Preconstruction and post-construction assessment reports shall be provided for critical structures, namely those located within the zone of active excavation from the proposed tunnel centerline. Photographs or a video of any existing damage to structures in the vicinity of the pipeline alignment shall be included in the assessment report.

### C.4.9 Other Submittals

1. Safety Procedures: Complete information on contractor's proposed safety plan for personnel conducting the tunneling and appurtenance installation. The plan shall include provisions for lighting, ventilation, air quality monitoring, and electrical safety. All OSHA, federal, state, county, city, or local Laws and Regulations shall be followed.
2. Power generation plant sound rating data shall be submitted. Sound level rating data shall be based on actual tests of an identical unit or a similarly packaged unit of equal capacity with calculated corrections submitted for review. Manufacturer’s test procedure, equipment, and reporting shall conform to SAEJ1074, Engine Sound Level Measurement Procedure or ANSI/ASME PTC36, measurement of industrial sound.
3. Construction schedule (updated monthly).
4. Results of any geotechnical investigation conducted by the contractor.

## C.5 Contact Grouting Submittals

### C.5.1 Contact Grout Mixes

1. Submit to the engineer for approval all proposed grout mixes for contact grouting. Provide the submittal a minimum of 30 days prior to start of grouting operations. Resubmit as appropriate if the mixes are modified during the course of the work.
2. Submit mix designs for each contact grout mix proposed for use. Each mix design shall show the ingredients of the mix and shall include:
    a. Type, brand, source, and amounts of cement, admixtures, and other additives.
    b. Source and amount of water.
    c. Representative samples of materials for materials testing and mix proportion testing.
    d. Combined grading of each mix design.
    e. Specific gravity of all materials.
    f. Results of required tests.
3. Submit a certificate of compliance signed by the supplier identifying the type of fly ash (if used) and stating that the fly ash is in accordance to ASTM C618 and these specifications. Supporting test data shall be furnished when requested by the engineer. All testing and sampling procedures shall be in accordance to ASTM C311.
4. Submit water quality test results.
5. Submit material specifications and instructions for use of any proposed concrete admixtures.

### C.5.2 Contact Grouting Work Plan

Submit prior to the start of any excavation a work plan for contact grouting. The work plan for placing contact grout shall cover each type of contact grouting required and shall include:

1. Contact grouting methods, procedures and sequences for each tunnel segment.
2. Grout hole locations and depth of injection ports where the ports are not predrilled such as with one-pass jacked pipe tunneling.
3. Plans for grout port opening in advance of injection at a port and release of water disturbed soil or slurry.

4. Method of transporting grouting equipment, grout and materials into and within the tunnel.
5. Quantitative prediction of grout volumes required at each location, with consideration of volume of annular space due to difference between diameter excavated and outside diameter of initial support system or jacked pipe, ground loss volumes, soil stand-up time and diametrical closure.
6. Means for measuring grout takes (volume) per foot or segment of initial support system or pipe.
7. Means for measuring grout pressures and planned grout pressure limits for refusal criteria.
8. Timing of grout injection after completion of a drive for pipe jacking.

**C.5.3 Contact Grouting Equipment**

Submit prior to the start of grouting operations calibration records for all meters and gauges to be used in grouting operations.

Submit the following for each type of contact grouting proposed:

1. Manufacturer's specifications and operation instructions for grout conveyance equipment.
2. Pump specifications.
3. Grout hose, valve and port sizes and specifications.
4. Grout pressure gages and pressure gauge calibration data.

**C.5.4 Contact Grouting Records**

Submit prior to performing grouting for each tunnel segment:

1. Mill test reports for Portland cement.
2. Certificates of compliance for each load of Portland cement and fly ash (if used).
3. Certificates of compliance for all admixtures.
4. Proposed contact grout mix designs with mix data for all components, mix properties including admixtures, slump and wet unit weight, and testing results including cured unit weight and compressive strength tests reports from a certified testing laboratory.

Submit the following daily reports and records for jacked pipe contact grouting:

1. Daily logs of grouting operations at all contact grouting locations (station and position) of grout ports, including pressures, volumes, and grout mix pumped, times of injecting, locations where grout samples for test cylinders are taken, and grout slump results.
2. An analysis of overcut annulus volume at the time of grouting with consideration of soil stand-up time, diametrical closure and effects of injected bentonite slurry volumes. Provide a comparison of anticipated annulus volume with grout volume placed by contact grouting for each pipe.
3. Compressive strength tests reports from a certified testing laboratory.

**D Control of Water**

**D.1 General**

This section addresses the provisions for controlling, handling, disposing and treating groundwater and surface water, including contaminated groundwater that may be

encountered in tunnel and workshaft excavations, as required for performance of the work; maintaining the control of water facilities, including maintenance items such as the disposal of sludge from settling basins and treatment plants; and work necessary to repair or replace property damaged due to groundwater disturbance.

General dewatering and lowering of the groundwater table for the purpose of stabilization of the tunnel face during mining will not be permitted for tunnel construction associated with the proposed culvert crossings. Localized dewatering and lowering the groundwater table outside of workshafts is permitted.

The contractor is responsible for designing, furnishing, installing and maintaining dewatering system that accomplishes continuous control of water at all times during the course of construction, and shall provide adequate backup systems to accomplish control of water. The method of control, handling, and disposal of groundwater and surface water shall be by whatever means are necessary and in conformance with this section to obtain satisfactory working conditions and to maintain the progress of the work.

All required drainage, pumping, treatment, and disposal shall be done without damage to adjacent property or structures and without interference with the operations of other contractors, or the rights of public and private owners, or pedestrian and vehicular traffic.

The contractor shall modify the water control system at his own expense if, after installation and while in operation, it causes or threatens to cause damage to adjacent property or to existing buildings, structures, or utilities.

**D.2 Regulatory Requirements**

Storm water discharge to storm sewers, watercourses, lakes, and wetlands shall conform to the requirements of local, state, and Federal regulations.

Water from excavations shall be kept separate from storm water discharge associated with surface construction. Water from excavations shall be discharged into the nearest sanitary sewer, in compliance with all applicable codes and regulations. Discharge into storm sewers, open waterways, or on open ground is prohibited.

In the event that contaminated waters are encountered, the contractor is required to notify the department prior to discharging contaminated water into the sanitary sewer system. The contractor may be required to provide laboratory test results documenting contaminant concentrations.

**D.3 Products**

**D.3.1 Materials**

The contractor is responsible to determine materials required to meet these specifications.

**D.3.2 Geotechnical Instrumentation**

Conform to the requirements of the article Geotechnical Instrumentation.

**D.4 Execution**

**D.4.1 General**

Geotechnical instrumentation shall be installed and baseline surveyed at least two weeks prior to starting any dewatering activities.

Continuously control, handle, treat and dispose water at all times during the course of construction, and provide adequate backup systems to accomplish control of water in conformance with this section to obtain satisfactory working conditions and to maintain the progress of the work. Water to be controlled includes groundwater, contaminated groundwater; surface water (precipitation and run-off); and wastewater from combined or separated sewers or related facilities.

Obtain all permits required from WDNR and any other agencies for installation and operation of water control systems and discharging of collected water into water courses, water bodies, sewers or the ground.

Perform the work without damage to adjacent property or structures and without interference with the operations of other contractors, or the rights of public and private owners, or pedestrian and vehicular traffic. Modify the water control system at your own expense if, after installation and while in operation, it causes or threatens to cause damage to adjacent property or to existing buildings, structures, or utilities.

**D.4.2 Water Control Plan**

Submit the required documents as listed in subsection C.1 of this article, Control of Water Submittals. The engineer will review the submittal. If the submittal is not accepted, the engineer will offer comments for the contractor’s consideration.

Resubmit as appropriate if the system or any part thereof is modified during installation or operation. Should requirements of any permit be different than requirements herein, the more stringent requirements shall control.

Provide the submittal at least 30 days prior to installation of water control systems. Resubmit as appropriate if the system is modified during installation or operation.

**D.4.3 Surface Water Control**

Intercept and divert surface drainage away from the work sites by the use of dikes, curbwalls, ditches, sumps, or other means. Design surface drainage systems so that they do not cause erosion on or off the site. Control surface runoff to prevent entry of surface water into excavations and to prevent erosion on or off the site. Remove drainage systems when no longer needed.

**D.4.4 Water Control in Excavations**

Use water control methods that are appropriate, as determined by the contractor, to permit conditions, ground conditions, construction operations, and requirements of these plans and specifications. The methods shall involve removal of water accumulating within excavations

from precipitation and groundwater infiltration, and may involve removal of water outside excavations by means such as the use of dewatering or pressure relief wells.

Water control measures shall minimize adverse effects of elevated or reduced water pressure on the work, the surrounding ground and adjacent facilities and structures. Design and operate the water control measures to prevent removal of in-site materials (development of lost ground), or loosening or softening of subgrade soils within excavations.

The water control methods shall be of such capacity that they will lower and maintain the free water and piezometric levels, to an elevation at least 2 feet below all earth slopes, workshaft bottoms and excavation surfaces. The methods shall have sufficient capacity to accomplish this desired result allowing for normal variations in precipitation and soil and aquifer properties.

Control groundwater and surface water such that the construction of tunnels, workshafts, open-cut excavations, trenches and other structures can be performed without adverse effects of water on the facilities being constructed, including prevention of hydrostatic uplift pressures on the new facilities until construction has been adequately completed. If soil stratification is such that the water level cannot be maintained at the specified levels, contractor shall, at no additional cost to the department, control seepage of groundwater by whatever means are necessary to assure that there is no loss of ground by erosion or piping of fines with seepage through shoring or lagging into workshafts or tunnels and no instability of slopes due to seepage. Control water during periods when excavating, installing ground support systems, installing subgrade protection measures, placing concrete (except tremie concrete), placing pipe, and at such other times as is necessary for efficient and safe execution of the work.

Should water enter the excavation in amounts that could adversely affect the performance of the work or that has the potential to cause loss or damage to adjacent property or structures, take immediate steps to control the water inflow.

Provide standby pumps and standby power supply where disruption of water control systems could allow water inflows to threaten the work or the safety of personnel.

**D.4.5 Monitoring of Groundwater Levels**

Monitor groundwater levels as necessary to evaluate the sufficiency of the control of water system. A system of construction piezometers is required if dewatering is performed to monitor free water surface elevations and piezometric elevations to evaluate the effectiveness of the water control system in fulfilling the requirements specified herein. Piezometers shall be of adequate numbers and in suitable arrangements and depths for determining the free water surface elevations and piezometric elevation over the area. A minimum of one piezometer per four dewatering wells or one per excavation location shall be installed with the dewatering system at locations and depths proposed by the contractor and approved by the department's representative.

The contractor shall make a minimum of one reading at each piezometer, per 24-hour period, 5 days per week during the period of dewatering activities (including dewatering by pumping seepage from sumps within workshafts and tunnels) and one reading at each piezometer per week until the end of construction during periods of no dewatering. These piezometer readings shall be recorded on an approved form and reported to the engineer within 24 hours after they are obtained.

**D.4.6 Dewatering Wells**

Obtain a site-specific dewatering discharge or construction site storm water discharge permit if the WDNR has specific concerns that are not addressed by other permits that might otherwise apply.

Obtain a WDNR permit for operation of any well or well system that has a combined pumping capacity of 70 gallons per minute or more (a high capacity extraction system). For purposes of permitting, a well is defined as any opening made in the ground where the depth of the opening is greater than its largest surface dimension and extends more than 10 feet below ground surface. The permit will require that wells be constructed, operated, and abandoned in accordance to Chapter NR 812, Wis. Adm. Code.

Comply with WDNR regulations regarding disposal of contaminated groundwater in the event that contaminated waters are encountered. Obtain additional permits, if required. Notify the Department of Natural Resources for any discharge of contaminated water into the sewer system, and provide laboratory test results documenting contaminant concentrations.

Keep dewatering from wells to the minimum necessary for execution of the work. Obtain any additional geotechnical information necessary for design of a dewatering well system, including performing pump tests, grain size analyses, groundwater chemical analyses, and subsurface investigations. Design and operate wells so as to prevent removal of fine soils with seepage through backpack material and screens. Provide means by which water discharge from each well can be measured and flow rates adjusted. Construct and operate wells in accordance to WDNR requirements, including obtaining permits, as required.

The wells shall be designed, installed and operated in a manner that will preclude removal of materials from the foundation by the pumping operation (hereafter referred to as "piping of fines"). After installation, each well shall be individually pump-tested at maximum design flow to verify acceptability with respect to piping of fines (sediment mostly consisting of silt and sand) as measured using a centrifugal tester. Any well or wellpoint segment found to be causing piping of fines at a rate exceeding 2 parts per million (ppm) by volume during the individual pump-test at the maximum design flow shall be replaced in a manner acceptable to the engineer, and at no additional cost to the department. Each well shall be checked for sediment piping using a centrifugal tester immediately after installation and at least once per month during operation. Measure the sediment content of the total dewatering effluent using a centrifugal tester at least every 30 days. If the sediment content of the total effluent is greater than 1 ppm, contractor shall identify and abandon wells that are producing excessive sand and replace them if necessary. All sediment content tests shall be performed

in the presence of the engineer. Sediment content test results shall be furnished to the department within 24 hours.

Monitor the rate of discharge from each well on a daily basis with an accuracy of at least 2 percent of the flow and make records available to the engineer on a weekly basis or as requested. Abandon dewatering wells as specified in standard spec 204.3.3.3 and in accordance to NR 812 Wis. Adm. Code, whichever is more stringent.

**D.4.7 Ground Loss from Removal or Disturbance of Groundwater**

Immediately support any structure including, but not limited to, buildings, bridges, freeway surfaces, streets, and utilities, or portions of such structure, including footings, foundations, basements, walls or concrete driveways that become unstable or vulnerable to settlement due to removal or disturbance of groundwater. Cease excavation and other construction operations that result or have the potential to result in further settlement until corrective measures are implemented. Support shall include but not be limited to shoring; sheeting; bracing; underpinning; compaction grouting; driving piles; excavating, backfilling, and placing new structural concrete beneath or adjacent to the unstable structure; or other means necessary to rectify the particular problem involved.

Bear the costs of all loss or damage arising from removal or disturbance of groundwater including, but not limited to claims for subsidence and loss of structure support that may occur in the prosecution of the work. If the contractor fails to correct the damage resulting from his operations, the engineer may deem the work to be unacceptable work as defined in standard spec 105.3.2.2.

**D.4.8 Treatment and Disposal of Water**

Discharge all water removed from the construction site through pipes or hoses. Do not convey water in open ditches or trenches. Discharge water in a manner that will not cause soil erosion at the discharge point. Discharge shall not cause sediment accumulation or flooding in any stream, storm sewer, or on adjacent properties.

Treat all water to remove suspended solids, oils, cement, bentonite, and other contaminants by use of settling basins, on-site treatment plant, or other means selected by the contractor. Design the treatment systems for the maximum discharge rates anticipated based on information provided in the Geotechnical Baseline Report and rates that are consistent with the means and methods selected by the contractor. Treatment systems shall be capable of expansion if greater capacity becomes necessary during the course of the work. Provide to the engineer copies of all records required by the WDNR.

Obtain permission to use storm sewers or drains for water disposal purposes from the authority having jurisdiction. Protection of storm sewers and drains shall be in conformance with the Wisconsin Construction Site Best Management Practices Handbook, latest revision. Any requirements and costs for such use shall be the responsibility of the contractor. Do not cause flooding by overloading or blocking the flow in the drainage facilities, and leave the facilities unrestricted and as clean as originally found. Document the condition of the drainage facilities prior to and subsequent to their use. The engineer may independently

verify the condition of such facilities. Repair or restore any damage to facilities as a result of the contractor's operations as directed by the authority having jurisdiction, at the contractor's expense.

Should requirements of any permit be different than requirements herein, the more stringent requirements shall control.

Remove suspended solids from water discharged from excavations, sufficient to preclude sediment deposition in the receiving sewer.

Ventilate enclosures around wells and water discharge points to prevent the accumulation of combustible gas that may escape from solution in groundwater.

On completing the work, clean out and dispose of all sediments and residues in settling basins, treatment facilities, and the like. Dispose of sediments and residues in accordance to applicable regulations.

**D.4.9 Abandonment of Piezometers**

At the conclusion of all tunnel and workshaft construction, abandon all piezometers installed during construction if needed in accordance to the article Geotechnical Instrumentation, standard spec 204.3.3.3, or in accordance to NR 812 or NR 141 of the Wis. Adm. Code, whichever is more stringent.

**E Shaft Excavation and Support**

**E.1 General**

This article addresses the provisions and responsibilities to be considered by the contractor and its ground support system design engineer in meeting requirements to design, furnish and install, and remove when applicable, the initial ground support for workshafts, and other excavations for construction of structures to meet the specified contract provisions.

**E.2 Responsibility**

The contractor shall be responsible for design of excavation support and excavation systems for excavations greater than 5 feet in depth and not specified herein or shown on the Plans. Contractor designed elements shall be in accordance to the contract documents, referring to all of the Plans, Specifications, Geotechnical Baseline Report and shop drawings submitted to provide details of support systems, attachments, embedments, finishes and other construction that affects the work covered under this article.

It is the contractor's responsibility and his professional engineer to review the Plans, Specifications, Geotechnical Baseline Report and existing site conditions prior to bidding to ascertain the extent of the work requiring ground support systems.

The design, furnishing of materials, installation, monitoring and removal of ground support systems is the sole responsibility of the contractor. Ground support system and safety elements necessary for protection of adjacent property, excavation stability and safety of

workmen during construction are not shown on the Plans but shall be designed, furnished and installed by the contractor.

Existing utilities such as underground water and sewer lines, overhead electric lines, and utility poles will be either within or adjacent to some of the workshafts. For utilities that are shown on the Plans, the contractor is responsible for the protection and relocation of existing utilities, and the removal of abandoned utilities, as required for the construction of the workshafts. If existing utilities shown on the Plans are damaged as the result of the contractor's construction activities, the contractor is responsible for the cost of repairing damaged utilities. Unless otherwise shown, inside diameters of the utilities are shown on Plans. The contractor should field verify all utilities located at and within 15 feet of the workshafts or the tunnel prior to excavation.

**E.3 Design of Excavation Support Systems**

**E.3.1 Designer Requirements**

Employ or retain a professional engineer licensed in the State of Wisconsin to prepare the design of excavation support systems. This engineer is referred to herein as the contractor's engineer. The contractor's engineer shall have at least five years of experience with design and construction of similar types of ground support systems and excavations. The contractor's engineer shall maintain involvement and responsibility from design through installation, performance and abandonment or removal of ground support systems.

**E.3.2 Design Criteria**

All ground support system elements including sheeting, shoring, and bracing of trench and workshaft excavations shall conform to the requirements of Subpart P, Excavations (1926.650 of 29 CFR) of the Occupational Safety and Health Administration (OSHA).

The design shall provide groundwater control or cut-off, bottom stability and system stiffness sufficient to meet the contract requirements for control of water and for protection of adjacent work and property as specified in subsection D of this article, Control of Water and subsection I of this article, Protection of Property and Ground Movement Limits. The design shall be compatible with the contractor's selected methods of excavation. The design shall provide for placement of excavation support systems and removal of the excavation support systems where required and feasible. The design shall provide for construction of the permanent work, and all other construction operations and requirements.

Design shaft excavation support systems and working slabs to withstand earth pressures, groundwater pressures, bottom heave, equipment loads, thrust block loads from pipe jacking, loads from making a portal for tunneling, applicable traffic and construction loads, and other surcharge loads to allow the safe construction of the tunnel without movement or settlement of the ground, and to prevent damage to or movement of adjacent structures, streets, and utilities. Design excavation support systems to be compatible with the geologic conditions described in the Geotechnical Baseline Report and in accordance to AISC and ACI code provisions, as applicable.

1. Design each member or support element to support the maximum loads that can occur during construction with appropriate safety factors. Provide a minimum factor of safety of 1.5 for all structural members when subjected to the maximum combination of loads or stresses. The thrust block shall be normal (square) with the proposed pipe alignment and shall be designed to withstand the maximum jacking pressure anticipated with a factor of safety of at least 2.0, without excessive deflection or displacement.
2. Design the support system to minimize horizontal and vertical movements, and to protect adjacent utilities from damage. The type and stiffness of each ground support system and the methods of ground support installation shall be designed and constructed in order to meet the ground movement limits and adjacent property protection requirements specified.
3. Design support system to maintain the stability of the excavation against sliding or bottom heave. Provide a minimum factor of safety against sliding of 1.5. Provide a minimum factor of safety against bottom heave due to adjacent surcharge pressures and hydrostatic uplift pressures or upward seepage pressures of 1.5.
4. Employ combinations of wales, struts, tie-back anchors and beams for bracing and lateral support as required to support excavation faces and control groundwater and prevent loss of ground with soldier piles and lagging, ribs and lagging, liner plate, sheeting systems or other methods of ground support. Provide struts with intermediate vertical and horizontal supports to prevent buckling. Provide timber lagging, liner plates, or steel sheeting as required to retain soil between supports. Trench shields and/or speed shores are not allowed for workshaft construction.
5. Design a gravel pad or concrete working slab equipped with a sump to pump out construction water and storm water for shaft excavation bottoms to provide stable support for construction operations.
6. Locate workshafts as required to construct tunnels between the stations indicated on the drawings.

The support system shall be designed to ensure that no earth or other loading will be placed on the new structures prior to substantial completion of them and until design strength has been reached. The contractor shall be solely and completely responsible for any damage or loss due to premature loading of the new structures.

The design shall specify the following items as a minimum: the quality of materials to be used for excavation support systems; constraints on maximum excavation limits relative to support installation steps; tolerances for size and position of ground support elements; required preloading of excavation support elements; restrictions on surcharge loads and other loads that may act on the excavation support system such as jacking forces and grouting, ground freezing and groundwater pressures; ground support system and adjacent ground movement limits; provisions for subgrade stability and protection; and constraints on removal of support system elements as the permanent work is constructed and backfilling is completed.

## E.4 Products

### E.4.1 General

The contractor's ground support system design engineer shall specify ground support system material requirements in accordance to the submitted designs. The materials, however, shall meet the minimum requirements listed below.

Incorporation of used prefabricated elements into excavation support systems is permitted, provided the strength and stability of used elements is verified prior to incorporation, and allowances made for lost strengths, if any, due to existing damage or deterioration.

### E.4.2 Materials

Materials used in construction of the workshaft support systems shall meet these requirements:

1. All timber and structural steel used for the supporting systems, whether new or used, shall be sound and free from defects that may impair their strength.
2. Structural Steel: Conform to ASTM A36 unless approved otherwise.
3. Timber: All timber shall be structural grade with a minimum allowable flexural strength of 1,100 psi.
4. Grout: Conform to subsection H of this article, Contact Grouting.

## E.5 Execution

### E.5.1 General

Whenever necessary to prevent caving during excavation to protect adjacent structures, property, workmen, and the public, adequately sheet and brace excavations. All sheeting, shoring, and bracing of excavations shall conform to the safety requirements of the Federal, State, or local public agency having jurisdiction over such matters. The most stringent of these requirements shall apply.

Design and install workshaft and tunnel ground support systems to support all anticipated loads. Design jacking pipe to accommodate handling and jacking stresses. Contractor designed elements shall be in accordance to these contract documents and shop drawings submitted to provide details of support systems, attachments, embedments, finishes and other construction that affects the work covered under this section.

Review the plans, specifications, Geotechnical Baseline Report, and existing site conditions prior to bidding.

Control of Water: Conform to subsection D of this article, Control of Water.

Design and furnish materials for installing, monitoring, maintaining, and removing ground support systems. Design, furnish and install ground support system and safety elements necessary for protection of adjacent property, excavation stability and safety of workmen during construction. These elements are not shown on the plans.

**E.5.2 Installation of Excavation Support Systems**

Excavation support systems for workshafts and trench excavations shall consist of ribs and lagging, soldier piles and lagging, liner plates, interlocked steel sheeting, or comparable systems that satisfy the requirements of the Contract.

Install support systems to permit the safe execution of the work, and to ensure that no ground loading or other loading will be placed on the new work prior to completion and until design strength of the structure being constructed has been reached.

Install excavation support systems in soil in a manner to prevent groundwater inflow into the workshaft excavations; control groundwater inflow into trench excavations; minimize loss of soil into the excavations; minimize ground movements outside of the excavations; maintain stability of the excavations; and preserve the in situ strength of surrounding soils.

During periods of shutdown, fully support the roof, face and walls of excavations to prevent lost ground.

Install excavation support systems in a manner to limit vibrations on the ground adjacent the nearest structure to a peak particle velocity of 2 inches per second or less.

In workshaft excavations in soil where the excavation support system is located in an oversized excavation a bentonite or polymer slurry shall be continuously injected behind the support system to stabilize the soils surrounding the excavation.

For workshaft excavations in soil where the initial support system is located in an overcut excavation resulting in voids over 1 inch wide, promptly complete contact grouting as specified is subsection H of this article, Contact Grouting. Contact grouting shall be performed to control groundwater inflow and ground movement into the excavation, and to provide firm and uniform contact between the support system and the ground. Grout holes shall be located as necessary to accomplish the work.

**E.5.3 Control of Vibrations**

Control vibrations from boulder splitting or installation and removal of driven sheeting for initial support systems to prevent damage to the work and adjacent property. Monitor ground vibrations at locations of structures as necessary to control adverse effects of vibrations. Monitor ground settlements as necessary to prevent detrimental settlements due to densification of loose soils from vibrations.

**E.5.4 Driven Steel Sheetpiles**

If driven steel sheetpiles are selected for shaft support, the shaft support system submittal shall, as a minimum, address the following items: interference with utilities, advancement past boulder obstructions; hard driving and sheeting advancement without damage within anticipated dense or hard ground; vibrations, noise and densification impacts; provisions for maintaining horizontal and vertical alignment control; size and method of structure and manhole placement, sequence of installation, structural design of the bracing system, structural design of thrust blocks for pipe jacking, method of constructing a bottom plug,

and plans for constructing portals (tunnel break-outs and break-ins) including ground stabilization if necessary to prevent lost ground and settlement risk.

**E.5.5 Soldier Piles and Lagging**

If soldier piles and lagging are selected for shaft support, the design and submittal of the initial support system plans shall, as a minimum, address the following items: interference with utilities; drilled hole advancement, including drilling equipment type, expected hole diameters and methods of maintaining hole stability; structural design of soldier piles, including size, weight, steel grade, depth, and backfill of hole with flowable fill; method of shaft excavating; method of removing boulder obstructions; method of lagging installation and overcut backfilling or contact grouting; design and installation of any internal bracing or tie-backs; structural design and method of constructing a bottom plug; and plans for constructing portals (tunnel break-outs and break-ins) including ground stabilization if necessary to prevent lost ground and settlement risk.

**E.5.6 Removal of Excavation Support Systems**

Repair any settlement or damage to the work or to adjacent property as a result of removing excavation support systems. Excavation support systems that cannot be safely removed and without causing settlement or damage to the work or adjacent property shall be left in place, at no additional cost to the department.

If backfill material is loosened to an extent that it settles more than one inch as a result of attempts to remove sheeting or other ground support members, the contractor shall be responsible for remedial measures to re-compact or consolidate the loosened backfill. The contractor’s engineer shall be responsible for determining if ground support system can be safely removed. Excavation support system elements that are left in place shall be at the contractor’s expense. Restoration of any damage and the cost of remediating disturbed backfill or adjacent property damage caused by removal of ground support systems shall be at the contractor’s expense.

**E.5.7 Workshaft Backfilling**

Backfill workshafts in accordance to standard spec 206.3.13. Workshaft excavation support system removal shall be in accordance to the requirements of subsection E.5.9, which describes circumstances under which some ground support system elements must be left in place.

Before backfilling a workshaft over the tunnel, place flowable fill as specified in this article, over the tunnel to a depth of two feet to prevent damage to the tunnel lining or pipeline. Do not place backfill until all buried structural concrete has reached at least 50 percent of its design strength.

**F Ground Improvement**

**F.1 General**

This section describes requirements for ground improvement to stabilize soils and groundwater at shaft locations to facilitate launching and retrieving the MTBM if required.

Ground improvement shall consist of grouting or other methods suitable to stabilize the ground, subject to the engineer's written approval.

Design, construct, and test stabilized grouted soils or other approved ground improvement for:

1. Stability of shaft excavations including walls and bases.
2. Stability of ground during exit of MTBM from jacking shaft and entry of MTBM into reception shaft where specified or found necessary.
3. Control of groundwater and inflows into shaft excavations.
4. Stability of ground and control of water when completing excavation chamber or face interventions in potentially unstable ground without use of compressed air.

The work includes mobilizing equipment for grouting or other approved method, determining suitable grouting procedures and grout mixes, installing test and production grouted zones, and control, containment, clean up, and disposal of waste materials resulting from grouting.

The contractor may propose other soil improvement procedures satisfying the performance requirements of this section, subject to engineer's written approval

**F.2 Quality Control**

Qualifications:

1. Grouting subcontractor shall have not less than five projects completed within the last ten years comprising the planning and execution of a grouting program of the scope and type required for this project.
2. Grouting superintendent shall be a full-time, on-site individual with responsibility for all grouting operations, and shall have at least 3 years of experience in the field application of grouting technology similar to that required for this project.

The contractor shall be responsible for all quality control testing of grouted zones. All test results shall be submitted to the engineer.

**F.3 Design Criteria**

Soil-Cement:

1. The 28-day compressive strength of the grouted zones shall be in the range of 200 to 500 psi.
2. The highest In-situ Permeability: $1.0 \times 10^{-5}$ cm/sec measured in accordance to contractor-proposed method.
3. The grouted soilcrete mass shall extend at minimum 3 feet beyond, up, down, left and right from any point on the portal eye edge.
4. For grout used at shaft exit and entry locations, confirm the adequacy of the design criteria as related to the behavior of anticipated soils and groundwater conditions and as integrated with the contractor's means and methods for performing the work. Contractor may propose deviations, subject to engineer's written approval.

Heave and Settlement Tolerances:

1. Control settlement and heave to prevent damage to surface features and utilities.
2. Maximum allowable heave or settlement shall conform to subsection I of this article, Protection of Property and Ground Movement Limits.
3. Repair any damage to utilities or surface facilities at no cost to the department.

Select drilling and grouting based on the soil conditions described in the Geotechnical Baseline Report.

Schedule and perform the grouting work so that grouted zones have achieved adequate strength to support the ground outside shafts at entry/exit locations, or at tunnel headings, and to prevent inflows of soil or groundwater prior to excavation.

**F.4 Products**

Grout: Shall be a mixture of Portland cement, water, and bentonite or other non-toxic, biodegradable admixtures as needed. The grout shall be mixed in a grout plant that combines dry cement and water in predetermined proportions. Grout mixes shall have a consistency that is fluid and pumpable. Grout mixes shall be proportioned to provide the required strength and mixing consistency.

Cement: Portland cement, ASTM C150, Type I or II.

Bentonite: Premium grade Wyoming Sodium Montmorillonite, manufactured in accordance to API Standard 13A.

Water: Only fresh and potable water shall be used for mixing grout.

Admixtures: Admixtures may be used as necessary to improve pumpability, to control set time, and to prevent segregation and bleeding. Admixtures shall be nontoxic and biodegradable and conform to ASTM C494.

**F.5 Execution**

**F.5.1 General**

All ground improvement work shall be performed in accordance to all local, state, and federal safety regulations and permits required for the project.

Coordinate ground improvement work with subsection E, Shaft Excavation and Support and subsection G, Microtunneling of this article.

**F.5.2 Grout Mixing**

Use a mixing plant for the preparation of the grout. The mixing plant shall consist of high-speed grout mixer, grout agitator, grout pumps and control unit, as required. The plant shall be capable of supplying a uniform grout mixture in the quantities required for timely execution of the work.

Mix cement, water, and any admixtures in the proportions indicated in the approved submittals. If bentonite is used, add bentonite to water and mix thoroughly to fully hydrate prior to adding cement. Time of mixing shall be as required to fully hydrate the bentonite but not less than 5 minutes. Any grout not injected within 90 minutes shall be wasted.

**F.5.3 Grout Injection Rate and Pressure**

Determine the appropriate grout injection rate and pressure during the test program and maintain this injection rate and pressure during construction of the production columns.

Monitor the grout injection rate by counting the strokes of the piston pump in a fixed period of time if piston displacement calibration is available or by using a flow meter.

Monitor the grout injection pressure with calibrated pressure gauges mounted on the injection lines. Prior to the start of each column, check the pressure to verify that there is no blockage in the jet grout rods.

Note and record on the daily shift reports the grout injection rate, volumes injected, and injection pressure for each column.

**F.5.4 Containment of Grout Discharge**

Contain all grout, water, and other drilling/grouting waste material within the work areas with berms, hay bales, silt fences, or other measures to prevent discharge of grout into the storm drains, sewers, drainage channels, or waterways.

**F.5.5 Cleanup**

Complete cleanup of the work area after grouting operations as soon as possible, and remove all grout spillage and residue from the work area prior to shaft excavation

**G Microtunneling**

**G.1 General**

This section describes materials to be incorporated into the tunnel and requirements for tunnel construction and to properly complete pipeline construction as described herein and/or shown on the plans. Furnish all materials and perform all labor necessary to fulfill the requirements of these specifications.

This section includes guidelines for soil tunneling in a one-pass system using MTBM followed by a jacked pipe. The MTBM also must be capable of tunneling through the grout zones as specified in subsection F or this article, Ground Improvement. Remotely controlled and guided microtunneling equipment with a slurry spoil removal system capable of maintaining positive face pressure, shall be employed to directly install the pipeline at the locations indicated on the plans.

Supply all materials and perform all work in accordance to applicable American Society for Testing and Materials (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI) or other recognized standards. If requested by the

engineer, submit evidence that manufacturer has consistently produced products of satisfactory quality and performance over a period of at least two years.

The contractor should note that the contract documents assume a certain workshaft to be used as a receiving shaft and the other to be used as mining or launch shaft for a microtunneling operation. These assumptions are based on consideration of the work to be performed at certain workshaft locations and on the department's interest in reducing workshaft size at selected locations. The assumed designations are shown on the plans and are discussed in the Geotechnical Baseline Report. The contractor may also launch from a workshaft location assumed in these documents to be a receiving shaft location. However, the contractor is advised that the geotechnical instrumentation program shown on the plans and described in the article Geotechnical Instrumentation has been developed based on the stated assumptions. If, subsequent to the installation of geotechnical instrumentation, the contractor elects to mine from location assumed by these documents to be receiving shaft location, then the contractor may be required to install additional geotechnical instrumentation of the types and at locations designated by the engineer, at no additional cost to the department.

**G.2 Classification of Tunnel Excavation**

In lieu of the excavation classifications defined in standard spec 205.2, tunnel excavation shall be classified as soil excavation or boulder obstruction excavation, as defined previously in this article. Complete all excavation regardless of the types of materials encountered. Contractor and its engineer shall review the Geotechnical Baseline Report, make a site visit, and make independent interpretations of the kind and extent of the various materials that will be encountered in the excavation as well as the presence or absence of water.

**G.3 Tolerances**

Jacking pipe shall be installed within tolerances not exceeding the following:

| Departure From: | Not to Exceed: |
|---|---|
| established horizontal alignment - | 3 inches per 100 feet or a maximum of 12 inches, except at junctions with structures where the maximum allowable shall be 3 inches |
| established grade - | 1 inch |
| pipe rotation (plumbness) | 1 degree |

**G.4 Qualifications**

The contractor and his field superintendent shall demonstrate and document their qualification for this project by their experience on projects of similar type, scope, and/or complexity:

1. The contractor and field superintendent shall have completed three microtunneling projects comparable to the size and scope of this project or the installation of 1,000 feet of pipe ranging in size from 36 to 84-inch inside diameter pipe in the last 5 years using microtunneling equipment manufactured by Iseki, Soltau, Lovat, Herrenknecht,

Robbins, or Akkerman. A minimum of one of the projects shall have involved tunneling under freeways.

2. The MTBM operator that will be utilized must show the minimum qualifications as listed herein.
3. The contractor and field superintendent may submit other information not called for that he deems pertinent in demonstrating his qualifications for review by the department and engineer.

Contractor shall provide evidence of OSHA certification for site safety representative and personnel responsible for air quality monitoring.

**G.5 Quality Assurance**

In addition to the provision of operational data referred to elsewhere in this specification, the contractor shall comply with the following:

1. Only qualified microtunneling contractors approved by the engineer are authorized to perform the microtunneling work. An approved microtunneling contractor will also be allowed to perform as a subcontractor.
2. The contractor shall establish and maintain quality control for operations under this section to assure compliance with the contract requirements and maintain records of quality control for materials, equipment, and construction operations.
3. The contractor shall keep and maintain at the construction site a complete set of field drawings for recording as-built conditions. It shall have marked or noted thereon all field information, properly dated, recording as-built conditions. This set of field drawings shall be kept up-to-date during the course of the project.

Provide at least seventy-two (72) hours advance written notice to the engineer of the planned inception of the microtunneling. The contractor shall immediately notify the engineer, in writing, when any problems are encountered with equipment or materials, or if the contractor believes the conditions encountered are materially and significantly different than those represented within the contract documents. All work by the contractor shall be done in the presence of the engineer, unless the engineer grants prior written approval to perform such work in engineer’s absence.

**G.6 Storage and Protection**

All materials shall be stored and protected in accordance to the manufacturer's recommendations.

**G.7 Safety**

All materials and methods of construction shall meet the applicable requirements of OSHA. Particular attention is called to Subpart S of the Standard (29 CFR 1926/1920, published as U.S. Department of Labor Publication 207, revised October 1, 1979, and revised again August 1, 1989. See the Federal Register dated June 2, 1989 for the revised standards and commentary).

All Work must be performed in accordance to the current applicable regulations of Federal, State, and local agencies. In the event of conflict, the more restrictive applicable requirements must be met.

No gasoline-powered equipment shall be permitted in the jacking shaft

**G.8 Preconstruction Survey**

After the contract is awarded and before starting the work, make a thorough examination, and a color digital video, of all existing buildings, structures, freeway and road pavements, sidewalks and other improvements that are within 200 feet of the work and that might be damaged by the contractor's operations. The examination shall be made jointly by the contractor, the engineer, and the property owner. The scope of the examination, and photographs taken, shall include cracks in structures, evidence of settlement, leakage, and similar conditions.

To monitor possible settlements, mark and record the freeway pavement, sidewalk and structure surface elevations at every 50 feet interval prior to the start of construction. Monitor these surface grades in the section that is being tunneled. Submit two copies of original elevations and final elevations after the completion of the tunnel section to the engineer. Engineer will submit one copy of original and final elevations to the Department.

Records in triplicate of all observations shall be prepared by the contractor. Two copies of each document and one copy of the digital video shall be provided to the engineer within 10 days prior to start of construction. Engineer will provide a copy of the digital video to the Department. Keep a copy of the digital video for your record until you receive the final payment.

The above records and photographs are intended for use as evidence in ascertaining the extent of any damage that may occur as a result of the contractor's operations and are for the protection of the adjacent property owners, the contractor, and the department. The records will provide a means of determining whether, and to what extent, damage may have occurred as a result of the contractor's operation.

The work specified under pre-construction survey are considered incidental and no separate payment will be made. Payment for the work will be included as part of the appropriate tunnel bid item.

**G.9 Products**

**G.9.1 Jacked Reinforced Concrete Pipe**

Conform to ASCE 27-00 - Standard Practice for Direct Design of Precast Concrete Pipe for Jacking in Trenchless Construction.

The minimum cement content shall be 564 pounds per cubic yard. The water/cement ratio shall not exceed 0.49. Concrete pipe shall not be coated internally or externally with any substance unless otherwise specified herein or approved by the engineer.

Prior to the manufacture of any pipe for this project, the contractor shall submit the pipe manufacturer's written in-plant quality control program which shall describe quality control procedures and materials testing to be used throughout the manufacturing process.

Reinforced concrete pipe manufactured by any method utilizing a rotating packer or platform will not be acceptable unless the manufacturer can demonstrate through physical testing that the concrete to steel bonding has not been impaired as a result of torsion induced into the steel reinforcement during casting.

Pipe shall be Class V in accordance to the plans, specifications, and per ASTM C 76 with "C" wall and have minimum concrete compressive strength of 6,000 psi. Pipe to be jacked into place shall have flush joints. No pipe to be jacked into place shall be delivered to the jobsite until the concrete strength has reached 6,000 psi as determined by core samples taken and tested in accordance to ASTM C 497. Each piece of pipe shall have one grout hole at the crown and one grout hole at each springline for pressure grouting. Grout holes shall be 2 inch minimum diameter with plugs cast into the pipe at the time of manufacturing.

A minimum of two circular rings of reinforcement positioned within both the tongue and groove of the pipe are required as well as auxiliary shear reinforcement at the joints. No quadrant reinforcing is permitted. Submit detailed design computations and pipe design including wall and reinforcement details for pipe to be jacked in accordance to Section 7.2 of ASTM C76.

Each length of pipe shall bear the name or trademark of the manufacturer, the location of the plant, the date of manufacture and the class or strength of the pipe. The markings shall be plainly visible on the exterior or interior of the pipe barrel and shall conform to the requirements of ASTM C76.

**G.9.2 Slurry and Lubricant**

Bentonite: Shall be high swelling montmorillonite clay or other product as approved by the engineer. High yield bentonites containing additives to artificially increase the resulting viscosity when mixed with water are not acceptable. Neat bentonite without additives shall be high quality Wyoming bentonite or similar.

Polymers: Polymers used as pipe lubricant or additive to bentonite or slurry water shall be non-toxic and compatible for use in a municipal raw water reservoir.

The use of slurry additives other than bentonite or polymer will require the approval of the engineer.

The slurry parameters shall be maintained by the contractor within those proposed and accepted in the submittals.

**G.9.3 Grout**

Conform to subsection H of this article, Contact Grouting.

**G.9.4 Microtunnel Boring Machines**

The tunnel excavation systems utilized shall be compatible with ground conditions. The MTBM is required and shall include the following features, as a minimum:

1. MTBM shall be slurry shield type.
2. Capability to fully support or breast the face during periods of excavation and periods of shutdown to maintain face stability, control of groundwater and prevent uncontrolled ground loss.
3. MTBMs shall have sufficient torque and speed for efficient operation through the anticipated ground conditions and shall be capable of being rotated clockwise and counter-clockwise to adjust for rolling effects. The MTBM available torque shall be high enough to provide ability to mine through zones of cobbles and boulders.
4. The main MTBM bearing shall be in good condition and adequately sealed to resist the entry of water and fine material. Bearing lubricant shall be checked for signs of contamination or for filings indicating problem bearing wear prior to launching each tunnel drive.
5. The MTBM shall have a rock crusher that is capable of digesting rocks up to 25 percent of the excavated diameter. The cutting wheel shall include a combination of disk cutters and other types of cutters that are designed for boulder fracturing and mining capability in the anticipated soil formations, and that are sufficient to prevent a stuck MTBM. The MTBM shall have interchangeable cutters. The contractor shall determine the cutter types and configuration.
6. Steerability and capability of controlling the advance of the heading to maintain line and grade within specified tolerances. MTBMs shall have a guidance system with necessary digital and graphic displays to show the MTBM position relative to its desired position at any time during tunneling. The MTBM shall include monitoring and recording equipment sufficient for documentation of thrust forces, start and stop times, rate of advance, position (heading station and MTBM pitch), line and grade deviation, cutting head torque and speed, advancement thrust, face pressure, face standup time/stability, generalized description of excavated muck, any obstruction encounters, groundwater seepage rates, computed muck volume, ventilation and atmosphere monitoring data and any other pertinent information for each pipe advance or initial support set.
7. MTBM shall be designed and constructed to withstand all loads and pressures that are likely to be encountered during tunneling operations without distress or excessive deformation. MTBM, shield, cutting wheel and other metal work in contact with moving soil or muck shall be suitably protected to minimize abrasion damage.
8. Compatibility with pipe jacking and the structural capacity of the jacked pipe support system when thrusting or reacting against it.
9. The tail of the MTBM shall have a sealing system and joint cushion that prevents ground and groundwater infiltration and pipe damage when thrusting or reacting against it.
10. Capability of handling and removing from the heading muck of high water content.
11. Total overcut around the jacked pipe, defined as the difference between the excavated diameter at the heading and the pipe, shall not be greater than 1.5 inches.

12. A gas detection and atmosphere monitoring system at the face that is capable of measuring at least oxygen, methane and volatile organic compound components of the atmosphere and of alerting the operating crew and shutting down the TBM at combustible gas levels of concern as required by OSHA and other applicable safety regulations.
13. A ventilation and atmosphere control system capable of reducing and/or eliminating dust, vapors, fumes, and other atmospheric impurities.
14. The MTBM shall be capable of exerting a controllable pressure against the face, during both excavation and shutdown periods, to support the excavation face, prevent groundwater inflows, and prevent loss of ground. Determine and submit for approval a safe range of slurry pressures at the face that are high enough to provide adequate face support and groundwater pressure resistance while low enough to prevent a slurry frac-out (hydro-fracturing) or ground heave. The cutting wheel chamber shall be equipped with at least one operating, calibrated pressure cell with an accuracy that allows face pressure to be maintained within ±0.1 bar of the desired pressure during mining.
15. A slurry mixture or consistency shall be used that minimizes slurry migration into the ground to allow a slurry cake to develop for ground support. Slurry line density measurements and any other suitable devices shall be used to check against excess lost ground (over mining) by computing the rate of tunnel muck removed as a percentage of the theoretical excavated soil weight for each pipe jacked.
16. Pumps and intake and discharge piping that are compatible with the tunnel drive lengths, depths, soil types and MTBM advance rate anticipated. The slurry return lines shall consist of abrasion resistant hoses with high pressure rating to resist the abrasive cuttings of cobbles and boulders. The intake ports size in the crushing chamber shall be adequate to allow for passing of all material sizes produced at the face. Select a proper type and size of pump impellers to take into account the anticipated large size cobble and boulder cuttings.
17. A surface separation plant equipped with screens, centrifuges, cyclones and settling tanks for efficient removal of muck (both coarse and fine-grained fractions) from the slurry at a rate compatible with the anticipated MTBM advance rate.
18. Full capability of meeting the construction needs of the project.

## G.10 Execution

### G.10.1 General Excavation Requirements

The contractor shall be responsible for selecting methods of tunneling that are compatible with the ground conditions as indicated in the Geotechnical Baseline Report, with placement and performance of ground support systems, with measures for control of water, and with requirements for safety of personnel and protection of adjacent property.

Interpretation of the Geotechnical Baseline Report and data, investigating the site and determination of the site subsurface conditions prior to bidding is the sole responsibility of the contractor. Any subsurface investigation by the bidder or contractor must be approved by the appropriate authority having jurisdiction over the site.

Furnish all necessary equipment, power, water, and utilities for microtunneling, shoring, excavation, bentonite mixing and pumping, removal and disposal of spoils, and other associated work consistent with the contractor's methods of construction.

Perform tunnel construction so as not to interfere with, interrupt or endanger freeway activity thereon, and shall minimize subsidence of the ground surface and utilities above and in the vicinity of the tunnel and to meet the settlement limits specified in subsection I of this article, Protection of Property and Ground Movement Limits. Support the ground continuously in a manner that will prevent loss of ground and keep the perimeters and face of the tunnel, passages and shafts stable. Support the tunnel face by positive means during all shut down periods. The contractor shall be responsible for all settlement resulting from tunnel operations and shall repair and restore damaged property to its original or better condition.

Maintain tunnel excavation line and grade to provide for construction of final lining within specified tolerances.

Ensure that the axial forces from the main jacks shall be distributed to the pipe uniformly to prevent damage to the ends of the pipe.

Thrust Blocks: Special care shall be taken when setting the jacking frame guide rails in the jacking shaft to ensure correct alignment and grade, and to ensure stability of the frame. If a concrete thrust block is used, concrete or other materials shall have attained the required strength before jacking begins.

Control the advance rate of the machine and balance the rate of removal of excavated material with the rate of excavation and pipe installation to avoid overexcavation that can lead to subsidence, and underexcavation that can lead to high jacking forces.

Maintain clean working conditions at all times inside the tunnel and workshafts. Remove muck, ponded water, grout spills, unused timber, and any other material extraneous to advancing the excavation.

Provide access for the engineer to inspect and observe the work, to perform independent line and grade surveys, for geologic condition observations if possible, for monitoring of instrumentation, and for installation of additional instrumentation, as deemed necessary by the engineer.

In the event that excavation threatens to endanger personnel, the work, or adjacent property, cease excavation. Evaluate methods of construction and revise as necessary to ensure the safe continuation of the work.

Conditioners and lubricants used to support the face, to lower jacking pressures, or to improve spoil characteristics for transport shall be handled and disposed of in accordance to applicable health and environmental regulations.

Perform all tunnel work in accordance to applicable permit conditions.

Perform tunneling work in accordance to the working hours established for the project. Notify the engineer at least 24 hours in advance of a proposed change in working hours, except in the case of emergencies. When the tunnel advancement is suspended for more than 30 minutes, the tunnel face shall be fully supported in accordance to accepted submittals.

If the microtunneling operations should encounter a condition that impedes the forward progress of the machine, notify the engineer immediately in writing. The contractor shall remove, treat, clear, or otherwise make it possible for the MTBM and jacked pipe to advance past any and all objects that impede forward progress of the machine. Upon written notification of the engineer, the contractor shall immediately proceed with removal of the object by retrieval of the MTBM or by other approved means, as submitted by the contractor in reviewed submittals.

Conduct all operations such that slurry separation, trucks, and other vehicles do not create a dust or mud nuisance or traffic hazard. Any muck spillage or slurry breakthroughs shall be promptly contained, cleaned up, removed, and properly disposed. The contractor's slurry separation plant shall discharge into a truck, tank, or container that prevents slurry spillage onto the ground surface, or right-of-way. Discharge from the slurry separation plant onto the ground surface, or right-of-way will not be permitted.

Upon completion of microtunneling and annulus grouting, installation of valves, screens and other appurtenances, all intake pipelines, intake shafts, and appurtenances shall be thoroughly cleaned by the contractor. All slurry, oils, grease, and other materials shall be completely removed from the pipelines and appurtenances by the contractor

**G.10.2 Blasting**
Blasting is not allowed anywhere on the project.

**G.10.3 Microtunneling**
Install each culvert using microtunneling that utilizes a precast reinforced concrete pipe as the final lining, subject to the restrictions on methods stated elsewhere in this article. The jacked, one-pass pipe method shall serve as both the initial ground support and final tunnel lining.

The contractor shall comply with the following (if needed):

1. Tunneling shall not begin until the contractor has completed portal zone ground probing (using the same demonstration steps as outlined for probing after ground improvement) and completed ground improvement as specified in subsection F of this article, Ground Improvement, at entry and exit portals and also behind thrust blocks (as necessary) to stabilize weak, running or flowing soils. The contractor shall confirm that the ground has been improved to the extent that ground will remain stable without movement of soil or water while the entry/exit location shoring is removed and while the machine is being launched or received into a shaft or during jacking operations.

The progressive steps identified below shall be used during portal zone ground probing and to confirm suitable ground improvements for all shaft types and entry/exit portals:

a. After the contractor believes that he has improved the ground sufficiently outside a given shaft seal, the contractor shall demonstrate the suitability of the improvements by cutting a 2-inch diameter hole in the shoring wall and at least 12 inches beyond the wall near the center of the bore. If no soil and less than 0.1 gpm of water enter the shaft, the contractor may progress to the next demonstration step. If any soil or greater than 0.1 gpm of water enters the shaft, the contractor shall seal the demonstration hole and further improve the ground before repeating the demonstration step.
b. After successful completion of the first demonstration step, the contractor shall demonstrate the suitability of the ground improvements by cutting a 12-inch diameter hole in the shoring wall and at least 12 inches beyond the wall at the location of previous demonstration hole. If no soil and less than 0.5 gpm of water enter, the contractor may progress to the next demonstration step. If any soil or greater than 0.5 gpm of water enters the shaft, the contractor shall seal the demonstration hole and further improve the ground before repeating the demonstration step.
c. After successful completion of the first two demonstration steps, and if the contractor believes the ground improvements are sufficient, the contractor may proceed with the remainder of the shaft wall penetration procedures.

2. The initial set-up of MTBM prior to start of excavation shall be appropriate to the configuration of the machine and to the ground conditions. The initial set up shall permit the MTBM to begin and continue the excavation within line and grade tolerances.

**G.10.4 Pipe Jacking Behind MTBM**

Conform to the CI/ASCE 36-15 - Standard Construction Guidelines for Microtunneling for design criteria that are specific to pipe jacking.

The pipe shall be jacked from jacking pits (launch shafts) to receiving pits (retrieval shafts) at manhole shaft locations as indicated on the drawings. When determining which shafts to use for jacking and receiving, account for schedule and sequence of construction requirements.

Provide exit seals in launch shafts and entry seals in reception shafts as necessary to minimize loss of lubricant, groundwater, or soil into the shaft at the pipe penetration. Exit seals and entrance seals shall be sufficient to prevent binding of the pipe due to loss of lubricant, lowering of groundwater pressure to unacceptable levels, or ground movement or settlement outside the shaft sufficient to damage structures. Supplement entrance seals and exit seals with ground modification measures as necessary to achieve desired results.

Set the pipe to be jacked on properly braced and supported pipe guide rails.

The axial forces from the thrust jacks shall be distributed to the pipe uniformly through cushion material to prevent damage to the ends of the pipe. Control the advance rate and the volume of material excavated to avoid over-excavation and heave.

Each pipe section shall be jacked as the excavation progresses in such a way that leaves no length of tunnel exposed at any time. Use anti-reverse thrust restraints to prevent pipe movement into launch shaft when jacking retracted for placement of a new pipe.

Pipes shall be jacked into place without damaging the pipe. In the event a section of pipe is damaged during the jacking operation, the pipe shall be jacked through to the receiving pit and removed. Other methods of repairing the damaged pipe may be used, subject to approval by the engineer.

Provide a pipe lubrication system to inject bentonite slurry and/or polymer at MTBM and pipe locations and in quantities as required to minimize pipe friction and jacking forces. Monitor and control pressures to prevent injection pressures at the pipe annulus from causing ground heave or “frac-out” (hydraulic fracturing) of the ground.

Pressure applied at the tunnel face shall be maintained at all times between a minimum equal to the sum of groundwater pressure and estimated active earth pressure and a maximum pressure that prevents ground heave and slurry frac-out as submitted and approved.

The thrust block at the jacking shaft shall be properly designed and constructed to provide a minimum factor of safety of 2.0 against the maximum possible thrust by the main jacks. The thrust block shall be normal (square) with the proposed pipe alignment and shall be designed to withstand the maximum jacking pressure to be used with a minimum factor of safety as previously specified, without excessive deflection or displacement. Where jacking in two directions from one shaft, the thrust block for the second drive from that shaft shall be designed to prevent damage to the pipe that was installed during the first drive from jacking thrust of the second drive.

Properly dispose of all excavated materials away from the construction site on a daily basis. Space for stockpiling is limited and may not be available at the jacking pit site. Excess slurry shall be pumped from separation plant tanks into tanker trucks and disposed of at acceptable facilities in accordance to current state regulations for disposal of these materials. Only use the disposal sites identified in the submittals for muck and slurry disposal.

After the each pipe jacking drive is complete, fill the annular space outside the pipe with Portland cement grout in accordance to subsection H of this article, Contact Grouting.

**G.10.5 Lubrication**

Apply lubrication to the external surface of the pipe to reduce skin friction and the annular space created by the overcut shall be filled with a lubricant suitable for the particular soil conditions to be tunneled.

Provide a lubrication system to inject an approved lubricant at the rear of the tunneling shield and as required along the pipe length to lower the friction developed on the sides of the pipe during jacking. The lubrication system shall be such that it can automatically be controlled from the operator's cabin and controlled volumes of lubricant can be injected by the MTBM operator at selected locations along the tunnel. Such volumes of lubricant pumped, including the location of injection, shall also be automatically recorded.

Monitor at all times both the volumes, pressures, and location of grout/lubrication injection points to ensure that the annulus around the pipe is completely filled with approved lubricant

**G.10.6 Control of Line and Grade**
The required tolerances are given in subsection G.3 of this article.

Should the tunnel alignment be outside the above tolerance requirements, then the MTBM shall be returned to the plane line and/or grade at a rate of not more than 1 inch per 25 feet of tunnel.

Steering corrections made to the tunnel alignment shall be carried out in such a manner that the joint angle of any two adjacent pipes or segments does not exceed allowable limits of the pipe, based on manufacturer's limits.

The laser guidance system shall be mounted in a manner that isolates it from effects of movement by the jacking forces and protects it as much as possible from accidental impacts.

Check the laser primary control for the tunneling system against an above ground undisturbed reference at least every 3 days, 3 locations per tunnel drive, or not greater than 100 feet intervals of tunnel constructed, whichever is more frequent.

Check the laser alignment for tunnel control each shift against local survey marks.

After installation of the jacked pipe, provide the engineer with access to the pipe for visual inspection of the line and grade, and condition of joints of the completed pipe.

**G.10.7 Structure Protection**
Settlement limits resulting from tunneling and workshaft construction operations are specified in subsection I of this article, Structure Protection and Ground Movement Limits.

**G.10.8 Detection of Movement**
Install geotechnical instrumentation in accordance to the article Geotechnical Instrumentation, and the plans. The engineer will monitor these instruments and other existing instruments and monitoring points. The engineer will provide the contractor with copies of measurement data and his interpretations of the data in a timely manner. The engineer's monitoring and evaluation actions are meant to supplement the contractor's monitoring system and do not relieve the contractor of his responsibility, nor place on the engineer responsibility for control of ground movement and protection of the work and adjacent structures.

The contractor is responsible for obtaining movement measurements obtained by the engineer and for performing any additional monitoring of ground and facility movements that is necessary for making timely changes in construction methods to control ground movements and prevent damage to the work and adjacent structures. The contractor shall provide to the engineer, within a timely manner, copies of all instrumentation measurements that the contractor has made.

**G.10.9 Emergency Measures**
Whenever there is a condition that is likely to endanger the stability of the excavation, overlying pavement or adjacent structures, operate with a full crew for 24 hours a day, 7 days a week, including weekends and holidays without intermission, until those conditions no longer jeopardize the stability of the work and overlying and adjacent facilities.

Provide an emergency electric power supply independent of the primary electric supply. The emergency power system shall be capable of powering the excavation lighting, ventilation and water control systems and, if used, the low pressure compressed air system. The emergency electrical power system for tunnels in Hazardous Locations shall comply with Class 1, Division 2 requirements of OSHA, as previously specified.

**G.10.10 Control of Water**
Conform to subsection D of this article, Control of Water.

**G.10.11 Air Quality**
Perform all workshaft and tunnel excavation operations by methods and with equipment that will reduce or eliminate any dust, fumes, vapors, gases, fibers, fogs, mists or other atmospheric impurities. Conform to regulations promulgated by OSHA and other regulatory authorities regarding air quality and ventilation in excavations. Provide appropriate instruments for testing the quality of the tunnel atmosphere and take samples under working conditions, all in accordance to OSHA, Wisconsin Administrative Code, or other jurisdictional requirements.

Air testing shall be required for the specific conditions to ensure that the following gas concentration requirements are met:

| | |
|---|---|
| Carbon Monoxide: | <0.005% |
| Methane: | <0.25% (5% of explosive limit) |
| Hydrogen Sulfide: | <0.001% |
| Oxygen: | >19.5% and <23.5% |

**G.10.12 Tunnel Ventilation**
As a minimum, when the excavations are occupied by workmen, the main ventilation system should deliver fresh air to the face at a volumetric flow rate equal to 60 feet per minute times the full area of the excavated face. A higher volumetric flow rate should be provided if necessary to conform to OSHA requirements. Operate the tunnel main ventilation system 24 hours per day, 7 days per week, continuously, until hole-through. During extended

periods of inactivity when excavations are unoccupied, such as over weekends or holidays, the volumetric flow rate may be reduced to the OSHA minimums.

**G.10.13 Illumination**

Light in all areas where work is in progress shall be adequate to permit proper observation of operations by the contractor and engineer at all times. Lighting intensity shall be as required by applicable regulations for tunnel and workshaft construction operations. Lighting intensity shall be increased as required by the engineer for concrete placement and inspection and for final cleanup.

Open flame lights shall not be used. Flashlights shall be explosion-proof. Both power and lighting circuits shall be separated and thoroughly insulated. The voltage shall not exceed 115 volts. All lights shall be placed in porcelain light fixtures in vapor tight enclosures and metal guards. Lighting installation shall conform to National Electric Code NFPA 70.

Maintain underground illumination in place throughout the life of the contract including the substantial completion inspection or until permission to remove illumination is received in writing from the engineer.

**G.10.14 Safety**

Perform all activities in accordance to the Occupational Safety and Health Act of 1970 (PL 596), as amended, applicable regulations of the Federal Government, OSHA 29CFR 1926 and applicable criteria of ANSI A10.16 81, “Safety Requirements for Construction of Tunnel Shafts and Caissons”.

**G.10.15 Subsurface Exploration**

Notify the engineer in advance of plans to perform subsurface explorations for any purpose related to the work, including but not limited to excavating test pits, drilling test borings or probe holes, and performing pump tests. Provide the engineer the opportunity to review and comment on the exploration program, and to observe the investigation.

Provide copies of subsurface exploration records to the engineer on request.

**H Contact Grouting**

**H.1 Description**

This article covers the work necessary for contact grouting including utilization of existing grout holes; furnishing, mixing and placing grout; furnishing all labor, materials, equipment, and incidentals; and all other related work necessary for grouting, complete.

The amount of grouting to be performed will depend upon the nature of the soil encountered as the work proceeds, and on the method of construction. Grouting shall be performed at such locations, at such times, and in such quantities as determined and or approved by the or as necessary to conform to the requirements of this article.

**H.2 Quality Assurance**

Furnish one set of calibrated pressure gauges to be used as a master to check pressure gauges in the field. Provide proper certifications attesting the same to the engineer. Provide proper fittings for connection of calibrated pressure gauges parallel to field gauges, for periodic checking of field gauges. Furnish suitable devices for determining the accuracy of all volumetric and flow rate measuring devices, as required.

**H.3 Products**

**H.3.1 Constituents of Portland Cement Grout**

Portland cement, water and fly ash shall conform to the requirements of standard spec 501.2. Use Type I Portland cement. Do not use Bentonite or other clay-like materials as an admixture.

**H.3.2 Sand**

Sand shall conform to the requirements for concrete aggregates specified in standard spec 501.2.5, except that it shall have a finess modulus between 1.5 and 2.0 and be graded as specified in the following table.

| Sieve Size | Percent Passing Minimum |
|---|---|
| No. 8 | 100 |
| No. 16 | 95 – 100 |
| No. 30 | 60 – 85 |
| No. 50 | 20 – 50 |
| No. 100 | 10 – 30 |
| No. 200 | 0 – 5 |

**H.3.3 Fluidifier**

Fluidifier shall be a compound with characteristics that will hold the solid constituents of the grout in colloidal suspension, be compatible with the cement and water used in the grout mix, and contain a shrinkage compensator. Fluidifier shall not contaminate the groundwater.

Fluidifier shall be furnished in moisture resistant paper sacks shipped in sealed containers and shall be handled and stored so as to avoid absorption of moisture, damage or waste. Material which has become caked due to moisture absorption will be rejected.

**H.3.4 Contact Grout**

Contact grout shall consist of a mixture of water, sand and Portland cement, with mineral fillers or admixtures as necessary to achieve a non-shrink, non-bleed, flowable grout. The grout shall have a minimum 24-hour compressive strength of 75 and a minimum 28-day compressive strength of 250 psi.

**H.3.5 Grout Holes**

Holes for injecting grout or to allow air release or drainage during grouting shall be pre-installed in the casing pipe. Drilling additional grout holes in addition to those pre-installed will be allowed only upon approval by the engineer.

Grout pipes shall be fixed in the holes in the lining, to prevent grout return around the perimeter of the pipe. Grout pipes and fittings shall be thoroughly cleaned before embedment. Grout pipes shall be set so that grout can flow freely to voids behind the lining.

Suitable stop valves shall be provided at the collar of the grout hole for use in maintaining pressure as required until the grout has set

**H.3.6 Contact Grouting Equipment**

Mixers shall be colloidal type capable of providing a homogenized mix and shall be capable of an impeller speed of not less than 1500 RPM. The grout mixer shall pump the grout into a mechanically agitated holding tank. Mixer and mechanical agitator tanks shall be of sufficient capacity to ensure an uninterrupted supply of grout to the grout pump. Provide means of accurately measuring the separate grout ingredients at the mixer. Provide means for increasing or decreasing the water-cement ratio, as required by the ground conditions encountered.

Pumping equipment shall deliver grout from the holding tank to the point of injection at a steady pressure without pulsation. Grout pumps shall be capable of delivering grout to the point of injection at a pressure equal to 3.0 psi for every foot of overburden. Pumping equipment shall be capable of handling water-cement ratios varying between 25 to 1 and 0.6 to 1 by weight.

Provide means for accurately determining the amount of grout injected. The flow meter shall be accurate within 10 percent at a flow rate of 2.5 gpm.

The grout plant shall be equipped with reliable pressure gauges at the point of injection and at the pump. The pressure gauges shall have a range such that the maximum pressure specified shall be approximately two thirds of the capacity of the gauge. The gauges shall be protected from grout contamination by an oil or air buffer, and shall be easily cleaned in the field.

Flexible hose for pressure grouting shall have an inside diameter not less than 1 inch and shall be capable of withstanding the maximum water and grout pressures to be used. Grout pipes shall have an inside diameter of 1-1/2 inches or larger. A diaphragm valve shall be provided on each grout hose and a straightway valve at each grout pipe to regulate flow. Packers for grouting shall be pneumatic, hydraulic, or mechanical expandable rubber packers.

At the point of injection, suitable valves and pressure gauge shall be provided so that the pressure may be monitored and the grout flow regulated by increasing or decreasing the flow in the grout return line. Suitable stop valves shall be provided at the collar of the hole for use in maintaining pressure as required until the grout has set.

Grouting equipment shall be of such configuration that flushing can be accomplished with the grout injection valve closed, with the water supply valve open, and with the grout pump running at full speed.

All metal pipe, standard plugs and fittings required for grouting operations shall be minimum Schedule 40 pipe conforming to ASTM Designation A53.

**H.4 Execution**
**H.4.1 General**
Notify the engineer at least 24 hours in advance of the start of grouting operations.

If out of visible contact, continuous telephonic communication shall be maintained between the grout plant and the injection point.

Continuously agitate grout in the mixer and holding tanks. Remove Portland cement grout from the mixer, holding tank and supply line that is not injected into the hole within 2 hours after mixing and waste it.

Maintain grout at temperatures above 50 degrees F until injected. The temperatures of mixing water shall range from 50 degrees F to 100 degrees F when added to the grout mixer. Store grout materials at temperatures above freezing. Grouted ground shall be no colder than 40 degrees F when grout is injected and for a period of 5 days thereafter.

Protect grout holes from becoming clogged or obstructed prior to grouting by means of a cap or other suitable device on the collar of the hole. Clean out in a satisfactory manner or replace any hole that becomes blocked or otherwise unsuitable for its intended purpose at the expense of the contractor.

Flag and protect all grout hole locations. Clearly label grout locations for easy identification.

**H.4.2 Contact Grout Injection**
**H.4.2.1 General**
Perform contact grouting to reduce groundwater inflow, to fill voids, to minimize ground movement into the excavation, and to provide firm and uniform contact between the support system and the ground.

Equipment and lines shall be kept clean by constant circulation of grout and periodic flushing with water. Leakage from connections shall not be permitted. Plugs on ends of nearby grout holes or pipes shall be removed to permit escape of air and water and the filling of spaces with grout.

Once started, grouting of a hole shall not be interrupted. Grouting of a hole shall not be considered complete until that hole refuses to take grout as defined under article Refusal. After grouting of a hole or any stage of a hole has reached refusal, the pressure on the hole shall be maintained by means of a stopcock or other suitable device until the grout has set.

Grout progressively from pipe to pipe in the sequence submitted by the contractor or approved by the engineer. If necessary to relieve premature stoppage, periodic applications of water under pressure shall be considered. Grout that cannot be placed prior to initial set shall be discarded. Check operating gauges daily to determine that they are in working order. Do not grout without appropriate gauges in place and in working order.

Inject grout in continuous progression of the grout holes along the length of the tunnel or perimeter of the shaft. Where grout holes extend around the tunnel periphery, connections to higher grout holes shall not be made until the grout has completely filled the void space below as indicated by escape of grout of normal consistency from the higher holes. Exercise particular care to completely fill the voids on each side of any obstruction which interferes with the passage of grout. Vent holes for the release of air and water during grouting of crown or invert cavities shall be provided as necessary.

Where grouting in soil, the grouting pressure at the injection point shall not exceed 0.6 psi per foot of depth of soil overburden, unless otherwise proposed by the contractor, with the engineer's concurrence. In all cases, the grouting pressures shall be limited as necessary to avoid damage to the final lining.

The grouting of any hole shall not be considered complete until all voids have been filled to the maximum extent practicable. After the grouting of any hole is finished, the pressure shall be maintained by means of the stop valve until the grout has set to the extent that it will be retained in the hole.

**H.4.2.2 Contact Grouting for Workshafts**

Perform contact grouting outside of initial support system where overcutting results in a 1-inch or wider void space between the ground and the excavation support system.

Locate grout holes as necessary to accomplish the work and to thoroughly fill the voids outside of the initial support system. Drill grout holes for contact grouting of initial supports through the initial supports and into the annular space between the initial support and surrounding ground.

Perform contact grouting at least once per day after the excavation support system has been advanced on that day.

Perform contact grouting to reduce groundwater inflow, to fill voids, to minimize ground movement into the excavation, and to provide firm and uniform contact between the support system and the ground. The contractor’s ground support design engineer shall determine a refusal criteria and the maximum grout pressure that is consistent with the design of the ground support system. The engineer may periodically request that check holes be drilled to determine if unacceptable voids exist outside of the ground support system. Additional contact grouting shall be completed at no additional cost to the department where checking indicates the presence of unacceptable voids.

### H.4.2.3 Contact Grouting after Pipe Jacking

For pipe jacking, commence contact grouting promptly (within 24 hours) following completion of each pipe jacking drive. Once started for a tunnel drive, perform continuous contact grouting until contact grouting for the entire drive has been completed.

Grout holes for contact grouting of jacked pipe shall be pre-installed pipe nipples. New grout holes shall not be drilled through pipe walls unless specifically approved by the engineer.

Inject grout in continuous progression of the grout holes along the length of the tunnel. At any time during the grouting operations, sufficient contact grout holes ahead of the hole to be grouted shall be opened, plugs removed, holes cleaned and valves attached for controlled discharge (venting) of lubrication slurry, disturbed soil and groundwater within the overcut annulus. Keep grout port valves in a fully open position within a maximum safe grout communication distance, as determined by the contractor and accepted by the engineer in the grouting submittal. This distance may vary along the tunnel with variations in adjacent soil and groundwater conditions. Close or regulate discharge at ports opened for venting, as necessary to prevent lost ground from squeezing, a blow-in or excessive groundwater seepage. Continue venting from each opened port until grout of normal consistency (not mixed with slurry, soil or water) is discharged from the vent holes. After an acceptable grout discharge is observed at a port, close the valve until a hook-up is made at the port for injection of grout.

Attempt to hook-up and pump grout at every port unless approval is granted by the engineer to skip selected holes. In general, contact grouting at a port will be considered completed when less than one cubic foot of grout of the accepted mix and consistency can be pumped in 5 minutes under the specified maximum pressure. After the grouting is finished, the valve shall be closed until grout has set. After a valve is closed following injection, the grout header and hoses shall be moved to the next port in progression.

Volume of contact grout injected shall be measured, recorded and compared with the anticipated volume per foot of pipe grouted with compensation for grout wasted in lines and vented through ports.

At the completion of grouting, remove valves after grout has set and replace valves with screw type grout plugs.

### H.4.3 Cleanup

Minimize spilling and prevent the setting of any grout that may escape upon finished pipe or structure surfaces. Remove any spilled grout and restore the pipe or structure surface to its original condition. Properly dispose or all waste materials. Remove all grouting equipment and accessories from the tunnel.

## I Protection of Property and Ground Movement Limits

### I.1 General

Use whatever means and methods are necessary to limit ground movements, settlements, and damage of utilities, structures and other facilities. These means and methods include,

but are not limited to excavation support systems, tunneling methods, underpinning of vulnerable facilities, grouting and other forms of ground improvement.

**I.2 Ground Movement Limits**
The ground movement limits for all instruments are established as follows:

| Facility | Action Limit | Displacement Limit |
|---|---|---|
| Bridge structures, abutments and foundations | 0.3 inch | 0.5 inch |
| I-94 roadway and ramp pavements | 0.7 inch | 1.0 inch |
| Retaining walls | 0.7 inch | 1.0 inch |
| Water mains and hydrants | 0.7 inch | 1.0 inch |
| Street and general roadway pavement | 1.0 inch | 1.3 inches |
| Storm and sanitary sewers | 0.7 inch | 1.0 inches |
| General utilities and facilities | 1.0 inch | 1.3 inches |

**I.3 Movement/Settlement Monitoring**
Develop and implement a settlement control plan to protect existing facilities, utilities, structures, roads, streets, and other improvements from damage due to settlement resulting from tunnel construction. The plan shall include the specific tunneling methods that will be used to minimize loss of ground, procedures for monitoring for loss of ground as specified herein, and ground improvement plans.

If necessary, obtain the permission of engineer, in advance, to work outside of the work hours established for the project. The contractor shall be responsible for making any necessary changes in construction methods to control loss of ground and minimize settlement to prevent damage to adjacent facilities, existing utilities, and adjacent structures.

**I.4 Actions to Mitigate Excess Ground Movements**
If displacement limit of a settlement marker reaches an action limit, the likely cause of the displacement shall be promptly discussed with the engineer. The engineer may increase the monitoring frequency for all settlement markers within 100 feet of the location where the displacement action limit was exceeded. Review excavation and ground support operations and make operational changes or implement ground improvement or underpinning measures as appropriate to limit further displacements and to prevent displacement limits from being exceeded. Actions to be taken in response to action limits being exceeded shall be reported to the engineer before being taken, except in emergency situations.

If displacement of a settlement marker reaches a displacement limit, cease excavation or other construction operations that result in further displacement until additional operational changes are made to reduce ground loss around excavation. The likely cause of the displacement shall be immediately discussed with the engineer. The engineer may further increase the monitoring frequency for all settlement markers within 100 feet of the location where the displacement limit was exceeded and may add additional settlement markers.

Review excavation and ground support operations and make operational changes or implement ground improvement or underpinning measures as appropriate to limit further displacements and to prevent displacement limits from being exceeded. Actions to be taken in response to displacement limits being exceeded shall be discussed with and approved by the engineer before being taken, except in emergency situations.

The cost of actions required for complying with displacement limits and to repair any damage to adjacent facilities shall be borne by the contractor with no additional cost to the department.

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

The department is obtaining a U.S. Army Corps of Engineers Section 404 permit. Comply with the requirements of the permit in addition to requirements of the special provisions. A copy of the permit application is available from the regional office by contacting Laci Kazan at (414) 322-1429.
~~stp-107-054 (20080901)~~

## 20. 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.
sef-999-040 (20160915)

## 21. Traffic Meetings and Traffic Control Scheduling.

Every Thursday by 9:00 AM, submit a detailed proposed 2-week look-ahead traffic closure schedule to the engineer. Type the detailed proposed 2-week look-ahead closure schedule into an excel spreadsheet provided by the engineer. Enter information such as closure dates, duration, work causing the closure and detours to be used. Also enter information such as ongoing long-term closures, emergency contacts and general 2-month look-ahead closure information into the excel spreadsheet.

Meet with the engineer at 10:00 AM on Thursdays at the project field office to discuss and answer questions on the proposed schedule. Edit, delete and add closures to the detailed proposed 2-week look-ahead schedule, as directed by the engineer, so that proposed closures meet specification requirements. Other edits, deletions or additions unrelated to meeting specification requirements may also be agreed upon with the engineer during the 10:00 AM meeting.

Every Thursday at 2:00 PM, or as scheduled by the engineer, attend a weekly traffic meeting. The meeting will bring local agencies, project stakeholders, owner managers, owner engineers, contractors, document control and construction engineering personnel together to discuss traffic staging, closures and general impacts. Upon obtaining feedback from the

meeting attendees, edit, delete and add information to the detailed 2-week look-ahead closure schedule, as needed. Submit the revised 2-week look-ahead to the engineer.

Obtain approval from the engineer for any mid-week changes to the closure schedule. Revise the 2-week look-ahead as required and obtain engineer approval.
sef-643-040 (20150319)

## 22. Material and Equipment Staging.

Submit a map showing all proposed material stockpile or equipment storage locations to the engineer 14 days before either preconstruction or proposed use, whichever comes first. Identify the specific purposes for the location. Obtain written permits from the property owner, and submit two copies to the engineer before use. Do not stockpile or store materials or equipment on wetlands.
sef-999-020 (20170310)

Material and staging areas off the project limits shall be included in the ECIP for review.

## 23. CIM Model.

**Abbreviations**
The department defines terms within this special provision as follows:

| | |
|---|---|
| **CIM** | Civil Integrated Management |
| **CAD** | Computer-aided Design |
| **GIS** | Geographic Information Systems |
| **LOA** | Level of Accuracy |
| **LOD** | Level of Development (2D/3D) |
| **PS&E** | Plans, Specifications, and Estimates |
| **AMG** | Automated Machine Guidance |
| **CSV** | Comma Separated Value File Format for Microsoft Excel Spreadsheet for Survey Layout |
| **DWG** | Autodesk Proprietary File Format for CAD Data |
| **DGN** | Bentley Proprietary File Format for CAD Data |
| **XML** | Non-Proprietary File Format for Exchanging Geometry-centric 3D Data |
| **GNSS** | Global Navigation Satellite System is used to pinpoint geographic locations worldwide with user's receivers |
| **ROW** | Right-of-Way |
| **DTM** | Digital Terrain Model |
| **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/CIM 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 CIM model project deliverables consisting of proposed comprehensive 2D/3D model data and existing model data or portions of data which may include temporary and final states for the following when available:

- Roadways
- Topography
- Grading
- Drainage
- Structures
- Utilities, including abandoned utilities
- FTMS-Freeway Traffic Management System
- Signals
- Signs
- Lighting
- Pavement markings
- Landscaping
- Wetlands and waterways
- Railways
- Geotechnical soil boring locations
- Parcels
- Fencing
- Survey monumentation

**Deliverables and Format**

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

- Features
- Points
- Reference lines
- Breaklines
- 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). CIM models may include temporary conditions for the model and/or composite model of all stages and a stage by stage model of all the separate stages of construction as indicated in the plans, specifications, and estimates.

The department will provide, for information only, an updated composite 2D file consisting of existing, proposed, and abandoned utilities when available. The files are generated from a variety of sources and formats including:

- Plans, with or without line and grade
- Surveys
- As-builts
- Digger's Hotline
- Utility Providers

All data included in project deliverables for Civil Information Model (CIM) and CAD data will be provided in electronic digital Microstation V8i SS3/Inroads V8i SS2 for 2D/3D DGNs and Autodesk Civil 3D/Autocad 2016 or in the latest software version for 2D/3D DWGs and LandXML 1.2 file formats. CIM model data will contain:

- Features
- Points
- Lines
- Reference lines
- Break lines
- Area extents lines
- Profiles
- 3D TIN DTM surfaces
- LandXML 1.2 surfaces

All data will be georeferenced to horizontal datum - NAD-83 (GRS-1980) (97), vertical datum - NAVD-1988 (91), 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:

Lance Parve, Sr Project Engineer/BIM-CIM Coordinator Wisconsin DOT
SE Freeways/Region Design-Construction
lance.parve@dot.wi.gov
(262) 548-8702

Brad Hollister, Methods Development Unit Lead Worker Wisconsin DOT
Bureau of Project Development, WisDOT,
brad.hollister@dot.wi.gov
(920) 492-2380

**Delivery Schedule**

The department will provide the CIM model data to the contractor according to the following schedule dates:

- Existing Surface/Conditions elements (Surface-existing, Wetlands-located/surveyed, and right-of-way existing) at the project PS&E Date;
- AMG Roadway elements (Roadways/Surfaces-Proposed) and Roadway features at the project PS&E Date;
- Remaining LOD-CD elements at the project Let Date.

| CIM MODEL REQUIREMENTS | | | | | |
|---|---|---|---|---|---|
| **Element / E-Existing; P-Proposed** | **Format** | **Data Type** | **LOA** | **LOD** | **Temp** |
| **RE-Real Estate, ROW and Buildings** | | | | | |
| ROW-E | DWG/DGN | Line | 0.02'+/- | 2D | N/A |
| ROW-P | DWG/DGN | Line | 0.02'+/- | 2D | N/A |
| Easements-E | DWG/DGN | Line | 0.02'+/- | 2D | N/A |
| Easements-P | DWG/DGN | Line | 0.02'+/- | 2D | N/A |
| Parcels and Excess Parcels-E/P | DWG/DGN | Polygon | 0.02'+/- | 2D | N/A |
| Buildings-E/P | DWG/DGN | Polygon | 0.02'+/- | 2D | N/A |
| Fences-E/P | DWG/DGN | Line | 0.02'+/- | 2D | N/A |
| **EN-Environmental Areas** | | | | | |
| Erosion Control-P | DWG/DGN | Line | 0.10'+/- | 2D | N/A |
| Wetlands Surveyed-E | DWG/DGN | Ploygon | 0.10'+/- | 2D | N/A |
| **EW-Earthworks/Non-roadway Surfaces** | | | | | |
| Surfaces-E | DWG/DGN/XML | DTM/DSM | varies[1] | 3D | N/A |
| Grading/Non-Road Surfaces-P | DWG/DGN/XML | DTM/DSM | 0.06'+/- | 3D | N/A |
| Longitudinal Breaklines/Points-E | DWG/DGN/XML | Line/Point | varies[1] | 3D | N/A |
| Longitudinal Breaklines/Points-P | DWG/DGN/XML | Line/Point | 0.06'+/- | 3D | N/A |
| Slope Intercepts-P | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| Surface Limits-E | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| Surface Limits-P | DWG/DGN | Line | 0.06'+/- | 2D | N/A |

| | | | | | |
|---|---|---|---|---|---|
| **RD-Roadways/Surfaces-Proposed** | | | | | |
| Road Pavement-Top Surfaces-P | DWG/DGN/XML | DTM/DSM | 0.02'+/- | 3D | 3D |
| Road Pavement-Base Course Surfs-P | DWG/DGN/XML | DTM/DSM | 0.06'+/- | 3D | 3D |
| Road Pavement-Subgrade Surfs-P | DWG/DGN/XML | DTM/DSM | 0.06'+/- | 3D | 3D |
| Road Curb and Gutter-P | DWG/DGN/XML | Line | 0.02'+/- | 2D | N/A |
| Road Barriers-P | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| Road Pavement Marking-P | DWG/DGN | Line | 0.10'+/- | 2D | N/A |
| Road Stationing-P | DWG/DGN | Text | 0.02'+/- | 2D | N/A |
| Road Alignments/Ref Lines/EOP-P | DWG/DGN/XML | Line | 0.02'+/- | 2D | 2D |
| **ST-Storm Sewer/Drainage – Proposed** | | | | | |
| Inlets/MHs/OFs/Pipes/Culvs/Ponds-E | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| Inlets/MHs/OFs/Pipes/Culvs/Ponds-P | DWG/DGN | Line | 0.06'+/- | 2D | 2D |
| **BR-Bridges-Proposed** | | | | | |
| Piles | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| Footings | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| Abutments | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| Piers | DWG/DGN/XML | Line | 0.02'+/- | 2D | N/A |
| CI Beams | DWG/DGN/XML | Line | 0.02'+/- | 2D | N/A |
| Seats | DWG/DGN/XML | Line | 0.02'+/- | 2D | N/A |
| Deck Including Fillets | DWG/DGN/XML | Line | 0.02'+/- | 2D | N/A |
| Light Blisters | DWG/DGN/XML | Line | 0.02'+/- | 2D | N/A |
| Parapet Walls | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| **RW-Retaining Walls-Proposed**<br>**MSE-Proposed** | | | | | |
| Footings | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| Top | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| Coping | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| **Southbound-Sign Bridges-Proposed** | | | | | |
| Footings | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| Piles | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| Structure | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |

| | | | | | |
|---|---|---|---|---|---|
| **Structures-Existing** | | | | | |
| BR-Bridges | DWG/DGN/XML | Line | 0.06'+/- | 2D | N/A |
| **LI-Lighting-Proposed** | | | | | |
| Poles/Masts/Bases | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| Conduit/Cabinets/Pull Boxes | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| **IT-ITS/FTMS Proposed** | | | | | |
| DMS/CMS | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| FTMS Fiber Optic lines | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| FTMS Huts/Cabinets | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| **SN-Signs-Proposed** | | | | | |
| Signs-Type 1 | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| Signs-Type 2 | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| **SG-Signals-Proposed** | | | | | |
| Poles/Heads/Bases | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| Conduit/Pull Boxes | DWG/DGN | Line | 0.06'+/- | 2D | N/A |
| **WU- Wet Utilities and WisDOT-maintained Utilities - Existing/Relocated/Abandoned** *[1]* | | | | | |
| ST-Storm Sewer/Drainage | DWG/DGN | Line | 0.10'+/-*[2]* | 2D | N/A |
| WM-Water Main | DWG/DGN | Line | 0.10'+/-*[2]* | 2D | N/A |
| SS-Sanitary Sewer | DWG/DGN | Line | 0.10'+/-*[2]* | 2D | N/A |
| LI-Lighting | DWG/DGN | Line | 1.5'+/- *[2]* | 2D | N/A |
| IT-ITS/FTMS | DWG/DGN | Line | 1.5'+/- *[2]* | 2D | N/A |
| TR-Traffic Control | DWG/DGN | Line | 1.5'+/- *[2]* | 2D | N/A |
| **DU-Dry Utilities and Other Utilities- Existing/Relocated/Abandoned** *[1]* | | | | | |
| GS-Gas | DWG/DGN | Line | 1.5'+/- *[2]* | 2D | N/A |
| EL-Electrical | DWG/DGN | Line | 1.5'+/- *[2]* | 2D | N/A |
| CO-Communications | DWG/DGN | Line | 1.5'+/- *[2]* | 2D | N/A |
| FO-Fiber Optic | DWG/DGN | Line | 1.5'+/- *[2]* | 2D | N/A |
| TE-Telephone/Data | DWG/DGN | Line | 1.5'+/- *[2]* | 2D | N/A |
| CA-CATV/Data | DWG/DGN | Line | 1.5'+/- *[2]* | 2D | N/A |

*[1]* Data accuracies vary for existing surfaces depending upon survey data collection method(s) including: total station, GNSS-GPS (ranging in field from 0.02'+/- to 0.15'+/-); and aerial photogrammetry (ranging from 0.10'+/- to 0.40'+/-).

Overall existing and proposed surface model accuracies may vary depending upon the method of data collection, the density of the model, corridor section frequencies, software applications, and other factors.

*[2]* 2D existing/proposed/abandoned utilities are approximate and other utilities may not be shown. 2D existing/proposed/abandoned utilities are generated from a variety of sources and formats including:

- Plans with line and grade.
- Plans without line and grade.
- Surveys.
- Digger's Hotline.
- As-builts.
- Municipality records.

Existing utilities data are provided in the model, for purposes of information only, requiring confirmation from Digger's Hotline and Utility Providers.
~~sef-650-000 (20171004)~~

## 24. Available Documents.

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

a) Design Study Report
b) Exceptions to Standards Report
c) Pavement Type Selection Report
d) Environmental Document
e) As-Built Drawings
f) Preconstruction survey
g) Traffic Management Plan

These documents are available from Frank Pritzlaff at 141 NW Barstow Street, Waukesha, WI 53187, (262) 548-5683.

Reproduction costs will be applied to all copies requested.
sef-102-005 (20170310)

## 25. 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 Frank Pritzlaff, 141 NW Barstow Street, Waukesha, WI 53187, (262) 548-5683.

Review the available information to determine if it is of use. The use or not of the geotechnical information does not relieve performing the work conforming to the plans and specifications.
~~sef-102-010 (20170310)~~

## 26. Contract Award and Execution - Awarding the Contract.

*Replace standard spec 103.2(3) with the following:*
If the department does not make an award within 60 calendar days after opening the proposals, the lowest responsible bidder, after those 60 days, may request, in writing, that the department make the award. Stipulate a deadline of 10 business days or more, after the date of the request, for the department to make the award. If the department does not make the award within the stipulated time, the bidder is relieved of its obligation to execute a contract and contract bond.

## 27. Contract Award and Execution.

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

**103.9 Bid Escrow Documentation**

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

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

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

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

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

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

(7) The low bidder shall present authentic copies of their BED at the department's office, located at the project field office 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 within 4 hours after the time the BED is submitted. If the BED does not meet the requirements of this special provision, the department may reject the bid.

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

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

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

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

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

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

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

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

**BID ESCROW DOCUMENTATION CERTIFICATION**

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

BIDDER

_____
(Name of Bidder)

By: _____
(Signature*)

Title_____

Date _____

WITNESS

_____
(Name of Witness)

By: _____
(Signature*)

Date: _____

WISCONSIN DOT

_____
(Name of Department Representative)

By: _____
(Signature*)

Title_____

Date _____

WISCONSIN DOT

_____
(Name of Department Representative)

By: _____
(Signature*)

Title: _____

Date: _____

(END OF BID ESCROW DOCUMENTS)

## 103.10 Mobilization Workshops

### 103.10.1 Workshop Schedule

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

1. Project Kickoff and Initial Work Plan
2. Cost Reduction Incentives
3. Utility Coordination
4. Submittals
5. CPM Scheduling
6. Leadership Partnering (Initial Session)
7. (Vacant)
8. Storm Sewer Tunneling
9. Work Force Opportunities
10. Incident Crisis Communications Plan
11. Notice to Proceed

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

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

**103.10.2 Workshops**

**103.10.2.1 Project Kickoff and Initial Work Plan**

**103.10.2.1.1 General**

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

1. Service life
2. Economy of operation
3. Ease of maintenance
4. Benefits to the traveling public
5. Desired appearance
6. Design and safety standards

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

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

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

**103.10.2.3 Utility Coordination**

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

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

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

**103.10.2.4 Submittals**

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

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

**103.10.2.5 CPM Schedule**
*See specification Baseline CPM Progress Schedule.*

**103.10.2.6 Leadership Partnering Meetings Bi-Weekly**
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 personal 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

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

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

All mobilization workshop costs are incidental to the contract work.
sef-108-030 (20171004)

**103.10.2.7 (Vacant)**

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

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

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

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

sef-108-036 (20180104)

**103.10.2.10 Incident Crisis Communications Plan**

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

**103.10.2.11 Notice to Proceed**

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

sef-103-005 (20180104)

## 28. Contractor Notification.

*Replace standard spec 104.2.2.2(2) with the following:*

If the contractor discovers the differing condition, provide a written notice, as specified in 104.3.3, of the specific differing condition before further disturbing the site and before further performing the affected work.

**104.3.2 (Vacant)**

**104.3.3 Contractor Initial Written Notice**

*Replace standard spec 104.3.2 and 104.3.3 with the following:*

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:

a) A written description of the nature of the issue.
b) The time and date of discovering the problem or issue.
c) If appropriate, the location of the issue.

Provide the additional information specified in standard spec 104.3.5 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.
sef-104-005 (20141211)

## 29. 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 Portable Document Format (PDF) to the engineer-designated folder within the department's SharePoint site, and send alerts with a link to the document via email to (an) account(s) the engineer determines. If possible, translate original documents from their native format (e.g. Word, Excel, AutoCAD, etc.) using a Portable Document Format translation routine. 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)

## 30. Claims Process for Unresolved Changes.

*Replace standard spec 105.13.5, 105.13.6, and 105.13.7 with the following:*

**105.13.5 Review by the Department**

(1) The department will conduct an initial review phase and a decision phase to resolve the claim. At any point in these two phases, the department may waive its review and request a Dispute Resolution Board (DRB). In the initial review phase, the contractor and the department will have up to 28 calendar days, from the contractor's submission of the claim, for the contractor to submit all additional information required and for the department to review the claim and conduct all meetings. The department may request, in writing, that the contractor submit additional information related to the claim. Submit that additional information, or notify the department in writing to base its decision on the information previously submitted. Either party may request a meeting to present their views. Before the meeting, the department will distribute written ground rules for the meeting to both parties.

(2) Upon completion of the initial review phase, the department will notify the contractor in writing that it has begun the decision phase.

(3) In the decision phase, the department will have up to 28 calendar days to render a written decision. The department will consider both parties' written and oral submissions and may consider other relevant information in the project records. The department will provide the following in its decision:

- A concise description of the claim.
- A clear, contractual basis for its decision that includes a reference to standard spec 104.2 on revisions to the contract and as appropriate, specific reference to language regarding the bid items in question.
- Other facts the department relies on to support its decision.
- A concise statement of the circumstances surrounding the claim and reasons for its decision. If the department rejects the claim in whole or in part, the department will explain why the claimed work is not a change to the contract work.
- The amount of money or other relief, if any, the department will grant the contractor.

(4) In the appeal phase, the contractor will have up to 28 calendar days from the date of the department's decision to request a DRB hearing. There must be mutual agreement between the department and the contractor before initiating the DRB.

(5) Submit a written request to the department within those 28 days or the department's decision is final. If the department does not render a decision within the 28 calendar days, the department will forward the claim to the DRB as if the department had rejected the contractor's claim.

### 105.13.6 Dispute Resolution

#### 105.13.6.1 Definitions

| | |
|---|---|
| **Agreement** | Formal Dispute Resolution Board Third-Party Agreement |
| **Dispute** | An issue, claim, change order request, or other controversy that remains unresolved following good faith negotiations between authorized representatives of the department and contractor. |
| **Dispute Resolution Board (DRB)** | One or three neutral individuals mutually selected by the department and contractor to resolve disputes and render findings and recommendations based on the contract. |
| **Project Manager** | Department construction project manager assigned to administer, oversee, and manage the project. |
| **WTBA** | Wisconsin Transportation Builders Association |

#### 105.13.6.2 Dispute Resolution Board (DRB)

(1) The purpose of a DRB is to resolve claims in a manner that complies with the contract, is impartial, and expedites the standard claims process. The DRB will do so by issuing recommendations that may be binding or non-binding depending on the claim amount.

(2) It must be emphasized and firmly understood that individual DRB members are not the "representative of" or "advocate for" the party which selected them. The entire DRB will function as an objective, impartial, and independent body at all times. To avoid suggestion of partiality, there shall be no individual communication in regard to the project between DRB members and employees of the contractor or department during the life of the DRB. The parties shall direct all matters needing the attention of the DRB to the chair of the DRB. The project manager or their designee will engage the DRB process.

**105.13.6.3 Selection of Members and Agreement for Services**

(1) The department and the contractor will cooperatively establish the DRB promptly after contract execution.

**105.13.6.3.1 General**

(1) A three member DRB shall be established.

**105.13.6.3.2 Experience**

(1) All DRB members shall be experienced with the construction process including design, construction, contract administration, contract law, and resolution of construction disputes.

(2) It is not necessary that the DRB members be intimately familiar with the specific type of construction involved in the dispute. The DRB may consult technical and legal experts if the need arises under the terms of standard spec 105.13.6.4.7 Special Services described in this special provision.

(3) All DRB members shall have attended the one-day DRB panel member workshop offered by the Dispute Resolution Board Foundation, or its substantial equivalent in other training, or shall be a qualified DRB panel member in another state which has training as a prerequisite to qualification for service on DRB panels.

**105.13.6.3.3 Neutrality**

(1) It is imperative that the DRB members are neutral, impartial, and free of conflict of interest. Individuals who fall into the prohibitions within this specification will not be further considered as a candidate for this contract DRB.

(2) The term "member" also includes the member's current primary or full-time employer, and "involved" means having a contractual relationship with either the department or the contractor, such as a subcontractor, architect, engineer, or construction manager.

**Prohibitions; Disqualifying Relationships for Prospective Members**

An ownership interest in any entity involved in the construction contract, or a financial interest in the contract, except for payment for services on this DRB;

Previous employment by, or financial ties to, any party involved in the construction contract within 6 months before award of the contract, except for fee-based consulting services on other projects;

A close professional or personal relationship with any key member of any entity involved in the construction contract which, in the judgment of either the department or the contractor, could suggest partiality; or

Prior involvement in the project of a nature that could compromise the prospective member's ability to participate impartially in the DRB's activities.

**105.13.6.3.5 Prohibitions; Disqualifying Relationships for Members**

(1) Employment, including fee-based consulting services, by any entity involved in the construction contract.

(2) Discussion concerning, or the making of, an agreement with any entity involved in the contract regarding employment after the contract is completed.

**105.13.6.3.6 Disclosure Statement**

(1) As a part of the selection process, each prospective DRB member will be required to submit a complete disclosure statement for the approval of both the department and the contractor. Each statement shall include a resume of experience, together with a declaration describing all past, present, and anticipated or planned future relationships, including indirect relationships through the prospective member's primary or full-time employer, to this project and with the department or the contractor, or others involved in the contract, including subcontractors, suppliers, design professionals, and consultants. Disclosure of close professional or personal relationships with all key members of the department or the contractor or other parties involved in the construction contract shall be included.

**105.13.6.3.7 Statewide Standing Roster**

(1) The department and WTBA have established a statewide standing roster of prequalified DRB members.

**105.13.6.3.8 Selection Process**

(1) When establishing a 3-member DRB for a particular project or dispute, the department and the contractor will each select one DRB member. The two selected DRB members shall then jointly select a chair for the DRB. The disputing parties may mutually place restrictions on the chair selection. All restrictions agreed upon by the disputing parties will be communicated to the DRB members charged with selecting the chair.

(2) After being selected, DRB member(s) must submit an updated disclosure statement to the department and contractor for review and approval. DRB members do not need to be on the Statewide Standing DRB Roster to be selected. However, if a DRB member (chair or non-chair) is selected from outside the standing roster, the proposed DRB member must meet all the aforementioned criteria and disclosure requirements and both disputing parties must approve the selection.

(3) If a party disputes the qualification of a proposed DRB member (from the Statewide Standing DRB Roster or from outside the Roster), the disputing party shall identify what disqualifies the candidate. The department and the contractor shall then jointly determine whether the candidate will be accepted on the DRB. If the candidate is rejected, the party

responsible for the selection shall select another candidate and again seek approval from the other party(s).

### 105.13.6.3.9 Tenure of DRB

(1) Once a DRB is engaged on a project, the DRB will be deemed established for subsequent disputes that may require a DRB according to this specification.

(2) The DRB will be dissolved as of the date of final payment to the contractor unless earlier terminated or dissolved by mutual agreement of the department and contractor.

### 105.13.6.3.10 Three-Party Agreement

(1) After DRB member selections have been made, the DRB member(s) and authorized representatives of the department and the contractor shall execute the Formal Dispute Resolution Board Three-Party Agreement that sets forth the terms and conditions that apply to services provided by the DRB including procedures for standard operation of the DRB, use of the DRB in an advisory role, periodic site visits, and all other appropriate terms. The department, contractor, and all three DRB members will execute the DRB agreement within 14 calendar days after the selection of the chairperson.

### 105.13.6.4 Operation

(1) The DRB will operate according to the guidelines established. The DRB shall initiate, with the department's and contractor's concurrence, new procedures or modifications to existing procedures whenever this is deemed beneficial and appropriate.

(2) The department and the contractor will cooperate to ensure that the DRB considers disputes promptly, taking into consideration the particular circumstances and the time required to prepare appropriate documentation.

(3) Procedures and time periods may be modified by mutual agreement of the disputing parties.

### 105.13.6.4.1 Preparation of Claim File

(1) The department will prepare a claim file within 14 calendar days of either the contractor or the department requesting a DRB hearing. The department will include all previous documents and evidence submitted during the department initial review and decision phases. The department may add additional documents but not additional analysis or conclusions. The claim file may contain the following:

- Contractor's notices and statements.
- Construction engineer's written statements.
- Engineer's decisions.
- Supplemental information from the contractor during the department claim review.
- Project photos.
- Meeting minutes, correspondence, and other documents related to the claim.
- Complete set of plans and specifications.
- Applicable shop drawings and submittals.
- The department's decision.
- Contractor request for a DRB hearing.

(2) After the department has assembled the claim file, the department will provide a copy to the contractor. Provide all additional documentation to the claim file and return a complete copy of the claim file to the department within seven calendar days.

### 105.13.6.4.2 DRB Claim Review

(1) The department will provide a copy of the completed claim file to each board member for review. If the DRB requests additional information, the appropriate party will provide the information to the DRB, but may not request reports, documents, or other information that are not normally generated by the department or the contractor in the course of construction of the project. The DRB may also visit the site to become familiar with the project and claim.

### 105.13.6.4.3 Scheduling Review

(1) The project manager and DRB chair shall schedule the hearing. The DRB will set a date and location for a hearing no earlier than 30 calendar days but no later than 60 calendar days after the receipt of a written request for a DRB hearing.

(2) After conferring with both the department and the contractor, the DRB Chairperson will establish a submittal schedule so that adequate time is allowed for each party to address the other party's statements and supporting documentation before the presentation.

### 105.13.6.4.4 Pre-presentation Requirements

(1) Concise written position statements shall be prepared by both the department and the contractor, with exhibit references to supporting documentation. The position statement shall be submitted to each DRB member and to the other party. Submit one copy to each DRB member and 3 copies to the other disputing party at least 14 calendar days before the DRB hearing. Both parties will be allowed to amend or append information to their position statement up to 7 calendar days before the hearing. All amendments or appendages shall be copied to the involved parties as prescribed for the position statement.

(2) In large dollar amount disputes or disputes involving complex issues, the DRB may meet privately to review the information provided, discuss the procedures to be followed in hearing the dispute and the method of presentation to be followed. The DRB may also call a pre-meeting conference to discuss procedures with both the department and the contractor.

(3) At least 7 calendar days before the date scheduled for a hearing, each party must submit to the DRB Members and to the other party a list of the persons who will attend or represent them at the hearing.

### 105.13.6.4.5 Presentation

(1) Unless otherwise agreed by the DRB, the department, and the contractor, he presentation will be conducted at the nearest department region office. However, any location that would be more convenient and still provide all required facilities and access to necessary documentation is satisfactory.

(2) The department and the contractor shall have representatives at all presentations. The DRB will establish which party will make its presentation first. The department and the contractor will be allowed successive rebuttals until all aspects are fully covered. The DRB members and the department and the contractor may ask questions, request clarification, or ask for additional data. All questions from the department or contractor shall be directed to the DRB; cross examination will not be allowed. In difficult or complex cases, additional presentations may be necessary to facilitate full consideration and understanding of all the evidence presented by both the department and the contractor. Both the department and the contractor shall be provided adequate opportunity to present their evidence, documentation, and testimony regarding all issues before the DRB.

(3) Unless otherwise agreed by the department and the contractor, presentations will relate to issues of entitlement only. When the department and the contractor agree that the DRB will review or give guidance on issues of money owed as well as entitlement, both the department and the contractor will complete their presentations on entitlement before the amount of money owed is presented.

(4) A formal transcript of the presentations will not be prepared without a formal request to the DRB. When requested by either the department or the contractor, the DRB may allow recordation and transcription by a court reporter with the cost to be allocated as agreed by the department and the contractor. This transcript, when prepared, shall not constitute the official record of the DRB Review. The record prepared by the DRB shall be the official record of the DRB Review. The DRB may provide for audio or video recordings of the presentations by the DRB only.

(5) No participation by attorneys or legal counsel at the hearing will be allowed.

(6) If either the department or the contractor does not appear before the DRB on the date scheduled for the presentations, without justifiable cause, the party that was absent will be liable for all additional costs attributable to the cancellation of the hearing.

#### 105.13.6.4.6 Deliberations

(1) After the presentation is concluded, the DRB will confer to formulate its findings and recommendations. All DRB deliberations shall be conducted in private, with all individual views kept strictly confidential from disclosure to others.

#### 105.13.6.4.7 Special Services

(1) If at any time in the DRB process, the DRB believes that assistance from a technical expert or specialist is necessary or would facilitate resolution of the dispute, the DRB may request permission to retain these services. The DRB will provide to the department and contractor a written request detailing the following:

- Services desired
- Benefit of services requested
- Proposed service provider
- Qualifications of proposed service provider
- Estimated fees for requested services

(2) The department and contractor must mutually agree to this assistance and approve the proposed service provider.

### 105.13.6.4.8 Claims by the Subcontractor

(1) If the contractor's claim includes one or more subcontractor claims, the contractor shall ensure that an authorized representative with actual knowledge of the facts underlying the subcontractor claim assists in presenting the subcontractor's claim and answering questions raised by the DRB members or the department's representatives.

### 105.13.6.4.9 Findings and Recommendations

(1) After all DRB hearings are concluded the DRB will formulate findings and recommendations. The DRB will conduct private and confidential deliberations and attempt to reach a unanimous decision. The DRB will base its findings and recommendations on the terms of the contract documents, established principles of law, statutes and regulations, the facts and circumstances of the claim, and the information provided by the parties.

(2) Within 28 calendar days of the hearings the DRB will issue its final findings and recommendations. Claims resulting in a decision involving $250,000 or less will be binding on the parties to the extent allowed by Wisconsin law. For claims resulting in a decision involving more than $250,000, if accepted by the parties, the department will process the DRB decision for approval and will promptly process all required contract changes.

(3) If the three-member DRB is unable to reach unanimity in its findings and recommendations, the DRB will so advise the department and the contractor in the report of the DRB. A dissenting member may, at his/her discretion, prepare a minority report to be included with the DRB report.

### 105.13.6.4.10 Further Action on Decisions Exceeding $250,000

(1) Each party will have 45 calendar days from receipt of a final decision of the DRB exceeding $250,000 to accept or reject, in writing, the decision. If either party does not accept or reject, in writing, that final decision of the DRB within 45 calendar days of receipt of this decision, the DRB will notify the parties that non-response is considered to be acceptance of that decision and further administrative or judicial review will be barred. Provide notice of acceptance or rejection of the final decision to the DRB in a manner and form prescribed by the DRB. The DRB will reject any notice on a final decision not filed by either party promptly. This 45-day appeal period may be extended if agreed to in writing before the 45-day expiration period.

### 105.13.6.4.11 Advisory Dispute Resolution Board

(1) As an alternative to the standard DRB process, the department may elect to use the DRB in an advisory role to expedite the resolution of a dispute or claim. The DRB may review and hear disputes or claim issues during a regularly scheduled site visit. The DRB will offer its advice either during or promptly after the site visit.

sef-105-005 (20170310)

## 31. Information to Bidders, Use of Recovered Material.

The department encourages the use of waste materials and recovered industrial byproducts as material substitutions (106.2.1), provided they meet standard specification gradation requirements, conform to NR 538 requirements, and follow standard engineering practice for their intended use.
sef-106-005 (20141211)

## 32. 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:

a) 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.

b) 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.

c) 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.

d) 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.0075.005 | Pavement Cleanup Project 1030-11-72 |
| SPV.0075.007 | Pavement Cleanup Project 1030-11-79 |
| SPV.0075.009 | Pavement Cleanup Project 1030-25-79 |
| SPV.0075.011 | Pavement Cleanup Project 1030-11-80 |

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)

## 33. Project Site Air Quality.

Because fine particulate matter levels for Racine 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 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)

## 34. Construction Over or Adjacent to Navigable Waters.

*Add the following to standard spec 107.19:*

The unnamed tributary to East Branch Root River is classified as a navigable waterway. This waterway is located at IH 94 mainline Station 1026+76.

The unnamed tributary to Root River is classified as a navigable waterway. The unnamed tributary parallels the CTH G to 7 Mile Road West Frontage Road from Station 4180+00 to 4188+00 LT.

stp-107-060 (20150630)

## 35. Maintaining Drainage.

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

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

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

**Dewatering (Mechanical Pumping) for treatment Water (sediment-laden) Operations**
If dewatering operations require pumping of water containing sediments (sand, silt, and clay particles), the discharge will not be allowed to leave the work site or discharge to a storm water conveyance system without sediment removal treatment. Refer to article Erosion Control in these special provisions for additional requirements.
sef-107-016 (20170310)

## 36. 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)

## 37. Coordination with Businesses and Residents.

The contractor shall arrange and conduct a meeting between the contractor, the department, affected residents, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations. Hold the first meeting at least one week prior to the start of work under this contract and hold one meeting per month thereafter. The contractor shall arrange for a suitable location for the meeting(s) that provides reasonable accommodation for public involvement. The department will prepare and coordinate publication of the meeting notices and mailings for

the meeting(s). The contractor shall schedule the meeting(s) with at least 2 weeks prior notice to the engineer to allow for these notifications.
stp-108-060 (20141107)

## 38. Pay Plan Quantity.

*Replace standard spec 109.1.1.2.3 with the following:*

The engineer may issue a change order under standard spec 104.2 if the engineer or contractor believes that the quantity shown in the schedule of items varies significantly from the work required in the contract or a quantity discrepancy significantly changes the character of the work.

## 39. Force Account.

*Add the following to standard spec 109.4.5.1 (3)1:*

Include accumulation of wages to date for each employee performing force account work and identify allowable Federal Unemployment Tax (FUTA) and State Unemployment Tax (SUTA) multipliers.
sef-109-005 (20180104)

## 40. Clearing and Grubbing, Emerald Ash Borer.

This applies to projects in the emerald ash borer (EAB) quarantined zones to include: Adams, Brown, Buffalo, Calumet, Columbia, Crawford, Dane, Dodge, Door, Douglas, Fond du Lac, Grant, Green, Iowa, Jackson, Jefferson, Juneau, Kenosha, Kewaunee, La Crosse, Lafayette, Manitowoc, Marquette, Milwaukee, Monroe, Oneida, Outagamie, Ozaukee, Portage, Racine, Richland, Rock, Sauk, Sheboygan, Trempealeau, Vernon, Walworth, Washington, Waukesha, Winnebago and Wood counties.

*Supplement standard spec 201.3 with the following:*

The emerald ash borer (EAB) has resulted in a quarantine of ash trees (*Fraxinus sp.*) by the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) and the Wisconsin Department of Natural Resources (DNR).

Ash trees species attacked by emerald ash borer include the following:

a) Green ash (*F. pennsylvanica*) is found throughout the state, but is most common in southern Wisconsin. It may form pure stands or grow in association with black ash, red maple, swamp white oak, and elm. It grows as an associate in upland hardwood stands, but is most common in and around stream banks, floodplains, and swamps.
b) Black ash (*F. nigra*) is distributed over the entire state but is most frequently found in northern Wisconsin. It is most common in swamps, but is also found in other wet forest types.

c) Blue ash (*F. quadrangulata*) is a threatened species that is currently found only at a few sites in Waukesha County. The species is at the edge of its range in Wisconsin, but is common in states farther south. The species is not of commercial importance. Blue ash twigs are 4-sided.
*d)* White ash (*F. americana*) tends to occur primarily in upland forests, often with *Acer saccharum.*

The quarantine of ash trees includes all horticultural cultivars of the species listed above.

Note that blue ash twigs are 4-sided. All other Wisconsin ash trees have round stems. Also, Mountain ash (*Sorbus americana and S. decora*) is not a true ash and is not susceptible to EAB infestation.

The contractor shall be responsible for hiring a certified arborist to identify all ash trees that will be cleared and grubbed for the project. In addition, prior to scheduled clearing and grubbing activities, the arborist shall mark all ash trees with florescent lime flagging tied around the trunk perimeter.

Follow and obey the following Wisconsin Department of Agriculture, Trade, and Consumer Protection order:

**ATCP 21.17 Emerald ash borer; import controls and quarantine.**

**(1)** Importing or Moving Regulated Items from Infested Areas; Prohibition.
Except as provided in subparagraph (3), no person may do any of the following:

a) Import a regulated item under sub. (2) into this state if that item originates from an emerald ash borer regulated area identified in 7CFR 301.53-3.
b) Move any regulated item under sub. (2) out of an emerald ash borer regulated area that is identified in 7CFR 301.53-3 and located in this state.

Note: The United States Department of Agriculture-Animal and Plant Health Inspection Service (USDA-APHIS) periodically updates the list of regulated areas in 7CFR 301.53-3. Subsection (1) applies to new regulated areas as those areas are identified in the CFR.

**(2) Regulated Items**. The following are regulated items for purposes of subparagraph
a) The emerald ash borer, Agrilus planipennis Fairmaire in any living stage.
b) Ash trees.
c) Ash limbs, branches, and roots.
d) Ash logs, slabs or untreated lumber with bark attached.
e) Cut firewood of all non-coniferous species.
f) Ash chips and ash bark fragments (both composted and uncomposted) larger than one inch in diameter.

g) Any other item or substance that may be designated as a regulated item if a DATCP pest control official determines that it presents a risk of spreading emerald ash borer and notifies the person in possession of the item or substance that it is subject to the restrictions of the regulations.

**(3)** Inspected and Certified Items; Exemption.
Subsection (1) does not prohibit the shipment of a regulated item if a pest control official in the state or province of origin does all of the following:

a) Inspects the regulated item.
b) Certifies any of the following in a certificate that accompanies the shipment:
   1. The regulated item originates from non−infested premises and has not been exposed to emerald ash borer.
   2. The regulated item was found, at the time of inspection, to be free of emerald ash borer.
   3. The regulated item has been effectively treated to destroy emerald ash borer. The certificate shall specify the date and method of treatment.
   4. The regulated item is produced, processed, stored, handled or used under conditions, described in the certificate, that effectively preclude the transmission of emerald ash borer.

**Regulatory Considerations**

a) The quarantine means that ash wood products may not be transported out of the quarantined area.
b) Clearing and grubbing includes all ash trees that are to be removed from within the project footprint. If ash trees are identified within clearing and grubbing limits of the project, the following measures are required for the disposal:

**Chipped Ash Trees**

a) May be left on site if used as landscape mulch within the project limits. If used as mulch on site, chips may not be applied at a depth greater than standard mulch applications as this will impede germination of seeded areas.
b) May be buried on site within the right-of-way according to standard spec 201.3 (14).
c) May be buried on adjacent properties to projects within the quarantined zone with prior approval of the engineer according to standard spec 201.3 (15).
d) May be trucked to a licensed landfill within the quarantined zone with the engineer's approval according to standard spec 201.3 (15).
e) Burning chips is optional if in compliance with standard spec 201.3.
f) Chips must be disposed of immediately if not used for project mulching and may not be stockpiled and left on site for potential transport by others. Chips may be stockpiled temporarily if they will be used for project mulching and are not readily accessible to the public.
g) Chipper equipment must be cleaned following post-chipping activities to ensure no spread of wood chip debris into non-quarantined counties.

**Ash logs, Branches, and Roots**

a) May be buried without chipping within the existing right-of-way or on adjacent properties according to standard spec 201.3 (14)(15).
b) May be trucked to a licensed landfill within the quarantined zone with the engineer's approval according to standard spec 201.3 (15).
c) Burning is optional if in compliance with standard spec 201.3.
d) Ash logs, branches, and roots must be disposed of immediately and may not stockpiled.
e) All additional costs will be incidental to clearing and grubbing items.
f) Do not bury or use mulch in an area that will be disturbed again during later phases of the project.
g) Anyone moving firewood or ash products from the state or these counties is subject to state and federal fines up to $1,000.00. All fines are the responsibility of the contractor. Obtain updated quarantine information at the DNR Firewood Information Line at 1-800-303-WOOD.

**Furnishing and Planting Plant Materials**

*Supplement standard spec 632.2.2 with the following:*

Ash trees may be obtained from inside or outside the quarantine area and planted within the quarantined area. Ash trees from within the quarantine area may not be transported and planted into the non-quarantined area.

**Updates for Compliance**

Each year, as a service, the Wisconsin department of agriculture, trade and consumer protection distributes an updated federal CFR listing to nursery license holders and other affected persons in this state. More frequent updates, if any, are available on the Department of Agriculture, Trade, and Consumer Protection (DATCP) website at **www.datcp.state.wi.us**. Subsection (1) applies to new regulated areas as those areas are identified in the CFR, regardless of whether affected persons receive update notices from the DATCP. Persons may request update notices by calling **(608) 224−4573**, by visiting the DATCP website, or by writing to the following address:

Wisconsin Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Resource Management
P.O. Box 8911
Madison WI 53708−8911

**Regulated Items**

More frequent updates, if any, are available on the DATCP website at **www.datcp.state.wi.us**. Subsection (1) applies to new regulated areas as those areas are identified in the CFR, regardless of whether affected persons receive update notices from DATCP. Persons may request update notices by calling (608) 224−4573, by visiting the DATCP website, or by writing to the above address.
SER-201.1 (20160808)

## 41. Removing Old Culverts and Bridges.

*Add the following to standard spec 203.3.1:*

**203.3.1.1 Structure Removal Site Safety Plan**

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

**203.3.1.2 Structure Removal Plans**

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

| Existing Structure | Structure Type | Feature On | Feature Under |
|---|---|---|---|
| B-51-29 | 3-span haunched slab bridge | I-94 SB | CTH K |
| B-51-30 | 3-span haunched slab bridge | I-94 NB | CTH K |
| B-51-25 | 3-span haunched slab bridge | I-94 SB | Kraut Road |
| B-51-26 | 3-span haunched slab bridge | I-94 NB | Kraut Road |
| B-51-27 | 3-span haunched slab bridge | I-94 SB | Golf Road |
| B-51-28 | 3-span haunched slab bridge | I-94 NB | Golf Road |

(2) 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.

(3) 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.

**203.3.1.3 Structure Pre-Removal Meetings**

(1) After submission of the Structure Removal Site Safety Plan and required Structure Removal Plans, 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.

*Add the following to standard spec 203.3.2.1 as paragraph four:*

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

*Add the following to standard spec 203.5.1(2):*

Payment includes preparation and submittal of a Structure Removal Site Safety Plan; preparation and submittal of Structure Removal Plans and performing all structure removal work conforming to the submitted plans.
sef-203-005 (20180104)

## 42. Abatement of Asbestos Containing Material Structure B-51-27, Item 203.0210.S.001; B-51-28, Item 203.0210.S.002; B-51-29, Item 203.0210.S.003; B-51-30, Item 203.0210.S.004; B-51-25, Item 203.0210.S.009; B-51-26, Item 203.0210.S.010.

**A Description**
This special provision describes abating asbestos containing material on structures according to the plans, the pertinent provisions of the standard specifications, and as hereinafter provided.

**B (Vacant)**

**C Construction**
**1030-11-72**
Tim Petrofske of Sigma Environmental Services, Inc, License Number AII-115985, and Thomas McCoy of Sigma Environmental Services, Inc, License Number AII-117261, inspected Structure B-51-29 and B-51-30 for asbestos on January 29, 2009. Regulated Asbestos Containing Material (RACM) was found on this structure in the following locations and quantities:

**B-51-29**

| Sample No. | Description | Sample Location | Analytical Results and Method | Category | Condition | Total Amount of Material on Structure |
|---|---|---|---|---|---|---|
| 16 | Gasket Light Grey | Bridge Railing Southwest | PC 2.0% Chrysotile | Category I Non-friable | Poor | 4.3 sf |
| 17 | Gasket Light Grey | Bridge Railing Southwest | PC 1.4% Chrysotile | Category I Non-friable | Poor | |
| 17 | Gasket Light Grey | Bridge Railing West Center | PC 1.6% Chrysotile | Category I Non-friable | Poor | |
| Utility | Conduit 3-inch | Bridge Railing Southwest | ATC | Category II Non-friable | Fair | 123 lf |
| Utility | Lights | Bridge Railing Southwest | ATC | Category II Non-friable | Fair | 2.0 sf |

**B-51-30**

| Sample No. | Description | Sample Location | Analytical Results and Method | Category | Condition | Total Amount of Material on Structure |
|---|---|---|---|---|---|---|
| 16 | Gasket Light Grey | Bridge Railing Southeast | PC 0.5% Chrysotile | Category I Non-friable | Poor | 4.3 sf |
| 17 | Gasket Light Grey | Bridge Railing Southeast | PC 1.2% Chrysotile | Category I Non-friable | Poor | |
| 18 | Gasket Light Grey | Bridge Railing Northeast | PC 1.1% Chrysotile | Category I Non-friable | Poor | |

The RACM on this structure must be abated by a licensed abatement contractor. A copy of the inspection report is available from Andrew Malsom, WisDOT SE Region Hazmat and Environmental Engineer at (262) 548-6705. According to NR447 and DHS159 , ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand-delivery, or using the online notification system at least 10 working days prior to beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form and the abatement report to Andrew Malsom, WisDOT SE Region Hazmat and Environmental Engineer at (262) 548-6705 and DOT BTS-ESS attn: Hazardous Materials Specialist PO Box 7965, Madison, WI 53707-7965. In addition, comply with all local or municipal asbestos requirements.

Use the following information to complete WisDNR form 4500-113:

- Site Name:
  Structure B-51-29, IH-94 Eastbound – USH 41 Southbound overCTH K.
  Structure B-51-30, IH-94 Westbound – USH 41 Northbound over CTH K
- Site Address: Lat. 424642.0, Long. 875712.0, Section 25 Town 04N Range 21E Town of Raymond.
- Ownership Information: WisDOT Transportation Southeast Region, 141 NW Barstow Street, Waukesha, WI 53187.
- Contact: Ken Kiepczynski, Regional construction engineer
- Phone: (414) 659-3055
- Age: 59 years old. This structure was constructed in 1959.
- Area: 7,472 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 according to standard spec 107.24. Keep material wet until it is abated or until it is determined to be non-asbestos containing material.

**1030-11-79:**

Tim Petrofske, License Number All-115985, inspected Structures B-51-27 and B-51-28 for asbestos on October 28, 2008. Regulated Asbestos Containing Material (RACM) was found on these structures in the following locations and quantities:

**B-51-27**

| Sample No. | Description | Sample Location | Analytical Results and Method | Category | Condition | Total Amount of Material on Structure |
|---|---|---|---|---|---|---|
| 07 | Gasket Light Grey | Bridge Railing Northwest | PC 1.2% Chrysotile | Category I Non-friable | Poor | 4.3 sf |
| 08 | Gasket Light Grey | Bridge Railing West Center | PC 1.3% Chrysotile | Category I Non-friable | Poor | |
| 09 | Gasket Light Grey | Bridge Railing Southwest | PC 1.2% Chrysotile | Category I Non-friable | Poor | |

**B-51-28**

| Sample No. | Description | Sample Location | Analytical Results and Method | Category | Condition | Total Amount of Material on Structure |
|---|---|---|---|---|---|---|
| 07 | Gasket Light Grey | Bridge Railing Southeast | PC 1.2% Chrysotile | Category I Non-friable | Poor | 4.3 sf |
| 08 | Gasket Light Grey | Bridge Railing East Center | PC 1.4% Chrysotile | Category I Non-friable | Poor | |
| 09 | Gasket Light Grey | Bridge Railing Northeast | PC 1.2% Chrysotile | Category I Non-friable | Poor | |
| 16 | Locktite Silver | Bridge Railing Bolts Southeast | PC 0.75% Chrysotile | Category II Non-friable | Poor | 0.4 sf |
| 17 | Locktite Silver | Bridge Railing Bolts East Center | PC 1.2% Chrysotile | Category II Non-friable | Poor | |
| 18 | Locktite Silver | Bridge Railing Bolts Northeast | PC 0.5% Chrysotile | Category II Non-friable | Poor | |

The RACM on this structure must be abated by a licensed abatement contractor. A copy of the inspection report is available from Andrew Malsom, WisDOT SE Region Hazmat and Environmental Engineer at (262) 548-6705. According to NR447 and DHS159 , ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand-delivery, or using the online notification system at least 10 working days prior to beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form and the abatement report to Andrew Malsom, WisDOT SE Region Hazmat and Environmental Engineer at (262) 548-6705 and DOT BTS-ESS attn: Hazardous Materials Specialist

PO Box 7965, Madison, WI. 53707-7965. In addition, comply with all local or municipal asbestos requirements.

Use the following information to complete WisDNR form 4500-113:

- Site Name:
  Structure B-51-27, IH 94 Southbound over Golf Road
  Structure B-51-28, IH 94 Northbound over Golf Road
- Site Address: Latitude 424554.00 Longitude 875712.00, Section 36 Town 04N Range 21E, Town of Raymond
- Ownership Information: WisDOT Southeast Region, 141 NW Barstow Street, PO Box 798, Waukesha, WI, 53187
- Contact: Ken Kiepczynski, Regional construction engineer
- Phone: (414) 659-3055
- Age: 59 years old. These structures were constructed in 1959.
- Area of deck: B-51-27: 6,638 SF; B-51-28: 6,638 SF

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 according to standard spec 107.24. Keep material wet until it is abated or until it is determined to be non-asbestos containing material.

**1030-11-80:**

Tim Petrofske, License Number AII-115985, inspected Structures B-51-25 and B-51-26 for asbestos on October 27, 2008. Regulated Asbestos Containing Material (RACM) was found on these structures in the following locations and quantities:

**B-51-25**

| Sample No. | Description | Sample Location | Analytical Results and Method | Category | Condition | Total Amount of Material on Structure |
|---|---|---|---|---|---|---|
| 07 | Gasket Light Grey | Bridge Railing Northwest | PC 1.1% Chrysotile | Category I Non-friable | Poor | 4.3 sf |
| 08 | Gasket Light Grey | Bridge Railing West Center | PC 1.8% Chrysotile | Category I Non-friable | Poor | |
| 09 | Gasket Light Grey | Bridge Railing Southwest | PC 1.4% Chrysotile | Category I Non-friable | Poor | |
| 16 | Locktite Silver | Bridge Railing Bolts Northwest | PC 0.5% Chrysotile | Category II Non-friable | Poor | 0.4 sf |
| 17 | Locktite Silver | Bridge Railing Bolts West Center | PC 0.75% Chrysotile | Category II Non-friable | Poor | |
| 18 | Locktite Silver | Bridge Railing Bolts Southwest | PC 1.3% Chrysotile | Category II Non-friable | Poor | |

**B-51-26**

| Sample No. | Description | Sample Location | Analytical Results and Method | Category | Condition | Total Amount of Material on Structure |
|---|---|---|---|---|---|---|
| 07 | Gasket Light Grey | Bridge Railing Southeast | PC 1.3% Chrysotile | Category I Non-friable | Poor | 4.3 sf |
| 08 | Gasket Light Grey | Bridge Railing East Center | PC 1.5% Chrysotile | Category I Non-friable | Poor | |
| 09 | Gasket Light Grey | Bridge Railing Northeast | PC 1.3% Chrysotile | Category I Non-friable | Poor | |
| 16 | Locktite Silver | Bridge Railing Bolts Southeast | PC 0.75% Chrysotile | Category II Non-friable | Poor | 0.4 sf |
| 17 | Locktite Silver | Bridge Railing Bolts East Center | PC 1.4% Chrysotile | Category II Non-friable | Poor | |
| 18 | Locktite Silver | Bridge Railing Bolts Northeast | PC 1.1% Chrysotile | Category II Non-friable | Poor | |

The RACM on this structure must be abated by a licensed abatement contractor. A copy of the inspection report is available from Andrew Malsom, WisDOT SE Region Hazmat and Environmental Engineer at (262) 548-6705. According to NR447 and DHS159 , ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand-delivery, or using the online notification system at least 10 working days prior to beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form and the abatement report to Andrew Malsom, WisDOT SE Region Hazmat and Environmental Engineer at (262) 548-6705 and DOT BTS-ESS attn: Hazardous Materials Specialist PO Box 7965, Madison, WI. 53707-7965. In addition, comply with all local or municipal asbestos requirements.

Use the following information to complete WisDNR form 4500-113:

- Site Name:
  Structure B-51-25, IH 94 Eastbound over Kraut Road
  Structure B-51-26, IH 94 Westbound over Kraut Road
- Site Address: Latitude 424430.00 Longitude 875712.00, Section 01 Town 03N Range 21E, Town of Yorkville
- Ownership Information: WisDOT Southeast Region, 141 NW Barstow Street, PO Box 798, Waukesha, WI, 53187
- Contact: Ken Kiepczynski, Regional construction engineer
- Phone: (414) 659-3055
- Age: 59 years old. These structures were constructed in 1959.
- Area of deck: B-51-25: 6,638 SF
  B-51-26: 6,638 SF

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 according to standard spec 107.24. Keep material wet until it is abated or until it is determined to be non-asbestos containing material.

**D Measurement**

The department will measure Abatement of Asbestos Containing Material (Structure), completed according to the contract and accepted, as a single complete unit of work.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 203.0210.S.001 | Abatement of Asbestos Containing Material Structure B-51-27 | LS |
| 203.0210.S.002 | Abatement of Asbestos Containing Material Structure B-51-28 | LS |
| 203.0210.S.003 | Abatement of Asbestos Containing Material Structure B-51-29 | LS |
| 203.0210.S.004 | Abatement of Asbestos Containing Material Structure B-51-30 | LS |
| 203.0210.S.009 | Abatement of Asbestos Containing Material Structure B-51-25 | LS |
| 203.0210.S.010 | Abatement of Asbestos Containing Material Structure B-51-26 | LS |

Payment is full compensation for submitting necessary forms; removing all asbestos; properly disposing of all waste materials.

stp-203-005 (20120615)

## 43. 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.

sef-204-005 (20140415)

## 44. Removing Concrete Barrier.

*Add the following to standard spec 204.3.2.2.1 as paragraph fourteen:*

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

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

(2) Payment for Removing Concrete Barrier is full compensation for all required sawing and removal of existing barrier and footing, and sludge removal.
sef-204-025 (20180104)

## 45. Abandoning Sewer, Item 204.0291.S.

**A Description**
This special provision describes abandoning existing sewer by filling it with cellular concrete according to the pertinent requirements of standard spec 204 and standard spec 501, as shown in the plans, and as hereinafter provided.

**B Materials**
Provide cellular concrete meeting the following specifications: 1 part cement, 1 part fly ash, 8 parts sand, or an approved equal, and water. Provide cement meeting the requirements of standard spec 501.2.1 for Type 1 Portland Cement. Provide sand meeting the requirements of standard spec 501.2.5.3 Provide water meeting the requirements of standard spec 501.2.4.

**C Construction**
Fill the abandoned sewer pipe with cellular concrete as directed by the engineer. In the event that the sewer cannot be completely filled from existing manholes, tap the sewer where necessary and fill from these locations.

**D Measurement**
The department will measure Abandoning Sewer in volume by the cubic yard according to standard spec 109.1.3.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.0291.S | Abandoning Sewer | CY |

Payment is full compensation for furnishing all materials and excavating and backfilling where necessary.
stp-204-050 (20080902)

## 46. Removing Slotted Vane Drain, Item 204.9060.S.003.

**A Description**
This special provision describes removing a slotted vane drain in accordance to the pertinent provisions of standard spec 204 and as hereinafter provided.

**B (Vacant)**

**C (Vacant)**

**D Measurement**
The department will measure Removing Slotted Vane Drain by the individual vane drain, acceptably removed.

**E Payment**
*Supplement standard spec 204.5 to include the following:*

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.003 | Removing Slotted Vane Drain | EACH |

204-025 (20041005)

## 47. Removing Traffic Control Barricades Permanent Type III, Item 204.9060.S.006.

**A Description**
This special provision describes removing Traffic Control Barricades Permanent Type III according to the pertinent provisions of standard spec 204 and as hereinafter provided.

**B (Vacant)**

**C (Vacant)**

**D Measurement**
The department will measure Removing Traffic Control Barricades Permanent Type III in each, acceptably completed.

**E Payment**
*Add the following to standard spec 204.5:*

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.006 | Removing Traffic Control Barricades Permanent Type III | EACH |

stp-204-025 (20150630)

## 48. Removing Luminaires, Item 204.9060.S.100.

**A Description**
This special provision describes removing luminaires according to the pertinent provisions of standard spec 204 and as hereinafter provided.

**B (Vacant)**

**C (Vacant)**

**D Measurement**
The department will measure Removing Luminaires in each, acceptably completed.

**E Payment**
The department will pay for the measured quantities at the contract unit prices under the following bid items:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.100 | Removing Luminaires | EACH |

*Add the following to standard spec 204.5:*

Payment is full compensation for removing luminaires; for disposal of all removed materials, including HPS bulbs, according to all environmental regulations.
stp-204-025 (20150630)

## 49. Removing Lighting Units, Item 204.9060.S.101.

**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. Concrete base removal shall be paid under a separate bid items.

**B Materials**
All removed material shall become the property of the contractor and be disposed off the project site. Lamps, which are considered a hazardous material, become property of the contractor and shall be disposed of an environmentally sound manner.

**C Construction**
Remove lighting units consisting of pole, arm, luminaire, lamp, wires, breakaway device, and associated hardware and appurtenances.

No removal work will be permitted without approval from the engineer. Removal shall start as soon as the temporary lighting or permanent lighting, as applicable, is placed in approved operation. An inspection and approval by the engineer will take place before any associated proposed permanent or temporary lighting is approved for operation.

**D Measurement**
The department will measure Removing Lighting Units by each individual unit removed, acceptably completed.

**E Payment**
*Add the following to standard spec 204.5:*

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.101 | Removing Lighting Units | EACH |

## 50. Removing Controller Cabinet, Item 204.9060.S.201.

**A Description**
This special provision describes removing an existing controller cabinet.

**B (Vacant)**

**C Construction**
Remove controller cabinets at the locations shown on the plans, or as directed by the engineer. Salvage and store the cabinets and all contents for pick up by the department.

Do not remove the existing ITS control cabinets, or any other associated equipment until necessary, or as directed by the engineer. Carefully remove the existing cabinets from the concrete bases, together with all components in such a manner as to safeguard all parts and wiring from damage or loss. Salvage and store the cabinet and contents for pick up by the department.

Prior to removing the existing ITS control cabinets, remove all cables being terminated in the cabinet. Cut existing cables flush with cabinet base and cap existing conduits. Dispose of the cables properly away from the project area.

**D Measurement**
The department will measure Removing Controller Cabinet by the unit, acceptably removed, salvaged, and stored.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.201 | Removing Controller Cabinet | EACH |

Payment is full compensation for removal and storage of the controller cabinet; disconnecting all associated wires and cables; and for capping existing conduits.

## 51. Removing Controller Cabinet Base, Item 204.9060.S.202.

### A Description

This special provision describes removing an existing controller cabinet concrete base.

### B Materials

Existing controller cabinet base, including concrete masonry, ground rods, masonry anchors, and restoration materials such as topsoil, seeding, mulch, and fertilizer according to the pertinent provisions of standard spec 201, 625, 627, 629, 630, 636, and 640.

### C Construction

Remove and dispose of the concrete foundation and all other pertinent materials, and restore the disturbed area by placing 4-inches of topsoil, and fertilize, seed, and mulch all disturbed areas according to the pertinent requirements of the standard specifications.

### D Measurement

The department will measure Removing Controller Cabinet Base by the unit, removed from the ground, removed from the project site, and the disturbed area restored according to the contract.

### E Payment

The department will pay for measured quantities at the contract unit price under the following item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.202 | Removing Controller Cabinet Base | EACH |

Payment is full compensation for removing and disposing of a concrete controller cabinet base, including masonry anchors, ground rods, and concrete masonry; and for topsoil, fertilizer, seed and mulch.

## 52. Removing On-Ramp Closure Gate, Item 204.9060.S.203.

### A Description

This special provision describes removing an existing on-ramp closure gate and disposing of the materials properly off the project site.

### B Materials

Existing pole, transformer base, concrete base, gate arm, winch assembly, LED flashers, wiring, and other components of the existing on-ramp closure gate assembly.

### C Construction

Prior to beginning work on removing the on-ramp closure gate, turn off the power to the gate at the adjacent cabinet that supplies the power, and disconnect the power conductors.

Once the power has been turned off and the conductors disconnected, it is the contractor's decision regarding whether to remove the gate arm, winch, and other hardware from the pole prior to removal, or to remove as one assembly.

Once the above ground portions of the on-ramp closure gate assembly are removed, remove the below ground concrete base and dispose of all materials appropriately off the project site.

**D Measurement**
The department will measure Removing On-Ramp Closure Gate as a unit, removed, including the concrete base, and all materials disposed of, according to the contract.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.203 | Removing On-Ramp Closure Gate | EACH |

Payment is full compensation for disconnecting any necessary wiring; removing the poles; and for removing the concrete base.

## 53. Removing Electrical Service Meter Breaker Pedestal, Item 204.9060.S.204.

**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 Materials**
Existing electrical service meter breaker pedestal.

**C Construction**
Coordinate for removal of the existing electrical service meter breaker pedestal with WE Energies.

Disconnect all connected power wires, remove the pedestal and dispose of all materials properly away from the project area.

**D Measurement**
The department will measure Removing Electrical Service Meter Breaker Pedestal by the unit, acceptably removed.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.204 | Removing Electrical Service Meter Breaker Pedestal | EACH |

Payment is full compensation for coordination with WE Energies; for disconnection of wires; and for removal and disposal of the pedestal.

## 54. Removing Temporary Vehicle Detector Assembly, Item 204.9060.S.205.

**A Description**

This special provision describes removing temporary vehicle detector assemblies from their respective locations in the project area, salvaging the individual components for pick up by the department, and disposing of unwanted components as appropriate.

**B Materials**

Materials will include materials to be salvaged for the department and materials to revert to the contractor be disposed of as determined by the contractor.

Materials to be salvaged for the department include the following:

- One or more Electronic Integrated Systems, Inc. (EIS) Remote Traffic Microwave Sensor (RTMS).
- Cellular modem and antenna.
- Solar power systems consisting of solar power panels, batteries, solar power controllers, and solar power cabinets to house the batteries and controller.
- Mounting hardware for solar power system and RTMS detector.

Materials to revert to the contractor or be disposed of include the following:

- Wood pole
- Cable between solar power system output and RTMS.

**C Construction**

As directed by the engineer, remove the temporary vehicle detector assemblies from their respective locations in the project. Be careful not to damage any of the components to be salvaged for the department.

Salvage the materials described above for pick up by the department.

Dispose non-reusable materials appropriately away from the project site.

Restore the site to match the existing surrounding area using standard restoration items as described in the standard specifications.

**D Measurement**

The department will measure Removing Temporary Vehicle Detector Assembly as each individual unit, acceptably completed.

**E Payment**

The department will pay for measured quantities at the contract unit price each under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.205 | Removing Temporary Vehicle Detector Assembly | EACH |

Payment is full compensation for removing the assembly; for salvaging appropriate materials; disposal of other materials off site; and for restoration of the site.

## 55. Removing Temporary Traffic Camera Assembly, Item 204.9060.S.207.

**A Description**
This special provision describes removing and disassembling a temporary traffic camera assembly, including CCTV camera, wireless Ethernet bridge, wood pole, and solar power assembly. This work includes salvaging materials for pick up by the department.

**B Materials**
Materials will include materials to be salvaged for the department and materials to revert to the contractor be disposed of as determined by the contractor.

Materials to be salvaged for the department include the following:

- One Internet Protocol Dome CCTV camera
- One solar power system consisting of 4-85W panels, 4-120 Amp-Hour batteries, a solar power controller, and two solar power cabinets to house the batteries and controller.
- One cellular modem
- One mid-span Power-Over-Ethernet power injector

Materials to revert to the contractor or be disposed of include the following:

- Wood pole
- Conduit
- Stainless steel bands
- Network cable and power conductors

**C Construction**
As directed by the engineer, remove the temporary CCTV camera assembly from its respective location in the project. Be careful not to damage any of the components to be salvaged for the department.

Salvage the materials described above for pick up by the department.

Dispose of non-reusable materials away from the project site.

Restore the site to match the existing surrounding area using standard restoration items as described in the standard specifications.

**D Measurement**
The department will measure Removing Temporary Traffic Camera Assembly as each individual unit consisting of one CCTV camera and one CCTV camera solar power

assembly, acceptably removed with the appropriate materials salvaged for pick up by the department.

**E Payment**
The department will pay for measured quantities at the contract unit price each under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9060.S.207 | Removing Temporary Traffic Camera Assembly | EACH |

Payment is full compensation for removing the assembly, salvaging appropriate materials for pick up by the department, disposing of other materials, and for restoring the site to its original condition.

## 56. Removing Underdrain, Item 204.9090.S.001.

**A Description**
This special provision describes removing Underdrain according to the pertinent provisions of standard spec 204 and as hereinafter provided.

**B (Vacant)**

**C (Vacant)**

**D Measurement**
The department will measure Removing Underdrain in linear feet, acceptably completed.

**E Payment**
*Add the following to standard spec 204.5:*

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9090.S.001 | Removing Underdrain | LF |

stp-204-025 (20150630)

## 57. Removing Draintile, Item 204.9090.S.002.

**A Description**
This special provision describes removing draintile according to the pertinent provisions of standard spec 204 and as hereinafter provided.

**B (Vacant)**

**C (Vacant)**

**D Measurement**
The department will measure Removing Draintile in linear feet, acceptably completed.

**E Payment**
*Add the following to standard spec 204.5:*

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9090.S.002 | Removing Draintile | LF |

stp-204-025 (20150630)

## 58. Removing Concrete Barrier Temporary, Item 204.9090.S.003.

**A Description**
This special provision describes removing Concrete Barrier Temporary according to the pertinent provisions of standard spec 204 and as hereinafter provided.

**B (Vacant)**

**C (Vacant)**

**D Measurement**
The department will measure Removing Concrete Barrier Temporary in linear feet, acceptably completed.

**E Payment**
*Add the following to standard spec 204.5:*

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 204.9090.S.003 | Removing Concrete Barrier Temporary | LF |

stp-204-025 (20150630)

## 59. Roadway Excavation.

*Add the following to standard spec 205.5.2(1):*

Provide the department with an earth flow diagram within 15 calendar days of receiving the contract Notice to Proceed.

Identify all excavation required for the project, all sources of roadway embankment fill including offsite material, shrinkage and swell factors, proposed stockpile material, structure excavation (if used in embankments), waste, and fills anticipated to be treated with a soil drying agent. Provide start and finish dates for each grading area within the division. These dates should correspond to the dates shown on the project schedule.

Any deviation from the sequencing shown in the earth flow diagram will require approval from the engineer, and will require an update to the earth flow diagram.

Attend biweekly earthwork meetings scheduled by the engineer to discuss earth flows, borrow sites, soil drying and strengthening, and other upcoming earthwork activities and technical issues.

*Add the following to standard spec 205.5.2(2):*

The department will not pay EBS to remove frost from embankments or cut sections, unless directed by the engineer. It is the contractor's responsibility to stage construction so that exposed subgrades do not freeze or to provide adequate frost protection. Any work necessary to remove and replace frozen materials from newly constructed embankments or exposed cut sections is considered incidental to the excavation bid items.

## 60. 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. The closest DNR approved bioremediation facility is:

Veolia's Emerald Park Landfill
W124 S10629 124th Street
Muskego, WI 53150

Republic Services, Inc. Kestrel Hawk Landfill
1989 Oakes Road
Racine, WI 53406

Perform this work according to standard spec 205 and with pertinent parts of Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR 718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport contaminated soil.

**A.2 Notice to the Contractor – Contaminated Soil Location(s)**

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 location(s) as shown on the plans:

Ramp SW Station 1054+50 to 1055+25 from reference line to construction limits left, from approximately 2 to 8 feet bgs. Approximately 820 cubic yards (approximately 1,400 tons using a 1.7 tons per cubic yard conversion factor) of soil to be excavated from this area for storm sewers and grading will require bioremediation.

**A.3 Notice to the Contractor – USTs Beyond Construction Limits**

Two abandoned underground storage tanks (USTs) are present at the following location as shown on the plans:

Ramp SE Station 1050+75, approximately 25 feet right of reference line.

The USTs are expected to be beyond the construction limits. These USTs are not owned by the WisDOT and will remain in place. Control construction operations at this location to ensure that excavation does not extend beyond the excavation limits indicated on the plans.

**A.4 Notice to the Contractor – Former Gas Station Beyond the Construction Limits**

A former gasoline filling station operated at the following location as shown on the plans:

IH 94 Mainline Station 1057+00.

The gas station existed within the present limits of the southbound lanes of IH 94, near the northeast corner of the intersection of CTH K and West Frontage Road until approximately 1960. The exact location of the former station and its improvements are unknown. The ultimate disposition of the USTs is undocumented; however they are expected to be beyond the excavation limits required for the highway project. Control construction operations at this location to ensure that excavation does not extend beyond the excavation limits indicated on the plans.

If contaminated soils 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.5 Coordination**

Coordinate work under this contract with the environment consultant:

| | |
|---|---|
| Consultant: | TRC Environmental Corporation |
| Address: | 150 N. Patrick Blvd. Suite 180, Brookfield, WI 53045 |
| Contact: | Bryan Bergmann, P.G. |
| Phone: | (262) 901-2126 office, (262) 227-9210 cell |
| Fax: | (262) 879-1220 |
| E-mail: | bbergmann@trcsolutions.com |

The role of the environmental consultant will be limited to:

1. Determining the location and limits of contaminated soil to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying contaminated soils to be hauled to the bioremediation facility;
3. Documenting that activities associated with management of contaminated soil are in conformance with the contaminated soil management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of contaminated soil from the bioremediation facility.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the areas of contamination to the environmental consultant. Also notify the environmental consultant at least three calendar days prior to commencement of excavation activities in 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 that will be used for disposal of contaminated soils, and provide this information to the environmental consultant no later than 30 calendar days prior to commencement of excavation activities in the contaminated areas or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals for disposal of contaminated soils from the bioremediation facility. Do not transport contaminated soil offsite without prior approval from the environmental consultant.

**A.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 prior to 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 15 cubic yards excavated.

Directly load and haul soils designated by the environmental consultant for offsite bioremediation to the DNR approved bioremediation facility. Use loading and hauling practices that are appropriate to prevent any spills or releases of petroleum-contaminated soils or residues. Prior to transport, sufficiently dewater soils designated for off-site bioremediation so as not to contain free liquids.

If dewatering is required in an area of known contamination, water generated from dewatering activities may contain contaminants and require special handling and disposal. Rainwater that comes in contact with the contaminated soil is also contaminated and shall be handled in the same manner as groundwater. Such water may, with approval from a local publicly owned treatment works, be discharged to a sanitary sewer as follows:

- Meet all applicable requirements of the local publicly owned treatment works including the control of suspended solids. Perform all necessary monitoring to document compliance with the local publicly owned treatment works' requirements. Furnish, install, operate, maintain, disassemble, and remove treatment equipment necessary to comply with the local publicly owned treatment works' requirements.

- Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities.

- In the event that no sanitary sewer is nearby for the disposal of contaminated groundwater, the contractor shall haul the contaminated water to a treatment facility.

Costs associated with excavation and dewatering in the contaminated area are considered incidental to this pay item. The Wisconsin Department of Transportation will be the generator of regulated solid waste from the construction project.

Limit excavation in the location described in A.2 to minimize the handling of groundwater. Notify the engineer of any dewatering activities, and obtain any permits necessary to discharge or dispose of contaminated water. Provide copies of such Permit to the engineer.

Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin

**D Measurement**
The department will measure Excavation, Hauling, and Disposal of Petroleum Contaminated Soil in tons of contaminated soil, accepted by the bioremediation facility as documented by weight tickets generated by the bioremediation facility.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 205.0501.S | Excavation, Hauling, and Disposal of Petroleum Contaminated Soil | TON |

Payment is full compensation for excavating, segregating, loading, hauling, and treatment via bioremediation of contaminated soil; obtaining solid waste collection and transportation service operating licenses; assisting in the collection soil samples for field evaluation; and dewatering of soils prior to transport, if necessary.
~~stp-205-003 (20150630)~~

## 61. Temporary Emergency Pullouts, Item 205.3000.S.

**A Description**
This special provision describes grading, furnishing, and placing crushed aggregate base course and signs to construct temporary emergency pullouts. This item also includes the removal of the pullouts including furnishing and placing finishing items as shown on the plan, and according to the pertinent requirements of the standard specifications and as hereinafter provided.

**B (Vacant)**

**C Construction**
Dispose of all surplus and unsuitable material according to standard spec 205.3.12.

**D Measurement**
The department will measure Temporary Emergency Pullouts 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 |
|---|---|---|
| 205.3000.S | Temporary Emergency Pullouts | EACH |

Payment is full compensation for grading, shaping, and compacting; providing and placing crushed aggregate base course; providing and placing signs; removing as required; and for providing and placing topsoil, fertilizer, seed, and mulch.
stp-205-020 (20080902)

## 62. 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, as backfill at retaining walls, 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 Strength (psi) | ASTM D-6024 | 20-40 @ 14 days<br>40-80 @ 28 days<br>80-120 @ 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.

### 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 40º 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 (20090901)~~

## 63. QMP Subgrade.

**A Description**

This special provision describes requirements for subgrade materials within the roadway foundation as defined in standard spec 101.3.

At areas of proposed mechanically stabilized earth (MSE) walls with underlying proposed embankment, the requirements for subgrade materials under this special provision apply to the full width of the embankment area as shown in the cross sections.

Conform to standard spec 207 as modified in this special provision for all work within the roadway foundation, and within the full width of the proposed embankment areas underlying and adjacent to proposed MSE walls, at the following locations:

- IH 94 Mainline
- IH 94 Ramps and Weigh Station Ramps
- All temporary left in place and permanent freeway ramps
- Cross roads
- Local roads
- Temporary roads

Provide and maintain a quality control program. A quality control program is defined as all activities, including process control inspection, sampling and testing, documentation, and necessary adjustments in the process that are related to the construction of subgrade which meets all the requirements of this provision.

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures. The contractor may obtain the CMM from the department's web site at:

http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/rdwy/default.aspx

## B Materials

### B.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform grading work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. Ensure that the plan provides the following elements:

- An organizational chart with names, telephone numbers, current certifications or titles, and roles and responsibilities of QC, QV, and IA personnel.
- The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
- An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
- Location of the QC laboratory, retained sample storage, and control charts and other documentation.
- A summary of the locations and calculated quantities to be tested under this provision.
- An explanation regarding the basis of acceptance for material that cannot be tested by nuclear methods due to a high percentage of oversized particles.

### B.2 Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present at the site during all subgrade preparation, fill placement, compaction, and nuclear testing activities. Have a nuclear density technician certified under HTCP at level I perform field density and field moisture content testing.

### B.3 Laboratory

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

Materials Laboratory
3502 Kinsman Boulevard
Madison, Wisconsin 53704-2583
Telephone: (608) 246-7938
http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/qual-labs.aspx

**B.4 Equipment**

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at:
http://www.atwoodsystems.com/.

Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge within 12 months before using it on the project. Retain a copy of the calibration certificate with the gauge. Nuclear density gauge calibration verification is required daily when earthwork construction operations require testing under this special provision article. This calibration verification shall be performed using the departments "Validator" apparatus which is located at the 94 N-S construction field office. Establish a standard gauge reading for the "Validator" using the ten test average method. The source emitter depth for calibration verification, in the direct transmission mode, will be determined by the engineer. This procedure will establish the "Validator" apparatus, as the contractor's project reference site.

Conform to ASTM D 2950 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

**B.5 Soil Source Study**

Conduct and submit a soil source study before beginning of grading operations. Ensure that this study identifies each distinct soil type on the project within the top 15 feet of cut areas and all borrow material. Provide the in-bank natural moisture content for each soil. Develop moisture-density curves for each identified soil type by utilizing AASHTO T 99, with a minimum of 5 individual points, and a zero air voids curve at a specific gravity of 2.65. If a different specific gravity is used perform a specific gravity test. Determine the maximum density and corresponding optimum moisture level for each soil type. Develop a site-specific family of Proctor curves for this contract from the completed soil source study and submit to the engineer for review and acceptance.

Perform characterization tests on each of the soil types selected for the soil source study. The tests for roadway include AASHTO T 89, AASHTO T 90, AASHTO T 27, and AASHTO T 11. Classify each soil type selected according to the AASHTO soil

classification system based on the characterization tests. Do not begin grading operations until the engineer accepts the soil source study.

Use the soil types identified in the soil source study with corresponding maximum densities and optimum moisture values to determine the compaction compliance on the project. Continue the soil source study in those areas of cuts greater than 15 feet that were not accessible during the initial study. Include data on additional soil types if project conditions change. Ensure that tests of additional soil types are complete and the engineer accepts the results before incorporating the material into the roadway foundation.

Split each Proctor sample and identify so as to provide comparison with the department's test results. Unless the engineer directs otherwise, retain the QC split samples for 14 calendar days and promptly deliver the department's split samples to the department at:

Regional Materials Laboratory
Attn: Paul Emmons
935 S. 60th Street
West Allis, Wisconsin 53214
Telephone: (414) 266-1158

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

**B.6 Quality Control Documentation**

**B.6.1 Control Charts**

Maintain separate control charts for the field density and field moisture content of each grading area. Designate grading areas within the project as follows:

- Embankment portions of the project, except within 200 feet of bridge abutments.
- Embankment within 200 feet of bridge abutments.
- Subgrade cut portions of the project.
- Embankment in pipe culvert, sewer and waterline trenches.
- Structure and granular backfill placed at bridge abutments.
- Embankments of the project where embankments are 20 feet or higher regardless of location to be known as special compaction area.

Ensure that all tests are recorded and become part of the project records. Plot required test results on the control charts. Include random and engineer-requested testing but only include the contractor's randomly selected QC test results in the 4-point running average. The contractor may plot other contractor-performed process control or informational tests on the control charts, but do not include them in 4-point running averages.

Post control charts in an engineer-approved location and update daily. Ensure that the control charts include the project number, the test number, each test element, the applicable control limits, the contractor's individual test results, the running average of the last four data points, and the engineer's quality verification test data points. Use the control charts as

part of a process control system for identifying potential problems and assignable causes. Format control charts according to the CMM.

Submit control charts to the engineer in a neat and orderly manner within 10 business days after completing subgrade construction.

### B.6.2 Records

Document all observations, inspection records, and adjustments to fill placement procedures, soil changes, and test results daily. Note the results of the observations and inspection records as they occur in a permanent field record.

Provide copies of the field density and field moisture running average calculation sheets, records of procedure adjustments, and soil changes to the engineer and QV personnel daily.

Submit original testing records to the engineer in a neat and orderly manner within ten business days after completing subgrade construction.

## B.7 Contractor Testing

### B.7.1 General

Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present during all subgrade preparation, fill placement, compaction, and testing. Have a nuclear density technician certified under HTCP at level I perform the testing for field density and field moisture content. During subgrade construction, use sampling and testing methods identified in the CMM to perform the required tests at randomly selected locations at the indicated minimum frequency for each grading area.

Determine the cubic yards for testing based on a total load count system the engineer and contractor agree to.

For each test, provide the cubic yards represented and the test location to within 2 feet horizontally and 0.5 feet vertically. Use project stationing to determine horizontal location and grade stakes to determine vertical location.

Test areas of suspect compaction or areas which appear to be nonconforming as determined by the engineer.

### B.7.2 Field Density and Field Moisture

Perform the field density and field moisture tests using the nuclear density meter method according to AASHTO T 310. Ensure that each field density test material is related to one of the specific soil types identified in the soil source study in determining the percent compaction. Use textural identification as the primary method of establishing this relationship. Use the representative samples retained from the soil source study when performing the textural identification. Use a coarse particle correction according to AASHTO T 224.

If field density and field moisture tests cannot be performed by the nuclear density method due to a high percentage of oversized particles as determined according to AASHTO T 99 for highway embankments, observe the placement of the embankment and document the basis of acceptance. Document daily quantities of untested embankment and locations where untested embankment is placed, and keep a cumulative quantity of untested embankment material during the project. Include the daily documentation and a summary of the cumulative quantity of untested embankment material with the project records.

### B.7.3 Testing Frequency

#### B.7.3.1 Subgrade Embankment portions of the project, except within 200 Feet of bridge abutments

Perform the required tests at the following frequencies:

| Test | Minimum Frequency |
|---|---|
| Field Density and Moisture (AASHTO T 310) | One per 2,000 cubic yards of fill per lift or one test per grading area per day whichever yields the most tests. |

#### B.7.3.2 Subgrade Embankment Within 200 Feet of Bridge Abutments

Perform the required tests at the following frequencies:

| Test | Minimum Frequency |
|---|---|
| Field Density and Moisture (AASHTO T 310) | One per 1,000 cubic yards of fill per lift or one test per grading area per day whichever yields the most tests. |

#### B.7.3.3 Subgrade Cut

Perform the required tests at the following frequencies:

| Test | Minimum Frequency |
|---|---|
| Field Density and Moisture (AASHTO T 310) | One test per 1,000 linear feet of cut or one test per cut area whichever yields the most tests. The testing will be completed at the finished subgrade elevation. |

#### B.7.3.4 Subgrade Embankment in Pipe Removals, Pipe Culvert, Sewer and Waterline Trenches

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

| Test | Minimum Frequency |
|---|---|
| Field Density and Moisture (AASHTO T 310) | One test per 100 CY of backfill placed per lift or one test per day whichever yields the most tests. |

**B.7.3.5 Structure and Granular Backfill at Bridge Abutments**
Perform the required tests at the following minimum frequencies:

| Test | Minimum Frequency |
|---|---|
| Field Density and Moisture (AASHTO T 310) | One test per 2 feet of vertical backfill height per abutment. |

**B.7.3.6 Embankments of the project 20 feet or higher regardless of location to be known as special compaction area**
Perform the required tests at the following minimum frequencies but exclude MSE wall backfill:

| Test | Minimum Frequency |
|---|---|
| Field Density and Moisture (AASHTO T 310) | One per 2,000 cubic yards of fill per lift or one test per grading area per day whichever yields the most tests. |

**B.7.4 Control Limits**
**B.7.4.1 Field Density**
**B.7.4.1.1 General Conditions**
The lower control limit for field density measurements is a minimum of 95.0 percent of the maximum dry density as determined by AASHTO T 99 or T 272for the 4-point running average and a minimum of 92.0 percent of the maximum dry density for any individual test.

**B.7.4.1.2 Embankments of the project 20 feet or higher regardless of zone to be known as special compaction area excluding MSE wall backfill**
The lower control limit for field density measurements in the special compaction area is a minimum of 98.0 percent of the maximum dry density as determined by AASHTO T 99 or T 272 for the 4-point running average and a minimum of 95.0 percent of the maximum dry density for any individual test.

**B.7.4.2 Field Moisture Content**
The upper control limit for the field moisture content for embankment material within 5 feet or less of finished subgrade is 105.0 percent of the optimum moisture as determined by AASHTO T 99 or T 272 for the 4-point running average.

The upper control limit for the field moisture content for embankment material greater than 5 feet below finished subgrade is 110.0 percent of the optimum moisture as determined by AASHTO T 99 or T 272 for the 4-point running average.

The lower control limit for the field moisture content in for all embankments is 65.0 percent of the determined optimum moisture for the 4-point running average. There is no lower control limit for the field moisture of material having less than 5 percent passing the No. 200 sieve.

### B.7.5 Corrective Action

Notify the engineer if an individual field density test falls below the individual test control limit. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer to improve the density of the subgrade material. After corrective action, perform a randomly located retest within the represented quantity to ensure that the material is acceptable.

Notify the engineer if the field density or field moisture running average point falls below the running average control limit for field density or outside the control limits for field moisture. The subgrade in this area is unacceptable. Perform corrective actions, acceptable to the engineer to improve the quality of the material represented by the running average point. Retest each corrected area at a new random location within its represented quantity and determine a new 4-point running average. If the new running average is not acceptable, perform further corrective actions and retest at new random locations.

If the contractor's control data is proven incorrect resulting in a field density or field moisture point falling below the control limit for field density or outside the control limits for field moisture, the subgrade is unacceptable. Employ the methods described in this special provision for unacceptable material.

## B.8 Department Testing

### B.8.1 General

The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all verification and independent assurance personnel for the project.

The department will provide field density and field moisture test results to the contractor on the day of testing. Test results from Proctor split samples will be provided to the contractor within 7 business days after the sample has been received by the department.

### B.8.2 Verification Testing

The department will have an HTCP technician, or ACT under the direction of a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified for contractor testing personnel for each test being verified. The department will notify the contractor before testing so the contractor can observe QV testing.

The department will test field density and field moisture randomly at locations independent of the contractor's QC work. The department will use split samples for verification of Proctor testing. In all cases, the department will conduct the verification tests in a separate laboratory and with separate equipment from the contractor's QC tests.
The department will perform verification testing as follows:

1. The department will conduct verification tests on Proctor split samples taken by the contractor. These samples may be from the Soil Source Study or sample locations chosen by the engineer from anywhere in the process. The minimum verification testing frequency is one per 90,000 cubic yards, with at least one for each soil type identified in the Soil Source Study.

2. The department will conduct at least one verification test for field density and field moisture per 20,000 cubic yards.

Plot verification tests on the contractor's quality control charts as specified in B.6.1. Do not include verification tests in the 4-point running average.

If verification tests are within specified control limits, no further action is required. If verification tests are not within specified control limits, the engineer and contractor will jointly investigate any testing discrepancies. The investigation may include additional testing as well as review and observation of both the department's and contractor's sampling and testing procedures and equipment. Both parties will document all investigative work.

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

### B.8.3 Independent Assurance Testing

Independent assurance is unbiased testing the department performs to evaluate the department's verification and the contractor's QC sampling and testing including personnel qualifications, procedures, and equipment. The department will perform the independent assurance review according to the department's independent assurance program, which may include one or more of the following:

1. Split sample testing.
2. Proficiency sample testing.
3. Witnessing sampling and testing.
4. Test equipment calibration checks.
5. Reviewing required worksheets and control charts.
6. Requesting that testing personnel perform additional sampling and testing.

Plot the independent assurance tests on the contractor's quality control charts as specified in B.6.1. Do not include independent assurance tests in the 4-point running average.

If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or cooperate in resolving identified deficiencies, the engineer may suspend grading work until action is taken. Resolve disputes as specified in B.9.

**B.9 Dispute Resolution**

The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming product, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party tests to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

**B.10 Acceptance**

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

**C (Vacant)**

**D (Vacant)**

**E Payment**

Costs for all sampling, testing, and documentation required under this special provision are incidental to the work. If the contractor does not perform the work required under this special provision, the department may reduce the contractor's pay. The department will administer pay reduction under the Non-performance of QMP administrative item.

~~sef 207 005 (20171004)~~

## 64. QMP Base Aggregate.

**A Description**

**A.1 General**

(1) This special provision describes contractor quality control (QC) sampling and testing for base aggregates, documenting those test results, and documenting related production and placement process changes. This special provision also describes department quality verification (QV), independent assurance (IA), and dispute resolution.

(2) Conform to standard spec 301, standard spec 305, and standard spec 310 as modified here in this special provision. Apply this special provision to material placed under all of the Base Aggregate Dense and Base Aggregate Open Graded bid items, except do not apply this special provision to material classified as reclaimed asphaltic pavement placed under the Base Aggregate Dense bid items.

(3) Do not apply this special provision to material placed and paid for under the Aggregate Detours, Breaker Run, Select Crushed, Pit Run, Subbase, or Riprap bid items.

(4) Provide and maintain a quality control program, defined as all activities related to and documentation of the following:

1. Production and placement control and inspection.
2. Material sampling and testing.

(5) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required sampling and testing procedures.
http://wisconsindot.gov/rdwy/cmm/cm-08-00toc.pdf

**A.2 Small Quantities**

(1) The department defines a small quantity, for each individual Base Aggregate bid item, as a contract quantity of 9000 tons or less of material as shown in the schedule of items under that bid item.

(2) The requirements under this special provision apply equally to a small quantity for an individual bid item except as follows:

**A.2.1 Quality Control Plan**

(1) Submit an abbreviated quality control plan consisting of the following:

1. Organizational chart including names, telephone numbers, current certifications with HTCP numbers, and expiration dates, and roles and responsibilities of all persons involved in the quality control program for material under affected bid items.

**A.2.2 Contractor Testing**

1. Testing frequency:

| Contract Quantity | Minimum Required Testing per source |
|---|---|
| ≤ 6000 tons | One stockpile test before placement, and two production or one loadout test. [1] [2] |
| > 6000 tons and ≤ 9000 tons | One stockpile and Three placement tests [3] [4] [5] |

[1] Submit production test results to the engineer for review before incorporating the material into the work. Production test results are valid for a period of 3 years.

[2] If the actual quantity overruns 6,000 tons, on the next day of placement perform one randomly selected placement test for each 3000 tons, or fraction of 3000 tons, of overrun.

*[3]* If the actual quantity overruns 9000 tons, on the next day of placement perform one randomly selected placement test for each 3000 tons, or fraction of 3000 tons, of overrun.

*[4]* For 3-inch material or lift thickness of 3 inch or less, obtain samples at load-out.

*[5]* Divide the aggregate into uniformly sized sublots for testing.

2. Stockpile testing for concrete pavement recycled in place will be sampled on the first day of production.
3. Until a four point running average is established, individual placement tests will be used for acceptance. Submit aggregate load-out and placement test results to the engineer within one business day of obtaining the sample. Assure that all properties are within the limits specified for each test.
4. Material represented by a sublot with any property outside the specification limits is nonconforming. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

**A.2.3 Department Testing**

(1) The department will perform testing as specified in B.8 except as follows:

Department testing may be waived for contract bid item quantities of 500 tons or less.

**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 place base before the engineer reviews and comments on the plan. Construct the project as that plan provides.

(2) Do not change the quality control plan without the engineer's review. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in each of the contractor's laboratories 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 means that will be used, and action time frames.
3. A list of source and processing locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Test results for wear, sodium sulfate soundness, freeze/thaw soundness, and plasticity index of all aggregates requiring QC testing. Obtain this information from the region materials unit or from the engineer.
5. Descriptions of stockpiling and hauling methods.

6. Locations of the QC laboratory, retained sample storage, and where control charts and other documentation is posted.
7. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.

**B.2 Personnel**

(1) Have personnel certified under the department's highway technician certification program (HTCP) perform sampling, testing, and documentation as follows:

| SAMPLING AND TESTING ROLES | TEST STANDARD | REQUIRED CERTIFICATION |
|---|---|---|
| Random Sampling of Materials<br>Sampling Aggregates | ASTM D3665<br>AASHTO T2 [1] | Transportation Materials Sampling Technician (TMS)<br>Aggregate Technician I (AGGTEC-I)<br>AGGTEC-I Assistant Certified Technician (ACT-AGG) |
| Percent passing the 200 Sieve<br>Gradation<br>Moisture Content<br>Fractured Faces | AASHTO T11<br>AASHTO T27<br>AASHTO T255<br>ASTM D5821 | Aggregate Technician I (AGGTEC-I)<br>AGGTEC-I Assistant Certified Technician (ACT-AGG) |
| Liquid and Plasticity Index | AASHTO T89<br>AASHTO T90 | Aggregate Testing for Transportation Systems (ATTS)<br>Grading Technician I (GRADINGTEC-1)<br>Grading Assistant Certified Technician (ACT-Grading) |
| Plasticity Check | AASHTO T90 | Aggregate Technician I (AGGTEC-I)<br>AGGTEC-I Assistant Certified Technician (ACT-AGG) Grading Technician I (GRADINGTEC-1)<br>Grading Assistant Certified Technician (ACT-Grading) |

[1] Plant personnel under the direct observation of an aggregate technician certified at level one or higher may operate equipment to obtain samples.

(2) 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 QC testing at a department-qualified laboratory. Obtain information on the Wisconsin laboratory qualification program from:

Materials Management Section
3502 Kinsman Blvd.
Madison, WI 53704
Telephone: (608) 246-5388
http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/qual-labs.aspx

## B.4 Quality Control Documentation

### B.4.1 General

(1) Submit base aggregate placement documentation to the engineer within 10 business days after completing base placement. Ensure that the submittal is complete, neatly organized, and includes applicable project records and control charts.

### B.4.2 Records

(1) Document all placement observations, inspection records, and control adjustments daily in a permanent field record. Also include all test results in the project records. Provide test results to the engineer within one business day after obtaining a sample. Post or distribute tabulated results using a method mutually agreeable to the engineer and contractor.

### B.4.3 Control Charts

(1) Plot gradation and fracture on the appropriate control chart as soon as test results are available. Format control charts according to CMM 8.30. Include the project number on base placement control charts. Maintain separate control charts for each base aggregate size, source or classification, and type.

(2) Provide control charts to the engineer within one business day after obtaining a sample. Post or distribute charts using a method mutually agreeable to the engineer and contractor. Update control charts daily to include the following:

1. Contractor individual QC tests.
2. Department QV tests.
3. Department IA tests.
4. Four-point running average of the QC tests.

(3) Except as specified under B.8.2.1 for nonconforming QV placement tests, include only QC placement tests in the running average. The contractor may plot process control or informational tests on control charts, but do not include these tests, conforming QV tests, or IA tests in the running average.

## B.5 Contractor Testing

(1) Test gradation, fracture, liquid limit and plasticity index during placement for each base aggregate size, source or classification, and type.

(2) Perform one stockpile test from each source before placement. One stockpile test may be used for multiple projects up to 60 calendar days.

(3) Test gradation once per 3000 tons of material placed or fraction thereof. Determine random sample locations and provide those sample locations to the engineer. Obtain samples after the material has been bladed, mixed, and shaped but before watering and compacting;

except collect 3-inch samples or lift thickness of 3 inch or less from the stockpile at load-out. Do not sample from material used to maintain local traffic or from areas of temporary base that will not have an overlying pavement. On days when placing only material used to maintain local traffic or only temporary base that will not have an overlying pavement, no placement testing is required.

(4) Split each contractor QC sample and identify it according to CMM 8.30. Retain the split for seven calendar days in a dry, protected location. If requested for department comparison testing, deliver the split to the engineer within one business day.

(5) The engineer may require additional sampling and testing to evaluate suspect material or the technician's sampling and testing procedures.

(6) Test fracture for each gradation test until the fracture running average is above the lower warning limit. Subsequently, the contractor may reduce the frequency to one test per 10 gradation tests if the fracture running average remains above the warning limit.

(7) Test the liquid limit and plasticity index for the first gradation test. Subsequently, test the liquid limit and plasticity index a minimum of once per 10 gradation tests.

## B.6 Test Methods

### B.6.1 Gradation

(1) Test gradation using a washed analysis conforming to the following as modified in CMM 8.60:

Gradation.....AASHTO T 27

Material finer than the No. 200 sieve.....AASHTO T 11

(2) For 3-inch base, if 3 consecutive running average points for the percent passing the No. 200 sieve are 8.5 percent or less, the contractor may use an unwashed analysis. Wash at least one sample out of 10. If a single running average for the percent passing the No. 200 sieve exceeds 8.5 percent, resume washed analyses until 3 consecutive running average points are again 8.5 percent passing or less.

(3) Maintain a separate control chart for each sieve size specified in standard spec 305 or standard spec 310 for each base aggregate size, source or classification, and type. Set control and warning limits based on the standard specification gradation limits as follows:

1. Control limits are at the upper and lower specification limits.
2. There are no upper warning limits for sieves allowing 100 percent passing and no lower control limits for sieves allowing 0 percent passing.
3. Dense graded warning limits, except for the No. 200 sieve, are 2 percent within the upper and lower control limits. Warning limits for the No. 200 sieve are set 0.5 percent within the upper and lower control limits.
4. Open graded warning limits for the 1-inch, 3/8-inch, and No. 4 sieves are 2 percent within the upper and lower control limits. Upper warning limits for the No. 10, No. 40, and No. 200 sieves are 1 percent inside the upper control limit.

### B.6.2 Fracture

(1) Test fracture conforming to CMM 8.60. The engineer will waive fractured particle testing on quarried stone.

(2) Maintain a separate fracture control chart for each base aggregate size, source or classification, and type. Set the lower control limit at the contract specification limit, either specified in another special provision or in table 301-2 of standard spec 301.2.4.5. Set the lower warning limit 2 percent above the lower control limit. There are no upper limits.

### B.6.3 Liquid Limit and Plasticity

(1) Test the liquid limit and plasticity according to AASHTO T 89 and T 90.
(2) Ensure the material conforms to the limits specified in standard spec table 301-2.

## B.7 Corrective Action

### B.7.1 General

(1) Consider corrective action when the running average trends toward a warning limit. Take corrective action if an individual test exceeds the contract specification limit. Document all corrective actions both in the project records and on the appropriate control chart.

### B.7.2 Placement Corrective Action

(1) Do not blend additional material on the roadbed to correct gradation problems.
(2) Notify the engineer whenever the running average exceeds a warning limit. When two consecutive running averages exceed a warning limit, the engineer and contractor will discuss appropriate corrective action. Perform the engineer's recommended corrective action and increase the testing frequency as follows:

1. For gradation, increase the QC testing frequency to at least one randomly sampled test per 1000 tons placed.
2. For fracture, increase the QC testing frequency to at least one test per gradation test.

(3) If corrective action improves the property in question such that the running average after four additional tests is within the warning limits, the contractor may return to the testing frequency specified in B.5.3. If corrective action does not improve the property in question such that the running average after four additional individual tests is still in the warning band, repeat the steps outlined above starting with engineer notification.
(4) If the running average exceeds a control limit, material starting from the first running average exceeding the control limit and ending at the first subsequent running average inside the control limit is nonconforming and subject to pay reduction.
(5) For individual test results significantly outside the control limits, notify the engineer, stop placing base, and suspend other activities that may affect the area in question. The engineer and contractor will jointly review data, data reduction, and data analysis; evaluate sampling and testing procedures; and perform additional testing as required to determine the extent of potentially unacceptable material. The engineer may direct the contractor to remove and replace that material. Individual test results are significantly outside the control limits if meeting one or more of the following criteria:

1. A gradation control limit for the No. 200 sieve is exceeded by more than 3.0 percent.
2. A gradation control limit for any sieve, except the No. 200, is exceeded by more than 5.0 percent.
3. The fracture control limit is exceeded by more than 10.0 percent.

## 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 QV and IA personnel for the project, and provide test results to the contractor within two business days after the department obtains the sample.

### B.8.2 Verification Testing

#### B.8.2.1 General

(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 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 conduct QV tests of each base aggregate size, source or classification, and type during placement conforming to the following:

1. Perform one stockpile test from each source before placement.
2. At least one random test per 30,000 tons, or fraction of 30,000 tons, placed.

(3) The department will sample randomly, at locations independent of the contractor's QC work, collecting one sample at each QV location. The department will collect QV samples after the material has been bladed, mixed, and shaped but before watering and compacting; except, for 3-inch aggregates or for a lift thickness of 3 inch or less, the department will collect samples at load-out. The department will split each sample, test half for QV, and retain half.

(4) The department will conduct QV 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 the specification, the department will take no further action. If QV test results are nonconforming, add the QV to the QC test results as if it were an additional QC test.

### B.8.3 Independent Assurance

(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 B.9.

**B.9 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, 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 (Vacant)**

**D (Vacant)**

**E Payment**

(1) Costs for all sampling, testing, and documentation required under this special provision are incidental to this 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.

(2) For material represented by a running average exceeding a control limit, the department will reduce pay according to CMM 8-10.5.2 for the affected Base Aggregate bid items listed in subsection A. The department will administer pay reduction under the Nonconforming QMP Base Aggregate Gradation or Nonconforming QMP Base Aggregate Fracture Administrative items. The department will determine the quantity of nonconforming material as specified in B.7.2.

stp-301-010 (20171130)

## 65. Base Aggregate Dense 1¼-Inch for Lower Base Layers.

*Replace standard spec 305.2.2.1(2) with the following:*

1. Use 1¼-inch base throughout the full base depth.
2. Use ¾-inch base in the top 3 inches of the unpaved portion of shoulders. Use ¾-inch base or 1¼-inch base elsewhere in shoulders.

stp-305-020 (20080902)

## 66. 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)

## 67. Rubblizing.

*Supplement standard spec 335 with the following:*

Due to moisture-sensitive subgrade beneath the existing pavement from IH 94 Station 1125+00 to 1130+00 Northbound, coordinate the rubblizing, base aggregate, and paving operations to minimize exposure of the subgrade to adverse weather.

## 68. Concrete Pavement Approach Slab.

When adjacent to Concrete Pavement 12-Inch Special, Concrete Pavement Approach Slabs on I-94 North/South Corridor will require high performance dowel bars conforming to the special provision Concrete Pavement 12-Inch Special.
sef-415-010 (20170310)

## 69. Concrete Pavement Joint Layout 1030-11-72, Item 415.5110.S.002; 1030-11-79, Item 415.5110.S.004; 1030-11-80, Item 415.5110.S.006; 1030-25-79, Item 415.5110.S.008.

**A Description**
This special provision describes providing a concrete pavement or concrete base joint layout design for intersections and marking the location of all joints in the field

**B (Vacant)**

**C Construction**
Plan and locate all points necessary to establish the horizontal position of the transverse and longitudinal joints in the concrete to prevent uncontrolled cracking. Submit a joint layout design to the engineer at least 7 calendar days before paving each intersection. Do not lay out joints until the engineer has reviewed the joint layout design. Mark the location of all concrete joints in the field. Follow the plan details for joints in concrete making adjustments as required to fit field conditions.

**D Measurement**
The department will measure Concrete Pavement Joint Layout as a single lump sum unit for all joint layout designs and marking, 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 |
|---|---|---|
| 415.5110.S.002 | Concrete Pavement Joint Layout 1030-11-72 | LS |
| 415.5110.S.004 | Concrete Pavement Joint Layout 1030-11-79 | LS |
| 415.5110.S.006 | Concrete Pavement Joint Layout 1030-11-80 | LS |
| 415.5110.S.008 | Concrete Pavement Joint Layout 1030-25-79 | LS |

Payment is full compensation for providing the intersection joint layout designs and marking all joints in the field.

The department will adjust pay for crack repairs as specified in standard spec 415.5.3
stp-415-020 (20170615)

## 70. Asphaltic Mixture For Extreme Conditions, Item 450.1100.S.

**A Description**
This special provision assigns 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:

- Northern Asphalt Zone: between November 1 and April 15 inclusive.
- Southern Asphalt Zone: between November 15 and April 1 inclusive.
- When ambient temperatures are less than 36 degrees Fahrenheit for upper layers, 32 degrees Fahrenheit for lower layers, and the contractor is asked to pave.

This special provision applies only to following work:

| DESCRIPTION | LOCATION |
|---|---|
| Emergency Repairs | Shoulders and Temporary Transitions |
| Asphaltic Surface Temporary | Pavement Repair Locations |

**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 SPV items if that work conforms to an engineer-accepted cold weather paving plan.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 450.1100.S | Asphaltic Mixture For Extreme Conditions | TON |

Payment for Asphaltic Mixture For Extreme Conditions is full compensation for additional materials and equipment required for operations in extreme conditions for work specified in A.

The department will not assess disincentives for density or ride deficiencies attributed 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, associated special provisions. The department will not pay separately for the HMA Cold Weather Paving bid item for work specified in A.
450-010 (20170615)

## 71. 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 type MT 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)

## 72. Cold Patch, Item 495.1000.S.

**A Description**
This special provision describes furnishing cold patch and filling potholes and other voids in existing pavement surfaces as the engineer directs.

**B Materials**
Furnish a mixture of course aggregate, natural sand, and MC-250 bituminous material designed to have a workability range of 15-100º F without heating. Ensure that the mixture:

- Adheres to wet surfaces.
- Resists damage from water, salt, and deicing products.
- Requires no mixing or special handling before use.
- Supports traffic immediately after placement and compaction.

Conform to the following gradation:

| SIEVE SIZE | PERCENT PASSING (by weight) |
|---|---|
| 1/2-inch (12.5 mm) | 100 |
| 3/8-inch (9.5 mm) | 90 - 100 |
| No. 4 (4.75 mm) | –90 max |
| No. 8 (2.38 mm) | 20 - 65 |
| No. 200 (0.074 mm) | 2 - 10 |
| Bitumen | 4.8 - 5.4 |

The department will accept cold patch based primarily on the engineer's visual inspection. The department may also test for gradation.

**C Construction**
Stockpile cold patch on site on a smooth, firm, well-drained area cleared of vegetation and foreign material. Cover the stockpile and ensure that it is easily accessible. Replenish the stockpile throughout the project duration, but limit the size at any given time to 10 tons on site unless the engineer approves otherwise. Dispose of unused material at project completion unless the engineer directs otherwise.

Place cold patch by hand. Remove ponded water and loose debris before placement. Compact flush with a tamper, roller, or vehicle tire after placement.

Refill patched areas as necessary to maintain a flush pavement surface until project completion.

**D Measurement**
The department will measure Cold Patch by the ton, acceptably stockpiled on site.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 495.1000.S | Cold Patch | TON |

Payment for Cold Patch is full compensation for providing and maintaining patches; for furnishing and replenishing stockpiled material on-site; and for disposing of excess material at project completion.
stp-495-010 (20160607)

## 73. Cold Weather Concrete Plan.

A minimum of 15 working days prior to placing concrete, submit to the engineer a cold weather concrete plan for placing concrete below 40 F. Obtain the engineer's acceptance for all revisions made to the cold weather concrete plan. The plan shall include, but is not limited to, all of the following:

1. Method the contractor will utilize to thaw frozen ground or base to in accordance with the contract and/ or prevent the grade from freezing.
2. Method the contractor will utilize to monitor strength and temperature of concrete until strength is achieved and the protection is removed.
3. Method the contractor will utilize to ensure reinforcing steel and steel forms are kept at a temperature in accordance with the contract for all applicable pay items.
4. Identify the insulating protection methods to maintain a concrete temperature in accordance with the contract throughout the protection period. Curing compound should not be placed until after the protection period has ended.
5. Method the contractor will utilize to maintain concrete temperatures in accordance with the contract at the point of placement.

Engineer acceptance of the plan does not relieve the contractor of responsibility for the quality of concrete placed in cold weather.

## 74. 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 in accordance with ASTM C 1315.8.7.6 Yellowing Resistance.

## 75. 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 |
| 502.0200 | Concrete Masonry Bridges HES |
| 504.0100 | Concrete Masonry Culverts |
| 504.0200 | Concrete Masonry Culverts HES |
| 504.0500 | Concrete Masonry Retaining Walls |
| 504.0600 | Concrete Masonry Retaining Walls HES |
| 504.0900 | Concrete Masonry Endwalls |

### 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 Bridges HES
- Concrete Masonry Retaining Walls
- Concrete Masonry Retaining Walls HES
- Concrete Masonry Culverts
- Concrete Masonry Culverts HES
- Concrete Masonry Endwalls

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:*

**501.3.11 Slip Forming**
Do not place concrete by the slip-form method for any item covered by this special provision.

**D (Vacant)**

**E (Vacant)**

sef-504-005 (20180104)

## 76. 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 |

High Performance Concrete (HPC) Masonry Structures

*Replace standard spec 501.4 and 501.5 with the following:*

**501.4 Measurement**

(1) The department will measure Ice Hot Weather Concreting by the pound, acceptably completed, measured only if the conditions prescribed in standard spec 501.3.8.2 are met.

**501.5 Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 501.1000.S | Ice Hot Weather Concreting | LB |

(2) Payment for Ice Hot Weather Concreting is full compensation for ice used to cool concrete placed in hot weather as specified in standard spec 501.3.8.2.

(3) The department will not pay directly for the concrete specified under this section. Concrete is incidental to the various bid items using it. Payment under those bid items includes providing all materials, including aggregates and associated aggregate source testing, cement, fly ash, slag, and admixtures; for preparing, transporting, storing, protecting and curing concrete; and for contractor requirements related to testing specified in standard spec 501.3.10.

(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 (20151210)

## 77. Concrete Maturity Testing.

**A Description**

This special provision requires using concrete maturity testing to determine strength for project control of concrete pavement, falsework removal, and structural concrete under the designated standard specs as follows:

Duration of the curing period.....415.3.12
Duration of the cold weather protection period.....415.3.13
Opening to service.....415.3.15
Removing falsework.....502.3.4.2
Duration of the required curing period.....502.3.8
Duration of the cold weather protection period.....502.3.9
Opening to service.....502.3.10.1

The requirement for determining strength by the concrete maturity testing method supersedes all provisions for strength determination by other methods or provisions based on equivalent days within those designated subsections. The concrete maturity testing requirement also applies to all other provisions referencing strength determination under these designated subsections.

**B Materials**

Provide a maturity testing system that uses data-encrypted sensor devices permanently embedded in the field-placed concrete. Data-encrypted sensors have a chip that records both temperature and time information that can be downloaded to a reading device not permanently attached to those sensors.

Provide the department with a maturity reading device for each maturity testing system used on the project. Devices provided for the department use will become department property under the contract.

**C Construction**

Perform concrete maturity testing conforming to standard spec 502.3.10.1.3.3. Develop a strength/maturity relationship for each concrete mix design used under the contract. Base that relationship on strength results of cylinders from pavement, appurtenant construction, ancillary concrete, or structural masonry units incorporated into the work and using those same mixes.

**D (Vacant)**

**E Payment**

No additional payment will be made by the department for maturity testing.

sef-502-005 (20170310)

## 78. Precast Pier Columns; Precast Pier Caps.

**A Description**

The contractor may furnish a precast concrete pier in lieu of the cast-in-place pier detailed in the plans. If the contractor elects to utilize precast piers, the contents of this special provision shall govern the work.

This special provision describes the manufacture, transportation, storage, installation and bracing as required for precast pier columns and precast pier caps.

Precast materials shall meet the specifications of the PCI Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products, MNL-116.

The work governed by this specification shall also include the furnishing and installation of any appurtenant items necessary for transportation, handling, storage and erection.

Conform to standard spec 501, 502 and 503 as further modified in this special provision.

If the substructure elements are to be cast in a commercial precast plant, the plant shall be on the WisDOT approved list of Precast Concrete Certified Producers for Category C, Special Structures.

Alternately, the bridge contractor may elect to precast the substructure elements in their yard or at the project site. If this option is used, inspection by the project staff shall be required as the engineer directs. Provide concrete conforming to standard spec 502 as modified in standard spec 715. Provide QMP for precast concrete as specified in standard spec 715.

## B Materials

The contractor shall make all arrangements to fabricate, supply, and install the precast pier columns and precast pier caps including all necessary incidentals for construction of the proposed superstructure.

### B.1 Concrete

The contractor/supplier shall submit a concrete mix design, developed conforming to standard spec 503.2.2, to the engineer for approval. Obtain approval from the engineer for the mix design prior to starting production of the elements. The contractor/supplier shall allow for a 14-day review period by the engineer after the submittal of the concrete mix design.

Concrete for the precast pier columns and precast pier caps shall conform to standard spec 501, in addition to the following requirements for the concrete:

- 4,000 psi, minimum final design strength at 28 days, and before shipping.
- 3/4-inch maximum aggregate size.
- 6%-8% air entrainment.
- 0.40 maximum w/c ratio

Ensure concrete attains the required strengths above per standard spec 503.2.2.

### B.2 Mild Reinforcing Steel

Furnish mild bar reinforcing steel conforming to standard spec 505.

### B.3 Non-Shrink Grout

Use structural, gray, non-shrink grout for joints between pier footing and pier column, pier column and pier cap and for joints between pier cap units (if applicable), as shown on the plans. Non-shrink grout shall be quick-setting, rapid strength gain, high-bond strength grout. Grout shall not contain calcium chloride or admixture containing calcium chloride or other ingredient in sufficient quantity to cause corrosion to steel reinforcement. Grout shall be nonmetallic. Mix grout just prior to use according to the manufacturer's instructions. Use grout supplied by the coupler manufacturer or a product from WisDOT's approved product list.

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 T160 with the exception that the contractor-supplied cube molds shall 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 Requirements**

| *Property: | Requirement (ASTM / AASHTO) |
|---|---|
| Accelerated Weathering: | As Specified in ASTM or AASHTO (C666 / T260) |
| Compressive Strength: | >5,000 psi @ 28 days (T106) |
| Accepted Bond Strengths: | >1,000 psi @ 24 Hours (C882) |
| Test Medium: | <3% Sodium Chloride (T161) |
| Accepted Weight Loss: | <15% @ 300 Cycles (T161) |
| Length Change: | No expansion after 7 days (T160) |

**B.4 Pier Column and Pier Cap Manufacturing**
Fabricate precast pier columns and pier caps to the following tolerances:

Length = ±1/2 inch
Width = ±1/4 inch
Depth = ±1/4 inch
Cover = +1/4, -0 inch
Sweep = ±1/4 inch
Variation from specified plan end squareness or skew = ± 1/4 inch

**B.5 Grouted Bar Couplers**
Provide grouted bar couplers used to provide a moment connection to the cast-in-place concrete footings and at the interface of the precast concrete pier columns to the precast concrete pier caps according to the "Grouted Bar Couplers" article.

**C Construction**
**C.1 Sequence of Work**
Develop the detailed sequence of work tasks to be performed and submit them with the shop drawings. The engineer shall obtain the work plan and all project-related approvals before the existing bridge can be removed (if applicable).

**C.2 Lifting Anchors**
The precast fabricator shall submit lifting locations and lifting anchor details for approval by the engineer prior to use. The top of the lifting anchors shall be recessed ½-inch minimum from the surface of the precast element. The lifting anchors shall be hot-dipped galvanized. Lifting anchors cast into the precast elements shall be used for lifting and moving the precast elements at the fabrication plant and in the field. The angle between the top surface of the precast elements and the lifting line shall not be less than 60 degrees, when measured from the top surface of the precast elements to the lifting line. Damage caused to any precast elements shall be repaired at the expense of the contractor to the satisfaction of the engineer.

**C.3 Handling, Storage, and Shipping**
The contractor may provide additional reinforcement to ensure crack-free pier column and pier cap installation, which is incidental to the cost of the precast pier columns and precast pier caps. It is the responsibility of the contractor to handle, store, ship, and erect the pier

columns and pier caps in a crack-free manner. “Crack-free” is defined as not having more than one crack every 25 square feet, the width of which does not exceed 0.008”.

All precast elements shall be removed from the forms in such a manner that no damage occurs to the element. Any materials forming blockouts in the precast elements shall be removed such that damage does not occur to the precast elements or the blockout.

All storage of precast pier columns and precast pier caps, either before shipment to the bridge site or at the bridge site, shall be such that they are supported in a manner that will minimize deflection but also in a manner that will not induce forces that cause cracking. During storage for long periods of time (longer than one month), all precast elements shall be checked at least once per month to ensure creep-induced deformation does not occur.

The engineer will inspect the finished columns and cap for cracking and evaluate the severity of the cracks prior to on-site placement. Repair cracks as directed by the engineer. Crack repair is at the expense of the contractor. This inspection is independent of the inspections required by standard spec 502 and 503.

**C.4 Shop Drawings**
Submit detailed shop drawings, which include, but are not limited to:

1. Complete description of the details covering each of the precast pier columns and precast pier caps units. This shall include:
    - Complete geometric layouts for each precast segment, including mild reinforcement layout.
    - Step by step erection procedure of precast pier columns and precast pier caps, including method and timing of column and cap bracing and temporary support.
    - Detailed methods for column and cap handling and transporting to/at the site.
    - Detailed locations and methods of installation of the grouted bar couplers used to provide a moment connection to the cast-in-place concrete footings and at the interface of the precast concrete pier columns to the precast concrete pier caps.
    - Detailed methods of forming for grout filling on site.
    - Safety procedures to be followed.

2. Calculations for supplemental reinforcement for handling, erection, and operation. The contractor may request to modify the precast section or unit size, pier cap grouted bar coupler details, or joint details from that listed in the plans. However, the contractor must submit shop drawings accurately portraying these revisions for approval, complying with the below requirements:
    - All modifications must take into account revisions to handling, storage, shipping, and erection stresses, and consequently possible revisions in the mild steel reinforcement.

- The materials, devices, systems, and operations shall comply with all conditions in this special provision and the design criteria as indicated on the plans.
- If the design does not comply with the above requirements, calculations and correspondence prepared by a registered professional engineer in the State of Wisconsin shall be submitted to the engineer for approval justifying the areas of non-compliance.
- The modification shall result in no net increase in cost to the Owner, or result in an extension of the construction schedule.

Submit all information sufficiently in advance of the start of construction to allow the engineer an average 45-calendar day review period, but not less than a 30-calendar day review period. The review period shall begin on the day of receipt of the submittal in the office of the engineer. All submittals not approved and requiring resubmittal shall be subject to the above review time periods, with the review time beginning anew for each such submittal. Coordinate all submittals between various subordinates (contractors, suppliers, and engineers) to allow for a reasonable distribution of the review effort required by the engineer at any given time. Receive final approval before any fabrication begins. Furnish all shop drawings as per all applicable requirements of standard spec 506.3.2. Supply manufacturer's literature where applicable. All shop drawings are to accurately detail the actual methods, materials, equipment, etc., that the contractor will be using in the field on the project. Do not deviate unless approved by the engineer.

**C.5 Grouted Bar Couplers**
**Filling**
Complete the installation of the grouted bar couplers conforming to the "Grouted Bar Couplers" article.

Create matching templates for precisely locating/orientating the bar couplers and provide them to the contractor for aligning/orientating reinforcing bars in the cast-in-place concrete footings.

**C.6 Erection**
Erect the precast pier columns and pier caps to the following tolerances:

Erection tolerance on elevation = ±1/4 inch
Erection tolerance on beam seat elevation = ±1/8 inch (May be set high and ground to specified elevation)

## 79. Grouted Bar Couplers.

**A Description**
The contractor may furnish a precast concrete pier in lieu of the cast-in-place pier detailed in the plans. If the contractor elects to utilize precast piers, the contents of this special provision shall govern the work.

This special provision describes furnishing and installing grouted bar couplers at the interface of the cast-in-place concrete pier footings and the precast concrete pier columns, and at the interface of the precast concrete pier columns to the precast concrete pier caps.

## B Materials

### B.1 Submittals

Submit an independent test report confirming the compliance of the coupler, for each supplied coupler size, with the following requirements:

- Develop 100 percent of the specified ultimate tensile strength (Fu) of the attached Grade 60 reinforcing bar. This equates to 90 ksi bar stress for an ASTM A615 bar.
- The amount of time to achieve a minimum of 100 percent of the specified yield strength of the attached reinforcing bars which corresponds to the expected ambient temperature at installation. This value shall be used to develop the assembly plan timing. This data shall be the result of lab testing as performed by an approved testing laboratory.

Submit the specification requirements for the grout including required strength gain to develop the specified minimum yield strength of the connected reinforcing bar.

### B.2 Material Requirements

Use grouted splice couplers to join cast-in-place concrete pier footings to precast concrete pier columns and precast concrete pier columns to the precast concrete pier caps as shown on the plans.

Provide couplers that use cementitious grout placed inside a steel casting.

Threaded connections may be used for the portions of the coupler that are placed within the precast element if the strength of the coupler meets or exceeds the requirements of this specification.

The following grouted bar couplers are acceptable for use provided that the requirements of this specification are met.

NMB Splice Sleeve
Splice Sleeve North America, Inc.
192 Technology Drive, Suite J,
Irvine, California 92618-2409

Dayton Superior Sleeve-Lock Grout Sleeve
Dayton Superior
Corporate Headquarters
7777 Washington Village Dr., Ste. 130
Dayton, OH 45459

Erico Lenton Interlok
ERICO United States
34600 Solon Road
Solon, Ohio 44139

Or approved equal

Use grouted bar couplers that are epoxy coated and can join epoxy coated reinforcing steel without removal of the epoxy coating on the spliced bar. Any exposed areas of reinforcing steel bars or grouted bar coupler sleeves where the epoxy coating has been damaged shall be touched up per the manufacturer requirements and conforming to standard spec 505.

Use grouted bar couplers that can provide 100 percent of the specified minimum tensile strength of the connecting Grade 60 reinforcing bar. This equates to 90 ksi for reinforcing conforming to ASTM A615.

Supply grout for the inside of the couplers from the coupler manufacturer. The grout must match the certified test report for the coupler. Do not substitute any other grout in the couplers unless additional certified test reports are submitted for the grout/coupler system.

## C Construction

### C.1 Quality Assurance

The performance of grouted splice couplers is related to the embedment length of the bars and the compressive strength of the grout. The following requirements for grouted splice couplers shall be met:

- The length of rebar anchor dowel must meet the minimum embedment specified in the manufacturer's manual.
- The reinforcing extensions between the precast elements must be within the manufacturers recommended tolerances.
- Grout mixing, water to grout ratio, mixing time, and shelf life of the grout must conform with the manufacturers written instructions.
- All sleeves must be completely filled with grout.
- Make four sets of three - 2 inch grout cubes utilizing heavy brass molds with cover plates for testing according to AASHTO T 106. Cure the specimens according to AASHTO T 106. Test one set of cubes for compressive strength at a minimum of 24 hours (or to determine when to release bracing) and 28-days. Store extra sets for longer term testing, if necessary. Tests shall be according to ASTM C109 and C942.
- Protect all sleeves from any vibration, shock, or other excessive movement until temporary bracing is removed.
- The temperature of the sleeve at the time of grouting and during curing must exceed 50°F.

### C.2 General Procedure for Making Connection using Grouted Bar Couplers

Use personnel that are familiar with installation and grouting of splice couplers that have completed at least two successful projects in the last two years. Provide documentation proving these requirements have been met. Training of new personnel within three months

of installation by a manufacturer's technical representative is an acceptable substitution for this experience.

Remove and clean all debris from the joints prior to application of non-shrink grout.

Keep bonding surfaces free from laitance, dirt, dust, paint, grease, oil, or any contaminants other than water.

All joint surfaces must be Saturated Surface Dry (SSD) prior to connecting the precast elements.

Use heaters to maintain a minimum temperature of 50°F for the grouted bar couplers. Monitor the temperature of the covered sleeves until the temporary bracing is removed.

Follow the recommendations of the manufacturer for the installation and grouting of the couplers. The general procedures are as follows:

- Determine the thickness of shims to provide the specified elevation within tolerance.
- Prepare, mix and apply the non-shrink grout according to the supplier's recommendations.
- Place non-shrink grout on the interface between the cast-in-place concrete pier footings and the precast concrete pier columns and at the interface of the precast concrete pier columns to the precast concrete pier caps. Crown the thickness of the grout toward the center of the joint so that the grout can be displaced outward as the precast element is lowered onto the joint. Take precautions to prevent the non-shrink grout from entering the coupler above (e.g. grout dams or seals).
- Set the precast element in place. Engage all couplers in the joint. Allow the non-shrink grout to seep out of the joint.
- Trowel off excess non-shrink grout to form a neat joint once the precast element is set, plumbed, and aligned. Pack grout into any voids around the joint perimeter.
- Flush out the coupler with clean potable water.
- Mix the coupler grout according to the manufacturer's recommendations for methods and proportions of mix and water.
- Make four sets of three 2-inch cube specimens for testing, as described in section C.1
- A minimum temperature of 50°F must be maintained in the grouted bar coupler during placing and curing until the full compressive strength of the grout is achieved, per the manufacturer requirements.
- Pump the coupler grout into the coupler that is cast into the precast element. Start from the lower port. Pump until the grout is flowing freely from the upper port.
- Cap the upper port first and then remove the nozzle to cap the lower port. Proceed to the next coupler in a defined sequence.
- Cure the joint according to the non-shrink grout manufacturer's recommendations.

## 80. Bar Steel Reinforcement HS Stainless Structures, Item 505.0800.S.

### A Description

This special provision describes furnishing and placing stainless steel reinforcing bars and associated stainless steel bar couplers.

Conform to standard spec 505 as modified in this special provision.

### B Materials

#### B.1 General

Furnish stainless steel reinforcing bars conforming to ASTM A955 and to one of the following Unified Numbering System (UNS) designations: S31653, S31803, S32205, or S32304. Supply grade 60 bars, all of the same UNS designation. Conform to the chemical composition specified for the given UNS designation in ASTM A276 table 1.

Supply bars that are free of dirt, mill scale, oil, and debris by pickling to a bright or uniform light finish. The department may reject bars displaying rust/oxidation, questionable blemishes, or lack of a bright or uniform pickled surface.

Furnish chairs or continuous supports made of stainless steel or recycled plastic to support high-strength stainless bar steel reinforcement subject to the plastic chair restriction stated in standard spec 505.3.4(1).

Furnish couplers made from one of the UNS alloys allowed for bar steel.

Furnish tie wire made from one of the UNS alloys allowed for bar steel or from an engineer-approved plastic or nonmetallic material. Ensure that stainless steel tie wire is dead soft annealed.

#### B.2 Fabrication

Before fabrication, supply test results from an independent testing agency certifying that the reinforcement meets the requirements of Annex A1 of ASTM A955.

Bend bars conforming to standard spec 505.3.2 and according to ASTM A955. Bend and cut bars using equipment thoroughly cleaned or otherwise modified to prevent contamination from carbon steel or other contaminants. Use tools dedicated solely to working with stainless steel.

#### B.3 Control of Material

Identify reinforcement bars delivered to the project site with tags bearing the identification symbols used in the plans. Include the UNS designation, heat treat condition, heat number, grade corresponding to minimum yield strength level, and sufficient documentation to track each bar bundle to a mill test report.

Provide samples for department testing and acceptance according to CMM 8-50 Exhibit 1 requirements for concrete masonry reinforcement for uncoated bar steel.

Provide mill test reports for the project that do the following:

1. Verify that sampling and testing procedures and test results conform to ASTM A955, ASTM A276 table 1, and these contract requirements.
2. Include a chemical analysis with the UNS designation, heat lot identification, and the source of the metal.
3. Include tensile strength, yield strength, and elongation tests results conforming to ASTM A955 for each size furnished.
4. Certify that the bars have been pickled to a bright or uniform light finish.

## C Construction

### C.1 General

Ship, handle, store, and place the stainless steel reinforcing as follows:

1. Separate from regular reinforcement during shipping. Pad points of contact with steel chains or banding, or secure with non-metallic straps.
2. Store on wooden cribbing separated from regular reinforcement. Cover with tarpaulins if stored outside.
3. Handle with non-metallic slings.
4. Do not flame cut or weld. Protect from contamination when cutting, grinding, or welding other steel products above or near the stainless steel during construction.
5. Place on plastic or stainless steel bar chairs. If placing stainless steel chairs on steel beams, use chairs with plastic-coated feet.
6. Tie with stainless steel wire or an engineer-approved plastic or nonmetallic material.

Do not tie stainless steel reinforcing bars to, or allow contact with, uncoated reinforcing bars or galvanized steel. Maintain at least 1-inch clearance between stainless steel bars or dowels and uncoated or galvanized steel. Where 1-inch clearance is not possible, sleeve bars with a continuous polyethylene or nylon tube at least 1/8-inch thick extending at least 1 inch in each direction and bind with nylon or polypropylene cable ties. Sleeves are not required between stainless steel bars and shear studs. Stainless steel bars can be in direct contact with undamaged epoxy-coated bars.

Cut flush with the top flange or remove uncoated fasteners, anchors, lifting loops, or other protrusions into a bridge deck before casting the deck on prestressed concrete beams.

### C.2 Splices

Splice as the plans show. Provide stainless steel couplers conforming to the minimum capacity, certification, proof testing, and written approval requirements of standard spec 550.3.3.4. The contractor may substitute stainless steel couplers for lap slices the plans show if the engineer approves in writing.

If increasing or altering the number or type of bar splices the plans show, provide revised plan sheets to the engineer showing the reinforcement layout, type, length, and location of revised bar splices and revised bar lengths. Obtain engineer approval for the location of new lap splices or substitution of mechanical bar couplers before fabrication. Ensure that new lap splices are at least as long as those the plans show.

**D Measurement**

The department will measure Bar Steel Reinforcement HS Stainless Structures by the pound acceptably completed, computed from the nominal weights of corresponding sizes for carbon steel deformed bars in AASHTO M31 regardless of stainless steel alloy provided. The department will not measure extra material used if the contractor alters the reinforcement layout as allowed under C.2, extra material for splices or couplers the plans do not show, or the weight of devices used to support or fasten the steel in position.

The department will measure the Bar Couplers Stainless bid items as each individual coupler, acceptably completed.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 505.0800.S | Bar Steel Reinforcement HS Stainless Structures | LB |

Payment for Bar Steel Reinforcement HS Stainless Structures is full compensation for furnishing and placing stainless steel reinforcing bars, including supports. Where the plans specify bar couplers, the department will pay for the length of bars as detailed with no deduction or increase for installation of the coupler.

Payment for the Bar Couplers Stainless bid items is full compensation for providing couplers; including bar steel that is part of the coupler and not detailed in the plan; for threading reinforcing bars; for installing and coating the splice; and for supplying and testing 3 couplers.

stp-505-005 (20141107)

## 81. Concrete Staining B-51-134, Item 517.1010.S.405; B-51-135, Item 517.1010.S.406; B-51-136, Item 517.1010.S.407; B-51-137, Item 517.1010.S.408; B-51-132, Item 517.1010.S.419; B-51-133, Item 517.1010.S.420; R-51-57, Item 517.1010.S.430; R-51-58, Item 517.1010.S.431; R-51-53, Item 517.1010.S.440; R-51-54, Item 517.1010.S.441; R-51-55, Item 517.1010.S.442; R-51-56, Item 517.1010.S.443; S-51-222, Item 517.1010.S.449; S-51-223, Item 517.1010.S.450.

**A Description**

Furnish and apply a two coat concrete stain to the exposed concrete surfaces of the structure, as detailed in the plans and as hereinafter provided.

## B Materials

### B.1 Mortar

Use mortar for sack rubbing the concrete surfaces as given in standard spec 502.3.7.5 or use one of the following products:

| | |
|---|---|
| Preblended, Packaged Type II Cement: | Tri-Mix by TK Products |
| | Thoroseal Pearl Gray by Thoro Products |

The mortar shall contain one of the following acrylic bonding admixtures mixed and applied according to manufacturer's recommendations:

| | |
|---|---|
| Acrylic Bonding Admixture: | TK-225 by TK Products |
| | Achro 60 by Thoro Products |
| | Achro Set by Master Builders |

### B.2 Concrete Stain

Use concrete stain manufactured for use on exterior concrete surfaces, consisting of a base coat and a pigmented sealer finish coat. Use the following products, or equal as approved by the department, as part of the two coat finish system:

Tri-Sheen Concrete Surfacer, Smooth by TK Products
Tri-Sheen Acrylic by TK Products
TK-1450 Natural Look Urethane Anti-Graffiti Primers by TK Products
Safe-Cure & Seal EPX by Chem Masters
H&C Concrete Stain Solid Color Water Based by Sherwin-Williams

## C Construction

### C.1 General

Furnish, prepare, apply, cure, and store all materials according to the product manufacturer's specifications for the type and condition of application required.

Match or exceed the stain manufacturer's minimum recommended curing time of the concrete or 28 days, whichever is greater, prior to staining.

### C.2 Preparation of Concrete Surfaces

Provide a sack rubbed finish according to standard spec 502.3.7.5, using mortar as indicated above on concrete surfaces with open voids or honeycombing.

Following the sack rubbing, clean all concrete surfaces that are to be coated to ensure that the surface is free of all laitance, dirt, dust, grease, efflorescence, and any foreign material and that the surface will accept the coating material according to product requirements. As a minimum, clean the surface using a 3000-psi water blast. Hold the nozzle of the water blaster approximately 6 inches from the concrete surface and move it continuously in a sweeping motion. Give special attention to smooth concrete surfaces to produce an acceptable surface texture. Correct any surface problems resulting from the surface preparation methods. Grit blasting of the concrete surface is not allowed.

**C.3 Staining Concrete Surfaces**
Apply the concrete stain according to the manufacturer's recommendations.

Apply the concrete stain when the temperature of the concrete surface is 45º F or higher, or as given by the manufacturer.

The color of the stain shall be as given on the plan. Tint the base coat to match the finish coat; the two coats shall be compatible with each other.

Do not begin staining the structure until earthwork operations are completed to a point where this work can begin without receiving damage. Where this work is adjacent to exposed soil or pavement areas, provide temporary covering protection from overspray or splatter.

**C.4 Test Areas**
Prior to applying stain to the structure, apply the stain to sample panels measuring a minimum of 48-inches x 48-inches and constructed to demonstrate workmanship in the use of the form liner specified on the structure if applicable. Match or exceed the stain manufacturer's minimum recommended curing time of the concrete or 28 days, whichever is greater, prior to staining. Prepare the concrete surfaces of the sample panels and apply stain using the same materials and in the same manner as proposed for the structure, including staining of the joints between the stones produced by the form liner if applicable. Do not apply stain to the structure until the department approves the test panels.

**C.5 Surfaces to be Coated.**
Apply concrete stain to the surfaces according to the plan.

**D Measurement**
The department will not measure Concrete Staining (Structure). The department will use pay plan quantity conforming to standard spec 109.1.1.2.

**E Payment**
The department will pay for plan quantities conforming to standard spec 109.1.1.2 at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 517.1010.S.405 | Concrete Staining B-51-134 | SF |
| 517.1010.S.406 | Concrete Staining B-51-135 | SF |
| 517.1010.S.407 | Concrete Staining B-51-136 | SF |
| 517.1010.S.408 | Concrete Staining B-51-137 | SF |
| 517.1010.S.419 | Concrete Staining B-51-132 | SF |
| 517.1010.S.420 | Concrete Staining B-51-133 | SF |
| 517.1010.S.430 | Concrete Staining R-51-57 | SF |
| 517.1010.S.431 | Concrete Staining R-51-58 | SF |
| 517.1010.S.440 | Concrete Staining R-51-53 | SF |
| 517.1010.S.441 | Concrete Staining R-51-54 | SF |
| 517.1010.S.442 | Concrete Staining R-51-55 | SF |

| | | |
|---|---|---|
| 517.1010.S.443 | Concrete Staining R-51-56 | SF |
| 517.1010.S.449 | Concrete Staining S-51-222 | SF |
| 517.1010.S.450 | Concrete Staining S-51-223 | SF |

Payment is full compensation for furnishing and applying the two coat system; for preparing the concrete surface; and for preparing the sample panels.
stp-517-110 (20140630)

## 82. Architectural Surface Treatment B-51-135, Item 517.1050.S.406; B-51-136, Item 517.1050.S.407; B-51-137, Item 517.1050.S.408; R-51-57, Item 517.1050.S.430; R-51-58, Item 517.1050.S.431; R-51-53, Item 517.1050.S.440; R-51-54, Item 517.1050.S.441; R-51-55, Item 517.1050.S.442; R-51-56, Item 517.1050.S.443.

### A Description
Construct a concrete masonry architectural surface treatment on the exposed concrete surfaces of the structure, as detailed in the plans and as hereinafter provided.

### B Materials
Use form liners that attach easily to the forming system, and do not compress more than ¼-inch when poured at a rate of 10 vertical feet/hour.

Use a release agent that is compatible with the form liner and coloring materials.

Wall ties shall have set “break-backs” at a minimum of ¾-inches from the finished concrete surface.

### C Construction
#### C.1 Equipment
Equipment and tools necessary for performing all parts of the work shall be satisfactory as to design, capacity, and mechanical condition for the purposes intended. Repair, improve, replace, or supplement all equipment that is not maintained in full working order, or which is proven inadequate to obtain the results prescribed.

#### C.2 Form Liner Preparation
Clean the form liner prior to each pour and ensure that it is free of any build-up. Visually inspect each liner for blemishes or tears, and repair if necessary per manufacturer’s recommendations.

Apply form release per manufacturer’s recommendations.

#### C.3 Form Liner Attachment
Place adjacent liners less than ¼-inch from each other, attach liner securely to forms according to the manufacturer’s recommendations, and coordinate wall ties with form liner and form manufacturer, e.g., diameter, size, and frequency.

**C.4 Surface Finishing**
Ensure that the textured surface is free of laitance; sandblasting is not permitted.

Grind or fill pouring blemishes.

**D Measurement**
The department will not measure Architectural Surface Treatment (Structure). The department will use pay plan quantity conforming to standard spec 109.1.1.2.

**E Payment**
The department will pay for plan quantities conforming to standard spec 109.1.1.2 at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 517.1050.S.406 | Architectural Surface Treatment B-51-135 | SF |
| 517.1050.S.407 | Architectural Surface Treatment B-51-136 | SF |
| 517.1050.S.408 | Architectural Surface Treatment B-51-137 | SF |
| 517.1050.S.430 | Architectural Surface Treatment R-51-57 | SF |
| 517.1050.S.431 | Architectural Surface Treatment R-51-58 | SF |
| 517.1050.S.440 | Architectural Surface Treatment R-51-53 | SF |
| 517.1050.S.441 | Architectural Surface Treatment R-51-54 | SF |
| 517.1050.S.442 | Architectural Surface Treatment R-51-55 | SF |
| 517.1050.S.443 | Architectural Surface Treatment R-51-56 | SF |

Payment is full compensation for producing the proposed architectural surface treatment including: preparing the foundation; finishing and protecting the surface treatment; and for properly disposing of surplus material.
stp-517-150 (20110615)

## 83. Storm Sewer.

*Supplement standard spec 608.3.3(4) with the following:*

For all storm sewer pipes connecting to storm sewer structures which are adjacent to MSE retaining walls, tie the three sections of storm sewer pipe adjacent to the storm sewer structure.

## 84. Cover Plates Temporary, Item 611.8120.S.

**A Description**
This special provision describes furnishing, installing and removing a steel plate 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)

## 85. Pipe Underdrain 6-Inch.

*Replace standard spec 612.5(2) with the following:*

Payment for Pipe Underdrain 6-Inch is full compensation for providing the underdrain; for excavating and backfilling; and for open-graded material required for trench backfill in the edgedrain system for concrete pavements.

## 86. Salvaged Rail and Crash Cushions.

Do not cut sections of guardrail. Give two days' advance notice to Racine County before starting the salvaged guardrail and salvaged crash cushion work to coordinate pickup arrangements. Contact Mike Kirschling, Racine County Public Works, 14200 Washington Avenue, Sturtevant, WI, 53177, at (262) 886-8444, or Gail Lantz, WisDOT SE Region Maintenance, at (414) 750-0994.

## 87. Right-of-Way Fencing.

Remove existing right-of-way woven wire fencing between the IH 94 mainline and frontage roads, as shown in the plans to allow for construction operations. Install new woven wire fence within 30 calendar days of the removal of the existing fence. If work operations do not allow the new woven wire fence to be installed within 30 days, install and maintain orange safety fence (4-feet height) until the new woven wire fence can be installed. A quantity of the Fence Safety item has been included in the contract for this purpose. Where buried facilities or subsurface conditions do not permit driving posts for the safety fence, support posts by other means that will provide stability comparable to driven posts.

At no time leave a site where the fencing is inadequate to protect the general public.

## 88. Fence Woven Wire 4-FT.

**A Description**
This special provision describes construction of woven wire fence that does not include barbed wire. Conform to standard spec 616 except as follows.

**B Materials**
*Delete standard spec 616.2.2.2.*

**C Construction**
*Replace standard spec 616.3.2.1 with the following:*

Erect woven wire fencing fabric on preservative treated wood posts. Place all end, corner, pull, and vertical angle posts at the locations staked or as the engineer directs.

*Replace standard spec 616.3.2.3 (1), (2) with the following:*

Attach the woven wire to the posts so that the bottom wire is approximately 2 inches, but at most 4 inches, above the ground at the posts, except on abrupt grade changes as the plans show.

Secure the woven wire to all end and corner posts by wrapping each line of wire around the post and tying the wire back on itself with at least 1 ½ twists tightly wrapped with tools designed for the purpose, and supplement with staples driven into the posts. Stretch the wire until no slack exists, longitudinal wires are tight, and approximately 50 percent of the factory fabricated fence crimp is removed. Apply tension with an engineer-approved stretcher designed to produce a uniform amount of tension in each wire.

**D (Vacant)**

**E (Vacant)**

sef-616-005 (20160606)

## 89. Fence Safety, Item 616.0700.S.

**A Description**
This special provision describes furnishing and installing a plastic fence at locations shown on the plans and as hereinafter provided.

**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)

## 90. Topsoil and Salvaged Topsoil.

*Add the following to standard spec 625.2:*

(3) Furnish material that is relatively free from large roots, sticks, weeds, brush, stones, litter, and waste products.

(4) Do not use surface soils from ditch bottoms, drained ponds, and eroded areas, or soils which are supporting growth of NR 40 listed plants and noxious weeds or other undesirable vegetation. Ensure that the material conforms to the following:

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

*Organic matter determined by loss on ignition test of samples oven dried to constant weight at 212 F (100 C).
SER-625-001 (20160831)

## 91. Mulching.

*Supplement standard spec 627.3.2(1) with the following:*

Method B and Method C are both required when mulch is located within 40-feet of the IH 94 driving lanes.

## 92. 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.

*Add 628.3.12.3 (3) to the standard specs as follows:*

(3) Do not apply soil stabilizer within 30 feet of wetlands, waterways, or channels.

## 93. Sign Supports Concrete Masonry

*Add the following to standard spec 636.3.2:*

(4) Drill or excavate and maintain a stable open excavation for subsequent installation of drilled footings for sign structure foundations as the plans show. The subsurface conditions vary across the project site and are not necessarily the same at each sign structure foundation 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 sign structure foundation when selecting equipment and methods for drilling or otherwise excavating. Partial or full depth temporary casing may be required to maintain the stability of the excavation before placement of reinforcement and filling the excavation with concrete.

It is strongly advised to obtain and review the Geotechnical Exploration and Foundation Evaluation Reports for the sign structures and as well as nearby structures to the sign structure foundation being constructed. See article "Geotechnical Investigation Information" in these special provisions for information on obtaining geotechnical reports.

*Add the following to standard spec 636.3.3:*

(8) For drilled foundations, no more than 3 inches of standing water is allowed in the bottom of the drilled excavation within a timeframe acceptable to the engineer before placing concrete masonry in the excavation.

*Replace standard spec 636.5.2(1) with the following:*

(1) Payment for Sign Supports Concrete Masonry is full compensation for providing, transporting, placing and curing the concrete; for providing and removing casing if applicable; for providing required ground rods; for all required excavating; for placing post stubs or anchor bolts, and for providing and placing electrical conduit if required; for pumping of ground water seepage if applicable; for cleaning-up, repairing damage, and for disposing of excavation and surplus materials.
sef-636-005 (20170310)

## 94. Signs Type I and II.

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

*Supplement standard spec 637.2.4 with the following:*

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

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

Use beams a minimum of 6 feet in length or equal to the height of the sign to be supported, whichever is greater. Use U-bolts that are made of stainless steel, 1/2 inch diameter and of the proper size to fit the truss cords of each sign bridge. Install vertical sign support beams on each sign and use new U-bolts to attach each beam to the top and bottom cord of the sign bridge truss.

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

*Replace standard spec 637.2.4.1(2)2 with the following:*

Clips may be either stainless steel or aluminum conforming to ASTM B 108, alloy 356.0-T6.

*Replace standard spec 637.3.3.2(2) with the following:*

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

*Supplement standard spec 637.3.3.3(3) with the following:*

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

*Add the following to standard spec 641.2:*

Submit shop drawings for sign bridges and overhead sign supports to SE Region Traffic Operations Engineer, Tom Heydel and Bureau of Structures Design.
SER-637.1 (20170405)

## 95. Blue Specific Service Signs.

*Add the following to standard spec 638.3.4:*

Do not remove or move blue specific service signs or their associated posts. Specific service signs are signs with logos that identify commercial entities providing gas, food, lodging, camping, or attractions. A separate contractor, Interstate Logos - Wisconsin, is responsible for these signs. Contact Interstate Logos - Wisconsin at (844) 496-9163 a minimum of 14 calendar days in advance to coordinate removing, moving, or re-installation of these signs.

The contractor is responsible for damage done to these signs due to contractor operations.
stp-638-010 (20150630)

## 96. Pond Liner Clay, Item 640.1303.S.

**A Description**
This special provision describes furnishing and installing low permeable clay in the areas shown on the plans.

**B Materials**
For each source, prior to excavating and hauling the low permeable clay to the project, submit the results of the laboratory tests described in Table 1. The laboratory testing shall document that the clay from the source meets or exceeds the requirements.

The sample for the hydraulic conductivity test shall be remolded clay at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test AASHTO T-99 and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test AASHTO T-99. Conduct the laboratory source testing at the frequency listed in Table 1. Submit the test results to the engineer for review, two weeks prior to construction.

## C Construction

### C.1 Low Permeable Clay Placement

#### C.1.1 Subgrade

Compact the subgrade to a minimum density as defined in standard spec 207.3.6.2, Standard Compaction, or as otherwise specified in the contract requirements.

#### C.1.2 Erosion Protection

Do not place the low permeable clay until after all adjacent site grading has been completed and only after silt fence has been installed completely around the area of low permeable clay placement.

#### C.1.3 Low Permeable Clay Placement

After the fine grading is complete, place and compact low permeable clay in completed 6-inch lifts. Place each lift of low permeable clay in one continuous lift. See plans for low permeable clay construction limits. Measure the thickness of the low permeable clay shown on the plans perpendicular to the surface.

Notify the engineer at least three days prior to starting construction of low permeable clay.

Table 1

| Reference | Number | Test Title | Requirements | Testing Frequency | |
|---|---|---|---|---|---|
| | | | | Screening | QA/QC[12] |
| AASHTO[1] | T99-01 | Moisture –Density Relationships of Soils Using a 2.5-kg (5.5 lb) Rammer a 305 mm (12-in.) Drop (Standard Proctor) | NA[11] | 1/source | NA |
| AASHTO | T-88-00 | Particle Size Analysis of Soils | P200[3] $\geq$ 50% | 2/source | 1/lift |
| AASHTO | T-89-02 | Determining the Liquid Limit of Soils | LL[4] $\geq$ 22% | 2/source | 1/lift |
| AASHTO | T-90-00 | Determining the Plastic Limit and Plasticity Index of Soils | PI[5] $\geq$ 12% | 2/source | 1/lift |

| Table 1 | | | | | |
|---|---|---|---|---|---|
| Reference | Number | Test Title | Requirements | Testing Frequency | |
| | | | | Screening | QA/QC[12] |
| AASHTO | T310-03 | In-Place Density and Moisture Content of Soils and Soil-Aggregates by nuclear Methods (Shallow Depth) | DD[6] $\geq$ 95% of the MDD[7] | NA | 100'x100' Grid/lift |
| ASTM[2] | D5084-03 | Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter | K[8] $\leq 1 \times 10^{-7}$ cm/sec | 1/source[9] | 1/site[10] |

Notes:

1. AASHTO = American Association of State Highway and Transportation Officials
2. ASTM = American Society of Testing and Materials
3. P200 = Percent by weight passing the #200 sieve (%)
4. LL = Liquid Limit (%)
5. PI = Plasticity Index (%)
6. DD = Dry Density (pcf)
7. MDD = Maximum Dry Density (pcf) as determined by the Standard Proctor Test
8. K = Hydraulic Conductivity (cm/sec)
9. The sample for the test shall be remolded at a minimum dry density of 95% of the maximum dry density as determined by the Standard Proctor test and at a moisture content required to achieve the required hydraulic conductivity, but with a minimum moisture content at or above the optimum moisture content as determined in the Standard Proctor test.
10. An undisturbed sample from a thinned walled sampler (Shelby tube)
11. NA = Not applicable
12. QA/QC = Quality Assurance / Quality Control

Compact the low permeable clay to a minimum of 95% Standard Proctor AASHTO T-99 Maximum Dry Density with a footed compaction equipment having feet at least as long as the loose lift height. As needed, clay shall be disked or otherwise mechanically processed prior to compaction to break up clods and allow moisture content adjustment. Clod size shall be no greater than 4-inches. All compaction equipment utilized shall have a minimum static weight of 30,000 pounds.

Provide all equipment necessary to adjust low permeable clay to the proper moisture content for compaction.

Make sufficient number of passes of the compaction equipment over each lift of clay to ensure complete remolding of the clay.

Do not proceed with placement of additional lifts until all required low permeable clay testing and documentation has been completed for the previous lift.

During placement of the low permeable clay the minimum moisture content shall be as defined by the testing performed in the source evaluation and with the following limits:

- No drier than the optimum moisture content as determined by the Standard Proctor test.

If the in-place low permeable clay fails to meet the requirements of Table 1, then remove and replace or rework any portion of the low permeable clay not meeting the project requirements until project specifications are met. There shall be no compensation for removing, replacing and reworking low permeable clay not meeting the requirements in Table 1.

**C.1.4 QA/QC Testing of the Low Permeable Clay**

The department will perform the QA/QC testing at the frequency shown in Table 1. The department will record the thickness of low permeable clay on a 100-foot x 100-foot grid pattern.

Provide the following:

- Access for on-site testing, inspection, and documentation.
- Machinery required to grade/blade density test locations.
- Machinery required to collect undisturbed clay samples (i.e., with Shelby tubes).
- Replace and recompact clay material removed for testing purposes.

**D Measurement**

The department will measure Pond Liner Clay in volume by the cubic yards, acceptably completed.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 640.1303.S | Pond Liner Clay | CY |

Payment is full compensation for dewatering areas of site where the low permeable clay is to be placed; for furnishing, placing and compacting the low permeable clay; and for performing all tests.

stp-640-016 (20130615)

## 97. Sign Bridge Identification Plaques.

*Supplement standard spec 641.5 with the following:*

(5) Payment for Sign Bridge and Overhead Sign Support bid items is full compensation for providing and installing sign bridge identification plaques and mounting hardware as shown on the standard detail drawing in the plans for each existing and new sign bridge or overhead sign support.

SER-641.1 (20160902)

## 98. Nighttime Work Lighting-Stationary.

**A Description**

Provide 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 prior to 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)

## 99. Covering Signs.

*Replace standard spec 643.2.3.3(2) with the following:*

(2) Ensure that covers are flat black, blank, and opaque.

*Add the following to standard spec 643.3.4.1 as paragraph four:*

(4) If multiple messages on a single sign are required to be covered, minimize the number of holes created by covering the sign with a single rectangular shaped covering. Multiple coverings on a single sign is only permissible where necessary to avoid covering necessary content or as directed by the engineer. Submit sign covering plans to the engineer for single signs requiring multiple coverings three 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)

## 100. Truck or Trailer-Mounted Attenuator, Item 643.1055.S.

**A Description**
This special provision describes protecting moving work operations with a truck or trailer mounted attenuator (TMA).

**B Materials**
Furnish and maintain a TMA conforming to NCHRP Report 350 or MASH approved unit Test Level 3 crashworthiness criteria. Submit written certification from the manufacturer that the host vehicle/ attenuator configuration conforms to the crashworthiness criteria. Include the federal-aid reimbursement eligibility letter with that submittal.

Provide a host vehicle and mount the attenuator conforming to the attenuator manufacturer's specifications. Provide the engineer a copy of the manufacturer's specifications and installation instructions.

**C Construction**
Coordinate with the engineer at least 72 hours before its intended use so the engineer can determine if the work operation requires TMA protection.

Ensure that an operator stays with the host vehicle while protecting a moving work operation.

**D Measurement**
The department will measure Truck or Trailer Mounted Attenuator by the day, acceptably completed, measured to the ½ day based on engineer determined time that attenuator is required to protect work operations. The department will measure 4 or less hours per calendar day as a half day and over hours as a full day.

**E Payment**
(1) The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 643.1055.S | Truck or Trailer-Mounted Attenuator | DAY |

(2) Payment is full compensation for providing the portable attenuator, host vehicle, and operator.

## 101. Traffic Control Interim Lane Closure IH 94, Item 643.4100.S.01.

**A Description**
This special provision describes closing a freeway/expressway traffic lane.

**B (Vacant)**

**C Construction**
Install and reposition traffic control devices as required to close a traffic lane. Remove and return the devices to their previous configuration when the closure is no longer required.

**D Measurement**
The department will measure Traffic Control Interim Lane Closure as each individual reposition/return cycle, acceptably completed. The department will not measure additional moves or configuration changes as might be required solely to accommodate the contractor's operations.

The department will measure the closures by traffic lane and roadway. The department will not measure multiple closures in the same traffic lane on a project.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 643.4100.S.01 | Traffic Control Interim Lane Closure IH 94 | EACH |

Payment is full compensation for closing, and re-opening the affected traffic lane.
stp-643-030 (20170615)

## 102. Late Season Marking Requirements.

*Replace standard spec 646.3.1.3(2) with the following:*

(2) Do not place Temporary Marking Line Removable Contrast Tape unless both the ambient and pavement temperatures are 40 degrees F and rising. If the engineer allows marking below 40 F, apply epoxy in the exact location where permanent marking would be installed. Maintain until weather permits permanent placement. Use epoxy from the APL located at:
http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/appr-prod/default.aspx
sef-646-005 (20180104)

## 103. Cold Weather Marking Epoxy 4-Inch, Item 646.6464.S; 8-Inch, Item 646.6468.S.

This special provision adds a bid item for the cold weather pavement marking work specified in standard spec 646.3.1.3.

**Measurement**
*Replace standard spec 646.4(5) with the following:*

(5) The department will measure the Cold Weather Marking Epoxy bid items by the LF of marking acceptably replaced, measured after replacement. The department will not measure replaced marking as follows:
- If the contractor fails to maintain the initial marking as required in standard spec 646.3.1.3(2).
- If initial marking is placed on days when the department is assessing liquidated damages.

**Payment**
*Add the following bid items to standard spec 646.5(1):*

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 646.6464.S | Cold Weather Marking Epoxy 4-Inch | LF |
| 646.6468.S | Cold Weather Marking Epoxy 8-Inch | LF |

*Replace standard spec 646.5(4) with the following:*

(4) Payment for the Cold Weather Marking Epoxy bid items is full compensation for providing replacement marking including maintenance of the initial marking, removal of the initial marking, and placing the final marking. The department will pay separately for the initial marking under the associated standard spec Marking bid items at the time of initial placement.

stp-646-010 (20170615)

## 104. 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.

## 105. Roadway Lighting Systems.

**A General**
*Add the following to standard spec 651, 652, 653, 654, 655, 656, 657 and 659.*

All the work necessary to comply with revisions to standards specs mentioned as hereinafter provided shall be incidental to associated pay items or to the project including coordination, materials, and labor. No additional payment shall be made to the contractor.

*Add the following to standard spec 651.2:*

Materials indicated to be returned to the department shall be hauled to one of the following two locations:

1. State Electrical Shop at 935 South 60th street, West Allis, as directed by Miss. Bree Johns-Konkol, (414) 266-1170.
2. Milwaukee County Grounds, 10191 West Watertown Plank Road, Wauwatosa, as directed by Mr. Pat Stoetzel, (414) 750-5306.

Arrange pickups and deliveries a minimum three days in advance and during regular business hours (Monday – Thursday 7:00 AM to 3:45 PM).

*Add the following to standard spec 651.3.1:*

Any circuit that the contractor does not personally tag out at the disconnect shall be considered live, and will be subject to being activated by another person with no notice to the contractor. Make tagouts with manufactured tags, and endorse them with the date and the name of the contractor. Clear tagouts at the end of the workday. The department does not employ a load dispatcher and has no intent to do so. Each electrical worker is responsible for their own protection from automatic switching and from switching by others.

The plans show required disconnections of existing lighting circuits, most in the form of abandoning existing underground conductors in place. The contractor may need to mobilize several times per each existing lighting distribution center. The contractor is expected to account for these costs in the various paid items for removals and installations.

Replace all existing slotted junction box cover screws with stainless hex head cover screws at each location where it is required to open the cover of an existing lighting junction box.

*Add the following to standard spec 651.5:*

Work to disconnect and connect conductors will be incidental to the paid measurement of footage.

Work to disconnect and connect electrical system, splice through, or to connect conductors are incidental to the installation or removal of the freeway lighting pay items included in this contract.

The department will not measure and pay conductors or conduits that have been abandoned in place or removed for scrap unless covered in the contract bid items . The department will allow, at the contractor's discretion, for the salvaging of conductors to be abandoned.

*Add the following to standard spec 652.3.1:*

Install minimum 3-inch diameter PVC conduit elbows in a ground mounted concrete bases to accommodate Cable in Duct (CID) type cable.

*Add the following to standard spec 652.3.1.2:*

Furnish and install an UL-listed liquid tight flexible metallic conduit transition wherever a conduit exits from below grade.

Furnish a UL-listed fitting appropriate for the purpose at each transition from one type of conduit to another type. Couplings will not be individually measured for payment.

*Add the following to standard spec 652.3.1.4:*

Support conductors at the top of the vertical raceway or as close as practical if the vertical rise exceeds 40-feet. Provide additional supports as shown; in no case shall the distance between supports exceed that shown in Table 300.19(A) of the Wisconsin State Electric Code.

*Add the following to standard spec 653.3(1):*

This provision modifies the standard detail drawing for pull boxes and thereby both the standard items and SPV pay item for pull boxes. Lighting pull box covers shall read "LIGHTING".

*Add the following to standard spec 655.3.1:*

Wet location splices are not anticipated on this project and not shown in the plans. In the event that the engineer allows wet location splices, make pull box splices with engineer approved epoxy kit.

At each pull point or access point, indicate the line side bundle with a lap of blue tape.

*Add the following to standard spec 655.3.7(4):*

Where two or more wire networks pass through a pull point, tag each circuit network (i.e. A/B/N and C/D/N) with approved all-weather tags.

*Add the following to standard spec 657.2:*

Non-breakaway poles (mounted on structures, concrete bases or behind noise wall barriers without transformer base), as well as at stems of sign bridges containing electrical wires are to be double nutted and contractor shall install galvanized rat screen enclosing the bottom of pole area; extra nuts and screen are incidental.

*Add the following to standard spec 657.3.1and 657.3.5:*

Corrosion protection measures described in standard spec 657.3.1 and 657.3.5 are invoked for breakaway transformer bases and aluminum light poles. The contractor shall avoid contact of dissimilar metals in erecting the pole on its foundation and/or breakaway device. Any concern of trapped moisture or potential corrosion cell shall be resolved to the satisfaction of the engineer.

**Manufacturer's Warranty for LED luminaires:** The manufacturer shall warrant to the department that each complete luminaire (consisting of the housing, optical assembly, LED drivers, surge protection and wiring) will be free from defects in material and workmanship for five years from the date that the luminaire are put into service. Luminaires shall be installed within one year of manufacture.

If any luminaires fail to meet the above warranty, the department shall provide the manufacturer with a written notice of any defect within 30 days after discovery of the defect. The manufacturer shall provide all materials, luminaires, replacement component parts, labor and all incidentals necessary to restore the luminaire to a fully operational, installed condition.

**Submittal Requirements for LED luminaires:** Considering the rapid advancement in LED technology, the overall project construction and duration of construction, within 10 calendar days after contract execution, the contractor is responsible to coordinate the lead time for LED luminaires purchase and installation schedule for LED luminaires with the engineer and the department's lighting engineer, Eric Perea, at eric.perea@dot.wi.gov or (262) 574-5422 prior to order LED luminaires. The LED luminaires purchasing may be done during later stage of construction as directed by the department which shall not delay the construction.

*Add the following to standard spec 659.3:*

Provide and install / replace Plaques Light Pole on all poles located in the median at a mounting height of 6-inch above the highest adjacent safety barrier or obstruction.

High mast tower luminaires shall be 1000 Watts, High Pressure Sodium, M-C-II type distribution or LED equivalent.

*Add the following to standard spec 659.3.1:*

Contractor shall be responsible to provide adequate temporary roadway lighting during all the construction stages not shown on the temporary lighting plans, but which are necessitated by field conditions or by any construction phasing changes. Installation of temporary lighting not shown on temporary lighting plans shall be paid according to appropriate pay items included in this contract. Contractor shall be responsible to submit a redline markup plans for any additional temporary lighting to the Engineer for approval prior to installation.
SER-659.1 (20170407)

## 106. Install Conduit Into Existing Item, Item 652.0700.S.

### A Description
This special provision describes installing proposed conduit into an existing manhole, pull box, junction box, communication vault, or other structure.

### B Materials
Use conduit as provided and paid for under other items in this contract. Furnish backfill material, topsoil, fertilizer, seed, and mulch conforming to the requirements of pertinent provisions of the standard specifications.

### C Construction
Expose the outside of the existing structure without disturbing existing conduits or cabling. Drill the appropriate sized hole for the entering conduit(s) at a location within the structure without disturbing the existing cabling and without hindering the installation of new cabling within the installed conduit. Fill void area between the drilled hole and conduit with an engineer-approved filling material to protect against conduit movement and entry of fill material into the structure. Tamp backfill into place.

### D Measurement
The department will measure Install Conduit Into Existing System by the unit, acceptably installed. Up to five conduits entering a structure per entry point into the existing structure will be considered a single unit. Conduits in excess of five, or conduits entering at significantly different entry points into the existing pull box, manhole, or junction box will constitute multiple units of payment.

### E Payment
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 652.0700.S | Install Conduit Into Existing Item | EACH |

Payment is full compensation for excavating, drilling holes; furnishing and installing all materials, including bricks, coarse aggregate, sand, bedding, and backfill; for excavating and backfilling; and for furnishing and placing topsoil, fertilizer, seed, and mulch in disturbed areas; for properly disposing of surplus materials; and for making inspections.
stp-652-070 (20100709)

## 107. 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** |
|---|
| 50-Foot CCTV Camera Poles |
| CCTV Cameras |
| 72-Count Fiber Optic Cable |
| 24-Count Fiber Optic Cable |
| 6-Count Fiber Optic Cable |
| Fiber Optic Termination Panels |
| Fiber Optic Splice Enclosures |
| Pole-Mount Control Cabinets |
| Ethernet Switches |
| Terminal Servers |
| Fiber Optic SFPs |
| Microwave Vehicle Detectors |

Pick-up small department-furnished equipment, such as communications devices, cameras, and controllers, from the department's Statewide Traffic Operations Center (STOC), 433 W. St. Paul Ave., Milwaukee, WI 53203 at a mutually agreed upon time during normal state office hours. Contact the department's STOC at (414) 227-2166 to coordinate pick-up of equipment.

Large department-furnished equipment, such as camera poles will be delivered by the supplier to a contractor-controlled site within Racine County. Delivery will not necessarily be in a "just in time" manner. Store the equipment until field installation. Provide location details and a contact for delivery coordination upon receiving the contract's Notice to Proceed.

Transportation of the equipment between the electric shop and the field or interim location(s) shall be the responsibility of the contractor.

**Standard spec 106.3 – Approval of Materials**
*Add the following to standard spec 106.3:*

**Design/Shop Drawings**
Prior to the purchase and/or fabrication of any of the components listed herein, and for any non-catalog item shown on the Material and Equipment List specified above, and no more than 30 days after notice to proceed, submit five copies of design drawings and shop drawings, as required, to the department for review. The items and the drawings that represent them shall meet the requirements of the standard specifications.

Design drawing submissions shall consist of signed and certified designs, design drawings, calculations, and material specifications for required items.

Shop drawings will be required for, but not limited to the following:

1. Mounting assemblies for the vehicle speed and classification sensors, including their attachment to the structure.
2. Mounting LED warning signs to the sign structure.
3. Mounting detail for dynamic message signs.
4. Any contractor-designed structure or foundation.

The department will complete its review of the material within 30 days from the date of receipt of the submission, unless otherwise specified. The department will advise the contractor, in writing, as to the acceptability of the material submitted. The department may determine that if no exceptions were taken for the item, it is approved, and no further action is required by the contractor; or the item may be partially or totally rejected, in which case modify and/or amend the submittal as required by the department and resubmit the item within 14 days. At this time, the review and approval cycle described above will begin again. stp-670-005 (20150630)

# 108. Intelligent Transportation Systems – General Requirements.

**A Description**
**A.1 General**
This contract includes furnishing and installing elements for an Intelligent Transportation System (ITS) in or along the existing roadway as shown on the plans.

Unusual aspects of this project include:

1. The project includes working on cables and equipment that are carrying data between roadside equipment and the department's Statewide Traffic Operations Center (STOC). Interruption of this service is not expected to perform this work. If an interruption is determined necessary, it must be done on a weekend, and must be done in a way that minimizes communication outages for the existing equipment. Notify the department's STOC at least 48 hours in advance of the planned interruption.
2. The department will furnish some of the equipment to be installed. Make a reasonable effort to discover defects in that equipment prior to installing it.

### A.2 Surge Protection

Equip every ungrounded conductor wire entering or leaving any equipment cabinet with a surge protector. For purposes of this section, multiple cabinets on a single pole or foundation are considered a single cabinet.

## B Materials

### B.1 General

Only furnish equipment and component parts for this work that are new and have high quality workmanship. All controls, indicators, and connectors shall be clearly and permanently labeled in a manner approved by the engineer. All equipment of each type shall be identical.

All electrical equipment shall conform to the standards and requirements of the Wisconsin Electrical Code, the National Electrical Manufacturers Association (NEMA), National Electric Safety Council (NESC), Underwriter's Laboratory Inc. (UL) or the Electronic Industries Association (EIA), when applicable. All materials and workmanship shall conform to the requirements of the National Electrical Code (NEC), Rural Electrification Administration (REA), Standards of the American Society for Testing and Materials (ASTM), American Association of State Highway and Transportation Officials (AASHTO), requirements of the plans these special provisions, the standard specifications, and to any other codes, standards, or ordinances that may apply. All system wiring, conduit, grounding hardware and circuit breakers shall be in conformance with the National Electrical Code. Whenever reference is made to any of the standards mentioned, the reference shall be considered to mean the code, ordinance, or standard that is in effect at the time of the bid advertisement.

### B.2 Outdoor Equipment

All conductive connectors, pins (except pins connected by soldering), and socket contacts shall be gold plated. Acrylic conformal coating shall protect each circuit board side that has conductive traces. Except for integrated circuits containing custom firmware, all components shall be soldered to the printed circuit board.

To prevent galvanic corrosion, all connections between dissimilar metals shall incorporate a means of keeping moisture out of the connection. Where the connection need not conduct electricity, interpose a non-absorbing, inert material or washer between the dissimilar metals. Use nonconductive liners and washers to insulate fasteners from dissimilar metals. Where the connection must conduct electricity, use a conductive sealant between the dissimilar metals. Alternatively, use an insulating gasket and a bond wire connecting the two metal parts.

### B.3 Custom Equipment

Equipment that is not part of the manufacturer's standard product line, or that is made or modified specifically for this project, shall conform to the following requirements:

Where practical, electronics shall be modular plug-in assemblies to facilitate maintenance. Such assemblies shall be keyed to prevent incorrect insertion of modules into sockets.

All components shall be available from multiple manufacturers as part of the manufacturers' standard product lines. All must be clearly labeled with the value, part number, tolerance, or other information sufficient to enable a technician to order an exact replacement part.

Lamps used for indicator purposes shall be light-emitting diodes.

The printed circuit boards shall be composed of "two-ounce" copper on 1/16-inch thick fiberglass epoxy or equivalent type construction. Holes that carry electrical connections from one side of the boards to the other shall be completely plated through. Multilayer printed circuit boards shall not be used. The name or reference number used for the board in the drawings and maintenance manuals supplied to the department shall be permanently affixed to each board.

All components shall be mounted so that the identifying markings are visible without moving or removing any part, if practical.

**B.4 Environmental Conditions**

Equipment shall continue to operate as specified under the following ranges of environmental conditions, except as noted in the specifications for individual pieces of equipment.

1. **Vibration and Shock:** Vehicle speed and classification sensors and any other equipment mounted atop poles or on structures shall not be impaired by the continuous vibration caused by winds (up to 90 mph with a 30 percent gust factor) and traffic.
2. Duty Cycle: Continuous
3. **Electromagnetic Radiation:** The equipment shall not be impaired by ambient electrical or magnetic fields, such as those caused by power lines, transformers, and motors. The equipment shall not radiate signals that adversely affect other equipment.
4. Electrical Power:
    a. **Operating power:** The equipment shall operate on 120-volts, 60-Hz, single-phase unless otherwise specified. It shall conform to its specified performance requirements when the input voltage varies from 89 to 135 volts and the frequency varies +3 Hz.
    b. **High frequency interference:** The equipment operation shall be unaffected by power supply voltage spikes of up to 150 volts in amplitude and 10 microseconds duration.
    c. **Line voltage transients:** The equipment operation shall be unaffected by voltage transients of plus or minus 20 percent of nominal line voltage for a maximum duration of 50 milliseconds. Equipment in the field shall meet the power service transient requirements of NEMA Standard TS-2 when connected to the surge protectors in the cabinets.

5. Temperature and Humidity:
    a. **Field equipment:** Equipment in the field shall meet the temperature and humidity requirements of NEMA Standard TS-2. Liquid crystal displays shall be undamaged by temperatures as high as 165 degrees F, and shall produce a usable display at temperatures up to 120 degrees F.
    b. **Equipment in Controlled Environments** shall operate normally at any combination of temperatures between 50 degrees F and 100 degrees F, and humidity's between 5 percent and 90 percent, non-condensing, and with a temperature gradient of 9 degrees F per hour.

**B.5 Patch Cables and Wiring**

All cables and wiring between devices installed in a single cabinet, or in separate cabinets sharing a single concrete base, will be considered incidental to the installation of the devices and no separate payment will be made for them. It is anticipated that this will include fiber optic patch cables between termination panels and Ethernet switches, 10 / 100 MBPS Ethernet cables, RS-232 cables between individual devices and terminal servers, and power cables between individual devices and power sources within the cabinets.

**B.6 Surge Protection**

Low-voltage signal pairs, including twisted pair communication cable(s) entering each cabinet shall be protected by two-stage, plug-in surge protectors and shall be installed on both ends of camera control cables. The protectors shall meet or exceed the following minimum requirements:

1. The protectors shall suppress a peak surge current of up to 10k amps.
2. The protectors shall have a response time less than one nanosecond.
3. The protector shall clamp the voltage between the two wires at a voltage that is no more than twice the peak signal voltage, and clamp the voltage between each wire and ground at 50 volts.
4. The first stage of protection shall be a three-element gas discharge tube, and the second stage shall consist of silicon clamping devices.
5. The protector shall also contain a resettable fuse (PTC) to protect against excessive current.
6. There shall be no more than two pairs per protector.
7. It shall be possible to replace the protector without using tools.

Cables carrying power to curve signs shall be protected at the cabinet by grounded metal oxide varistors of appropriate voltages. The varistors must be at least 0.8 inch in diameter.

**C Construction**

**C.1 Thread Protection**

Provide rust, corrosion, and anti-seize protection at all thread assemblies of metallic parts by coating (non-spray) the mating surfaces with an approved compound. Failure to use an approved compound will result in no payment for the items to which coating was to have been applied.

## C.2 Cable Installation

When installing new cables into conduits containing existing cables, remove the existing cables and reinstall the existing cables simultaneously with the new cables. Take every precaution necessary to protect the existing cables. In the event of avoidable damage to the existing cables, replace all damaged cables, in-kind, at no additional expense to the department. When cables are pulled into conduit, use a cable pulling lubricant approved by the cable manufacturer. Submit documentation supporting manufacturer approval of the lubricant to the engineer.

## C.3 Wiring

Every conductor, except a conductor contained entirely within a single piece of equipment, must terminate either in a connector or on a terminal block. Provide and install the connectors and terminal blocks where needed, without separate payment. Use approved splice kits instead of connectors and terminal blocks for underground power cable splices.

Permanently label and key connectors to preclude improper connection. Obtain prior engineer approval for the labeling method(s) prior to use.

Terminal blocks must be affixed to panels that permanently identify the block and what wire connects to each terminal. This may be accomplished by silk screening or by installing a laminated printed card under the terminal block, with the labels on portions of the card that extend beyond the block. Installation of terminal blocks by drilling holes in the exterior wall of the cabinet is not acceptable.

Use barriers to protect personnel from accidental contact with all dangerous voltages.

Do not install conductors carrying AC power in the same wiring harness as conductors carrying control or communication signals.

Arrange wiring, including fiber optic pigtails, so that any removable assembly can be removed without disturbing wiring that is not associated with the assembly being removed.

Communication and control cables may not be spliced underground, except where indicated on the plans.

Cables in the Statewide Traffic Operations Center or in communication hubs, which are not contained within a single cabinet, shall have at least 10 feet of slack.

## C.4 System Operations

If the contractor’s operations unexpectedly interrupt Intelligent Transportation Systems (ITS) service, notify the engineer immediately and restore service within 24 hours. Repair all damaged facilities to the condition existing before the interruption. If service is not restored within 24 hours, the department may restore service to any operating device and deduct restoration costs from payments due the contractor.

**C.5 Surge Protection**
Arrange the equipment and cabinet wiring to minimize the distance between each conductor's point of entry and its protector. Locate the protector as far as possible from electronic equipment. Ensure that all wiring between the surge protectors and the point of entry is free from sharp bends.

**D Measurement**
No separate measurement will be made for the work described in this article.

**E Payment**
No separate payment will be made for the work described in this article. All work described in this article shall be included under the ITS items in the contract.
stp-670-010 (20100709)

## 109. Install Pole Mounted Cabinet, Item 673.0225.S.

**A Description**
This special provision describes installing department furnished aluminum enclosures on poles for intelligent transportation systems equipment.

**B Materials**
Use stainless steel bolts, nuts, and washers unless otherwise specified.

All conductors, terminals, and parts that could be hazardous to maintenance personnel shall be protected with suitable insulating material.

The cabinet will be equipped with service panels. Two panels shall be provided and mounted on the cabinet sidewalls. The left side panel shall be designated as "Input/Communications," and the right side panel shall be designated as the "Service Panel."

The service panel will be equipped with a four-outlet handi-box. Wire the handi-box to the series portion of the filtering surge protector.

Use metallic conduit, fittings, and adapters required from the underground conduit transition point to the cabinet as part of this item. A typical installation requires on 2-inch conduit. Use metallic conduit according to standard spec 652.

**C Construction**
Fasten the field cabinet securely onto a pole. Provide bolted stainless steel connections with lock washers, locking nuts, or other engineer-approved means to prevent the connection nuts from backing off. Isolate dissimilar materials from one another using stainless steel fittings. Make all power connections to the cabinet as specified in standard spec 656.

Drill and tap the cabinet, as necessary, to mount the terminal blocks and other attachments to the service panel, to provide an entrance on the back of the cabinet for cable from the pole mounted intelligent transportation systems equipment, and to mount the service panel to the cabinet as shown in the details. Remove all sharp edges or burrs, or both, caused by the

cutting or drilling process. Seal all openings to prevent water from entering the cabinet. Mount the surge protector to the service panel.

Install metallic conduit on the exterior of the pole (for entrance to the cabinet from the ground) as shown in the plans, and according to the applicable requirements of standard spec 652.

**D Measurement**
The department will measure Install Pole Mounted Cabinet as each individual assembly, acceptably completed.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 673.0225.S | Install Pole Mounted Cabinet | EACH |

Payment is full compensation for installing the pole mounted cabinet; for making all connections and conduit/wire entrances; and for all testing.
stp-673-010 (20100630)

## 110. Removing 50-Foot Camera Pole, Item 677.9051.S.

**A Description**
This special provision describes removing an existing camera pole.

**B (Vacant)**

**C Construction**
Disconnect all cables, wiring and equipment that are mounted on or in the poles, and remove the pole from the concrete footing. The department will pick up any antennae, cameras, or other equipment mounted on the pole; contact maintenance staff at (414) 227-2166 at the department's Statewide Traffic Operations Center, when the material is ready to be picked up. Properly dispose of the pole, conduit, cabling, and wiring away from the project site.

**D Measurement**
The department will measure Removing (Height) Camera Pole by the unit, acceptably removed.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid items:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 677.9051.S | Removing 50-Foot Camera Pole | EACH |

Payment is full compensation for removing and disposing of the existing camera pole; disconnecting any necessary wiring; removing the equipment mounted on the poles; disposing of cabling and wiring; and transportation.
stp-677-901 (20100630)

## 111. Removing CCTV Camera, Item 677.9200.S.

**A Description**
This special provision describes removing an existing CCTV camera from an existing camera pole as described in the plan.

**B (Vacant)**

**C Construction**
Disconnect all wiring at the control cabinet and at the top of the camera pole. Remove all fastening hardware and remove the existing camera and pan, tilt, and zoom mechanisms from the top of the pole. Salvage and store the cameras for pick up by the department; contact maintenance staff at (414) 227-2166 at the department's Statewide Traffic Operations Center to coordinate when the materials will be picked up.

The contractor may request a meeting with the engineer to assess the condition and operability of the camera prior to beginning work on removing the camera. Any damage or improper operation not noted at the meeting, or prior to the contractor starting work on the removal, will be assumed to be the fault of the contractor; repair or replace the camera at no additional cost to the department. Store the camera until the department picks up the camera.

**D Measurement**
The department will measure Removing CCTV Camera by the unit, acceptably and completely removed.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 677.9200.S | Removing CCTV Camera | EACH |

Payment is full compensation for removing an existing CCTV camera; for disconnecting all necessary cables and wiring; and properly storing the materials.
stp-677-902 (20100630)

## 112. Optimized Aggregate Gradation Incentive, Item 715.0710.

**Description**
This special provision describes optional contractor optimized aggregate gradation, optional optimized mixture designs, and associated additional requirements for class 1 concrete used in concrete pavements. Conform to standard specification part 7 and as follows:

**Optimized Aggregate Gradation**
A Job Mix Formula (JMF) contains all of the following:

Proportions for each aggregate fraction conforming to table 1.
Individual gradations for each aggregate fraction.

Composite gradation of the combined aggregates including working ranges on each sieve according to table 2.

Submit the target JMF and aggregate production gradation test results to the engineer for review 10 business days before initial concrete placement.

**TABLE 1 TARANTULA CURVE GRADATION BAND**

| SIEVE SIZES | PERCENT RETAINED |
|---|---|
| 2 in. | 0 |
| 1 1/2 in. | ≤5 |
| 1 in. | ≤16 |
| 3/4 in. | ≤20 |
| 1/2 in. | 4-20 |
| 3/8 in. | 4-20 |
| No. 4 | 4-20 |
| No. 8[1] | ≤12 |
| No. 16[1] | ≤12 |
| No. 30[1] [2] | 4-20 |
| No. 50 [2] | 4-20 |
| No. 100 [2] | ≤10 |
| No. 200 [2] | ≤2.3 |

[1] Minimum of 15% retained on the sum of the #8, #16, and #30 sieves.
[2] Conform to 24-34% retained of fine sand on the #30-200 sieves.

**TABLE 2 JMF WORKING RANGE**

| SIEVE SIZES | WORKING RANGE[1] (PERCENT) |
|---|---|
| 2 in. | ±5 |
| 1 1/2 in. | ±5 |
| 1 in. | ±5 |
| 3/4 in. | ±5 |
| 1/2 in. | ±5 |
| 3/8 in. | ±5 |
| No. 4 | ±5 |
| No. 8 | ±4 |
| No. 16 | ±4 |
| No. 30 | ±4 |
| No. 50 | ±3 |
| No. 100 | ±2 |
| No. 200 | ≤ 1.6 |

[1] Working range limits of composite gradation based on moving average of 4 tests.

Test each component aggregate once per 1,500 cubic yards during concrete production. Take samples by one of the following sampling methods:

1. At the belt leading to the weigh hopper.
2. Working face of the stock piles at the concrete plant if approved by the engineer.

The department will take independent QV samples using the same sampling method the contractor uses for QC sampling. QV samples may be taken by the contractor's QC personnel if witnessed by the department's QV personnel. The department will split each QV sample and retain half for all dispute resolutions. If QV test results conform to the specification, the department will take no further action. If QV test results are nonconforming, add the QV to the QC test results as if it were an additional QC test.

If, during concrete production, the moving average of four for any sieve fall outside the allowable JMF working range do the following:

1. Notify the engineer of the test results within 1 business day from the time of sampling.
2. Make immediate adjustments to the JMF, within the limits specified in Table 3;
3. Review JMF adjustments with the engineer. Both the contractor and engineer will sign the adjusted JMF if the adjustments comply with Table 3.
4. If the moving average of four falls outside the adjusted allowable working range, stop production and provide a new mix design including JMF to the engineer.

**TABLE 3 ALLOWABLE JMF ADJUSTMENTS**

| SIEVE SIZES | ALLOWABLE ADJUSTMENT (PERCENT) |
|---|---|
| ≥ No. 4 | ±5 |
| No. 8 – No. 30 | ±4 |
| No. 50 | ±3 |
| No. 100 | ±2 |

**Dispute Resolution**

The department will resolve disputes as specified in standard spec 106.3.4.3.5 using QV split samples.

**Sublot and Lot Size**

A sublot consists of up to 1,500 cubic yards. A lot consists of two sublots.

**Optimized Concrete Mixtures**

The contractor may use a reduced cementitious content for concrete pavement placed if the contractor does the following:

1. Use an optimized aggregate gradation as defined in this special provision.
2. Conform to the additional testing requirements for flexural strength as specified in the contract special provisions.

3. Submit aggregate gradation result records no more than 2 years old when developing the mix design.
4. Determine the volume of voids in the optimized aggregates using ASTM C29.
5. Download and follow the instructions tab of the Optimized Gradation and Mix Design Spreadsheet located at:

http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx

6. Design an appropriate paste content based upon the Performance-based PCC Mix Design Guide located at:

http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx

7. Provide a minimum Vpaste/Vvoids of 1.25. (Paste/Void ratio equals the volume of paste divided by the volume of voids.).
8. Evaluate workability of trial batches by following section 6.8 of AASHTO Draft Performance Engineered Concrete Pavement Mixtures Specifications located at:

http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx

9. Submit trial batch workability results when submitting the mix design.
10. Submit the CP Tech center computer spreadsheet concrete mix design to the engineer for review at least 3 business days before producing concrete.
11. Provide a minimum cement content of 520 pounds per cubic yard, except if using type I, IL, or III cement in a mix where the geologic composition of the coarse aggregate is primarily igneous or metamorphic materials, provide a minimum cement content of 660 pounds per cubic yard.
12. The contractor may use class C fly ash or grade 100 or 120 slag as a partial replacement for cement. For binary mixes use up to 30% fly ash or slag. For ternary mixes use up to 30% fly ash plus slag in combination. Replacement values are in percent by weight of the total cementitious material in the mix.
13. See CMM 8-70.2.2.3 for additional guidance.

**Measurement**

The department will measure Optimized Aggregate Gradation Incentive by the dollar, for each combined averaged lot of QC test results meeting Table 1.

**E Payment**

The department will pay incentive of 3 percent of the contract unit price for concrete pavement under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| 715.0710 | Optimized Aggregate Gradation Incentive | DOL |

stp-715-005 (20170615)

## 113. QMP Concrete Pavement Special Requirements.

This is a specialized QMP Concrete Pavement specification modified for I-94 North/South Corridor projects.

*Supplement standard spec 701, 710, 715 with the following:*

**A Description**
**A.1 General**
Conform to standard spec 320, 415, 416, and 501 as modified in this special provision. Apply this special provision only to the following bid items:

- 415.0060 - 0199 Concrete Pavement (inch)
- 415.1080 - 1199 Concrete Pavement HES (inch)
- 415.0410 Concrete Pavement Approach Slab
- 415.1410 Concrete Pavement Approach Slab HES
- 415.0210 Concrete Pavement Gaps
- Concrete Pavement (inch) Special

**A.2 Quality Control Program**
**A.2.1 Control Charts**
Maintain control charts when required by the test reporting procedures. Ensure that all tests are recorded and become part of the project records. Plot required test results on the control charts. Include random, non-random, and engineer requested testing, but only include the contractor's randomly selected QC test results in the 4-point running average. Other process control or informational tests on the control charts may be plotted, but do not include them in 4-point running averages.

Post control charts in an engineer-approved location, and update daily. Ensure that the control charts include the project number, the test number, each test element, the applicable warning and control limits, the contractor's individual test results, the running average of the last 4 data points, and the engineer's verification and independent assurance 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 8.30.

**A.2.2 Department Testing**

**A.2.2.1 Verification Testing**

*Supplement standard spec 701.4.2 with the following:*

The department will perform verification testing as follows:

| | Testing Frequency Guide*[1]* | Sampling Material and Location | Test Method | Alternate Test Methods |
|---|---|---|---|---|
| Air content | 1 per lot | Plastic concrete, ahead or behind*[2]* the paver | AASHTO T 152 as modified | Hardened air content testing*[2]* after construction |
| 28-day compressive strength | 1 per lot | Cylinders | AASHTO T 22, T 23 and T 141 as modified | Random cores*[2]* after construction |

*[1]* The engineer may increase the frequency at start-up or as necessary to validate the quality of the materials.

*[2]* Evaluation of test results shall account for systematic differences in testing methods or sampling locations.

Plot verification tests on the contractor's quality control charts as specified in B.4.1. Do not include verification tests in the 4-point running average.

**A.2.2.1.1 Independent Assurance Testing**

*Supplement standard spec 701.4.3 with the following:*

Plot the independent assurance tests on the contractor's quality control charts as specified in A.2.1. Do not include independent assurance tests in the 4-point running average.

**A.2.3 Contractor Testing for Small Quantities**

*Supplement standard spec 701.2.2(3) with the following:*

1. No concrete control charts are required. Submit test results to the engineer each day as they become available. Ensure that all properties are within the limits specified in the standard specs for each sublot tested.

**B Materials**
**B.1 Class I Concrete Mixes**
**B.1.1 General**
*Supplement standard spec 501 with the following:*

Use clean, hard, durable crushed limestone with 100 percent fractured surfaces and free of an excess of thin or elongated pieces, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.

Use virgin aggregates only.

**B.1.2 Aggregates**
**B.1.2.1 Fine Aggregates**
*Delete standard spec 501.2.5.3.4.*

**B.1.2.2 Course Aggregates**
**B.1.2.2.1 Deleterious Substances**
*Replace standard spec 501.2.5.4.2(1) with the following:*

The quantity of deleterious substances shall not exceed the following percentages:

| DELETERIOUS SUBSTANCE | PERCENT BY WEIGHT |
|---|---|
| Shale | 1.0 |
| Coal | 1.0 |
| Clay lumps | 0.3 |
| Soft fragments | 3.0 |
| Any combination of above | 3.0 |
| Thin or elongated pieces based on a 3:1 ratio | 15.0 |
| Materials passing the No. 200 (75 µm) sieve | 1.5 |
| Chert[1] | 3.0 |

[1] Material classified lithologically as chert and having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of chert by dividing the weight of chert in the sample retained on a 3/8-inch (9.5 mm) sieve by the weight of the total sample.

**B.1.2.3 Combined Aggregate Gradation**
*Replace standard spec 715.2.2(1) items 2 and 3 with the following:*

2. The percent passing the 1 inch (25 mm) sieve is less than or equal to 95.
3. The percent passing the No. 4 (4.75 mm) sieve is less than or equal to 47.

## C Construction

### C.1 Sampling and Testing

#### C.1.1 Aggregate Testing

##### C.1.1.1 General

*Supplement standard spec 710.5.6.1 with the following:*

Ensure that only results of randomly selected QC tests are included in the 4-point running average.

Use control limits for sieve sizes as identified in the project concrete mix report or, if the concrete mix report is not published at the time of testing, in the contractor's quality control plan. Gradation warning limits are inside the upper and lower control limit values by one percentage point for all sieves except as follows:

1. The upper warning limits for percent passing the No. 100 (150 μm) and No. 200 (75 μm) sieves are inside the control limit by 0.5 percent.
2. For sieves allowing 100 percent passing, there is no upper warning limit. For sieves with 0 percent passing, there is no lower warning limit.

### C.2 Testing and Acceptance

#### C.2.1 Class I Concrete Testing

##### C.2.1.1 Lots by Lane-Feet

*Supplement standard spec 715.3.1.2.2 with the following:*

Lots and sublots may include concrete from more than one day of paving.

A sublot is 350 linear feet for 3-lane paving width or 2-lane plus shoulder.

Sublots at either end of a paving pass may be greater than 1000 lane-feet in size to accommodate the actual project length and staging requirements. For ease of layout, begin the first sublot at the first even station of the project. Place the resulting partial quantity into the first full sublot.

Document the locations and quantities of integral shoulders, and identify the travel lane sublot tests used for acceptance. For a shoulder pavement placed in a separate paving pass, designate separate lots and sublots.

### C.3 Strength Evaluation

#### C.3.1 Pavement

*Replace standard spec 715.3.2.2.1 with the following:*

If a sublot strength is less than 3000 psi (17.2 MPa), the department may direct that sublot to be cored to determine its structural adequacy and whether to direct removal. Cut and test cores according to AASHTO T 24 as and where the engineer directs. Have an HTCP certified PCC technician I perform or observe the coring. Bear all coring and testing costs,

fill all core holes with an approved grout, and provide traffic control during coring at no cost to the department.

The sublot pavement is conforming if the compressive strengths of all cores from the sublot are 3000 psi (17.2 MPa) or greater or the engineer does not require coring.

The sublot pavement is nonconforming if the compressive strengths of any core from the sublot is less than 3000 psi (17.2 MPa). The department may direct removal and replacement or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

**C.3.2 Acceptance**
The department will accept concrete pavement based on the contractor QC tests unless it is shown through the verification or the dispute resolution process that the contractor's tests are in error.

**D (Vacant)**

**E Payment**
**E.1 General**
*Replace standard spec 715.5.1(4) with the following:*

The department will adjust pay for each lot using percent within limits (PWL) of the 28-day sublot average strengths for that lot. The department will measure PWL relative to the lower specification limit of 4500 psi.

**E.2 Pavements**
*Replace standard spec 715.5.2(1) through 715.5.2(3) with the following:*

(1) The department will adjust pay for each lot using equation "QMP 3.03" as follows:

| PERCENT WITHIN LIMITS (PWL) | PAY ADJUSTMENT[1] (dollars per square yard) |
|---|---|
| ≥ 85 to 100 | 0 |
| ≥ 30 to < 85 | (1.5/55 x PWL) – (127.5/55) |
| < 30 | -1.50 |

~~scf-715-006 (20170310)~~

## 114. Flexural Strength for Concrete Mix Design.

This special provision describes optional testing requirements for flexural strength during the mix design process. Conform to standard spec part 7 as modified in this special provision.

*Add the following to standard spec table 701-2:*

| TEST | TEST STANDARD |
|---|---|
| Flexural Strength of Concrete | AASHTO T97 |

*Replace standard spec 715.2.3.1(1) with the following:*

(1) Provide both compressive and flexural strength information to demonstrate the strength of the proposed mix design. Use either laboratory strength data for new mixes or field strength data for established mixes as follows:
   1. Use at least 5 pairs of cylinders for compressive strength. Demonstrate that the 28-day compressive strength will equal or exceed the 85 percent within limits criterion specified in standard spec 715.5.2.
   2. Use at least 5 pairs of beams for flexural strength. Demonstrate that the 28-day flexural strength will equal or exceed 650 psi.

stp-715-010 (20170615)

## 115. Fertilizer Type B Special, Item SPV.0030.001.

**A Description**

This special provision describes furnishing and incorporating special fertilizing material in the soil on areas of proposed seeding as shown on the plans, according to standard spec 629, and as hereinafter provided.

**B Materials**

629.2.1.3 – Fertilizer Type B Special

(1) Special Fertilizer shall conform to the following requirements:
Nitrogen, not less than 24% with 6% being slow-release
Phosphoric Acid, not less than 15%
Potash, not less than 9%

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

**C Construction**

629.3.1.3 – Fertilizer Type B Special

(1) Apply fertilizer containing at least 48 percent total nitrogen, phosphoric acid, and potash at 11 pounds per 1,000 SF, unless otherwise directed by the engineer.

**D Measurement**

(1) The department will measure the Fertilizer Type B Special bid item by the hundred pounds (CWT) acceptably completed, measured based on an application rate of 11 pounds per 1,000 square feet. The department will not measure fertilizer used for bid items under standard spec 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.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0030.001 | Fertilizer Type B Special | CWT |

Payment for Fertilizer Type B Special is full compensation for providing, hauling, placing and incorporating into the work.

## 116. Backfill Slurry, Item SPV.0035.005.

**A Description**

This special provision describes furnishing and placing backfill slurry.

**B Materials**

Use aggregate conforming to standard spec 501.2.5. The gradation for backfill slurry will be as follows:

| SIEVE | PERCENT PASSING (by weight) |
|---|---|
| 2” | 100 |
| 1 1/2” | 96 - 100 |
| 1” | 72 - 89 |
| 3/4" | 62 - 79 |
| 3/8” | 45 - 61 |
| No. 4 | 36 - 45 |
| No. 16 | 18 - 35 |
| No. 50 | 4 - 15 |
| No. 100 | 1 - 7 |
| No. 200 | $\leq$ 2.3 |

Weigh aggregates at a batch plant suitable for batching concrete masonry. Obtain aggregates from a department approved sources per standard spec 106.3.4.2.

Mix and deliver to the project site using a truck mixer. Add enough water meeting the requirements of standard spec 501.2.4 to enable the mixture to flow readily.

Conditional approval of backfill slurry shall be permitted per standard spec 106.2.4.

**C Construction**

Before placing backfill slurry provide for positive drainage of the area to be backfilled. Prevent segregation when discharging from the truck. Consolidation or compaction will not be required. Do not expose backfill slurry to freezing temperatures, frozen ground, or wet weather conditions within the first 24 hours of placement. Wait at least twelve hours before paving over the backfill.

**D Measurement**

The department will measure Backfill Slurry 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 as approved.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0035.005 | Backfill Slurry | CY |

Payment is full compensation for furnishing, providing positive drainage of the area to be backfilled, and placing backfill slurry.

Non-conforming slurry will be replaced at no additional cost to the department.

## 117. Roadway Embankment, Item SPV.0035.006.

**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.

*Supplement standard spec 207.2(1) with the following:*

The contractor may not place excess topsoil or other unstable soil in embankments when the embankment height exceeds 10 feet.

If the contractor utilizes offsite material to construct embankments, the material shall conform to standard spec 208 except as follows:

- The contractor shall be responsible for complying with all permit requirements in obtaining off site material.
- Delete standard spec 208.2.2(2).

**C Construction**
Construct roadway embankment in accordance with standard spec 207.3 except as follows.

*Supplement standard spec 207.3.6 with the following:*

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 and borrow construction.

If off site material is utilized, construction must conform to standard spec 208.3.

**D Measurement**
The department will not measure Roadway Embankment. The department will use pay plan quantity conforming to standard spec 109.1.1.2.

**E Payment**
The department will pay for plan quantities conforming to standard spec 109.1.1.2 at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0035.006 | Roadway Embankment | CY |

Payment is full compensation for furnishing offsite and onsite sources, for forming, compacting, shaping, sloping, trimming, finishing, and maintaining the embankments. If offsite materials are utilized for roadway embankments, payment includes 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. The Fuel Usage Factor is 0.23.

## 118. Excavation, Hauling, and Potential Reuse of Solid Waste Soil, Item SPV.0035.007.

**A General**
**A.1 Description**
This special provision describes excavating, stockpiling, testing, loading, relocating, and reusing solid waste soil within the WisDOT right-of-way on the project.

Perform this work conforming to the requirements of standard spec 205-003 and with appropriate parts of Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented in this special provision. 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 documented sites of concern within this project where excavation is required. Testing indicated that historic fill (containing petroleum compounds, defined herein as "solid waste soil") is present in soil at the following locations as the plans show:

- Ramp SW Station 1054+50SW to 1055+25SW from reference line to construction limits left, from approximately 2 to 8 feet bgs. Approximately 820 cubic yards (approximately 1,400 tons using a 1.7 tons per cubic yard conversion factor) of soil to be excavated from this area for storm sewers and grading may potentially be reused on the project as specified in Section A.5.

If other signs of contamination are encountered at these locations or elsewhere on the project, terminate excavation activities in the area and notify the engineer.

**A.3 Notice to the Contractor – USTs Beyond Construction Limits**

Two abandoned underground storage tanks (USTs) are present at the following location as shown on the plans:

- Ramp SE Station 1050+75, approximately 25 feet right of reference line.

The USTs are expected to be beyond the construction limits. These USTs are not owned by the WisDOT and will remain in place. Control construction operations at this location to ensure that excavation does not extend beyond the excavation limits indicated on the plans.

**A.4 Notice to the Contractor – Former Gas Station Beyond the Construction Limits**

A former gasoline filling station operated at the following location as shown on the plans:

IH 94 Mainline Station 1057+00.

The gas station existed within the present limits of the southbound lanes of IH 94, near the northeast corner of the intersection of CTH K and West Frontage Road until approximately 1960. The exact location of the former station and its improvements are unknown. The ultimate disposition of the USTs is undocumented; however they are expected to be beyond the excavation limits required for the highway project. Control construction operations at this location to ensure that excavation does not extend beyond the excavation limits indicated on the plans.

**A.5 Reuse of Solid Waste Soils**

Low-level impacted soil excavated from the locations listed in A.2 is characterized as Solid Waste Soil and can potentially be reused, pending contractor stockpiling in the right-of-way and further WisDOT-provided analytical testing. The proposed reuse area is as follows:

- IH 94 Southbound from Station 1062+25 to Station 1064+75, from approximately 10 to 55 feet left of the reference line.

Required capping of any reuse soil will be primarily facilitated by concrete or asphalt pavement structure (highway lanes, shoulders, other). Any reuse soils placed outside the footprint of the paved roadway will require capping consisting of 1 to 2 feet of clay (or equivalent fine-grained soil with a hydraulic conductivity equal to or less than $10^{6}$ cm/sec and with an organic content of less than 15percent). Cover the clay with topsoil and then seed.

Soils that are reused as project fill should not contain crushed asphalt or other non-exempt solid wastes.

**A.6 Excavation Management Plan Approval**

The excavation management plan for this project has been designed to minimize the off-site disposal of impacted material. The reuse strategy proposed in this particular special provision will require additional field efforts, analytical testing, WDNR evaluation, and WDNR concurrence prior to the reuse and capping of any of the above-described solid waste soil. The contractor acknowledges this is and is accepting of the lead times described in A.7 below. For further information regarding previous investigation and remediation activities in these areas contact:

| | |
|---|---|
| Name: | Andrew Malsom |
| Address: | 141 NW Barstow Street, Waukesha, WI 53187-0798 |
| Phone: | (262) 548-6705 |
| Fax: | (262) 548-6891 |
| E-mail: | Andrew.Malsom@dot.wi.gov |

**A.7 Coordination**

Coordinate work under this contract with the WisDOT BTS environmental consultant. Determine the environmental consultant by contacting the following at least 30 days before the pre-construction conference:

| | |
|---|---|
| Name: | Bryan Bergmann, P.G. |
| Address: | 150 N. Patrick Blvd. Ste. 180, Brookfield, WI 53045 |
| Phone: | (262) 901-2126 office, (262) 227-9210 cell |
| Fax: | (262) 879-1220 |
| E-mail: | bbergmann@trcsolutions.com |

The role of the environmental consultant will be limited to:

- Determining the location and limits of solid waste 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;
- Documenting that activities associated with management of solid waste soil are in conformance with the solid waste management methods for this project as specified in this special provision; and,
- Conducting all required additional analytical testing of stockpiled solid waste soil and obtaining the necessary concurrence for the reuse of solid waste 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 areas specified in this special provision to the environmental consultant. Also notify the environmental consultant at least three calendar days before beginning excavation activities in each solid waste soil area.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the solid waste soil areas. Perform excavation work in each of these areas on a continuous basis until excavation work is completed.

The environmental consultant will be responsible for obtaining the necessary concurrence for on-site reuse of the excavated solid waste from the WDNR. Do not transport soil offsite without prior approval from the environmental consultant.

**B (Vacant)**

**C Construction**
*Supplement standard spec 205.003 with the following:*

Control operations in the impacted areas to minimize the quantity of solid waste soil excavated and stockpiled for reuse within the project right-of-way.

Excavate the contaminated soil in the areas shown in the plan. Stockpile the material within the project footprint on DOT right-of-way, pending lab results and WDNR Technical Staff Evaluation. Construct and maintain a temporary stockpile of the material according to NR 718.05(3), including, but not limited to, placement of the contaminated soil/fill material on an impervious surface and covering the stockpile with impervious material to prevent infiltration of precipitation. Contractor-provided plastic sheeting is typically required for stockpiles to be placed on and covered with.

The environmental consultant will coordinate additional analytical testing of subject solid waste soil for a request for WDNR concurrence on reuse. Seven business days should be allowed for the laboratory to conduct this analytical testing and issue results. Immediately following receipt of analytical testing results, the environmental consultant will submit a

formal request for WDNR concurrence on the proposed reuse of solid waste soil. Fifteen business days should be allowed for WDNR technical staff to conduct a review and issue a response on the request for concurrence. In the event some or all of the material is not suitable to be reused, that material will need to be managed under the 205.0501.S pay item (*Excavation Hauling and Disposal of Petroleum Contaminated Soil*).

Prior to transportation of any solid waste soil, sufficiently dewater soils so as not to contain free liquids. Verify that the vehicles used to transport contaminated material are licensed for such activity according to applicable state and federal regulations.

When material is encountered outside the above-identified limits of assumed contamination that appears to have been impacted with petroleum or chemical products, or when other obvious potentially contaminated materials are encountered or material exhibits characteristics of industrial-type wastes, such as fly ash, foundry sand, and cinders, or when underground storage tanks are encountered, suspend excavation in that area and notify the engineer and the environmental consultant.

Groundwater may be present within the construction limits. Water generated during dewatering operations (if necessary) is expected to be permitted to discharge to the surface except in the contaminated areas. Contaminated groundwater generated from dewatering activities within the contaminated areas may exceed the surface water discharge limits for petroleum compounds specified in the DNR's "General Permit to Discharge under the Wisconsin Pollutant Discharge Elimination System" for "Contaminated Groundwater from Remedial Action Operations" (WPDES Permit No. WI-0046566-5), Table 3.1. Rainwater that comes in contact with the contaminated soil is also contaminated and shall be handled in the same manner as groundwater.

If dewatering is required in an area of observed contamination, water generated from dewatering activities may contain PAHs, VOCs, SVOCs, and Metals. Such water may, with approval of the City of Racine Wastewater Utility, be discharged to the sanitary sewer as follows:

1. Meet all applicable requirements of the City of Racine Wastewater Utility including the control of suspended solids. Perform all necessary monitoring to document compliance with City of Racine Wastewater Utility requirements. Furnish, install, operate, maintain, disassemble, and remove treatment equipment necessary to comply with City of Racine Wastewater Utility requirements.

2. Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities.

3. Notify the engineer of any dewatering activities, and obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

In the event that no sanitary sewer is nearby for the disposal of contaminated groundwater, the contractor shall haul the contaminated water to a treatment facility. Costs for this dewatering and disposing of contaminated water are incidental to the contract.

**D Measurement**
The department will measure Excavation, Hauling, and Potential Reuse of Solid Waste Soil in cubic yards of solid waste soil, reused as documented by the engineer.

**E Payment**
The department will pay for measured quantities specified in this special provision at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0035.007 | Excavation, Hauling, and Potential Reuse of Solid Waste Soil | CY |

Payment is full compensation for excavating, segregating, stockpiling (including contractor-provided plastic sheeting to cover as well as place the material on), subsequent loading, hauling, and placing of solid waste soil for reuse; obtaining solid waste collection and transportation service operating licenses; assisting in the collection of soil samples for field evaluation; and dewatering of soils before transport, if necessary.
sef-205-005 (20170330)

## 119. EBS Excavation, Item SPV.0035.008.

**A Description**
This special provision describes excavating and disposing of material taken below the subgrade of future pavement structures at locations determined by the engineer.

**B Materials**
Excavate all materials below subgrade not classified as rock, stone piles and stone fences, or marsh excavation. Perform work according to standard spec 205.2.2 and as hereinafter provided.

**C Construction**
Perform work according to the pertinent provisions of standard spec 205.3 and as hereinafter provided.

**C.1 Yielding Subgrade**
After rough grading on all or a portion of the subgrade in cut areas and in areas requiring 2 feet or less embankment is complete and the grade is ready for blue tops, point out areas of yielding subgrade to the engineer. The engineer will evaluate the subgrade to determine if EBS Excavation is required.

If the engineer requests, provide loaded trucks and run the subgrade as the engineer directs to confirm yielding areas. Perform EBS Excavation in yielding areas as directed by the engineer.

**C.2 Excavation Below Subgrade**
Excavate materials as directed by the engineer. Remove deposits of frost-heave material, unstable silty soils, wet and unstable soil, material salvaged from old road cores in marshes, topsoil containing considerable amounts of humus or vegetable matter, rocks, or other undesirable foundation material to the depth below finished grade as the engineer directs.

Compact, or prepare otherwise as required, the existing ground within the roadway foundation as necessary to support the roadway and attain the specified density.

Dispose of all excavated materials offsite at no expense to the department. Locate disposal sites outside the right-of-way and comply with all regulations relating to disposal of solid waste. Ensure that disposal sites are neatly constructed. In performing these operations, do not create a nuisance or cause pollution or siltation of natural watercourses, streams, lakes, wetlands, or reservoirs. Obtain written permits for disposal from the owner of the property where placing the material, unless disposing of the material at a licensed waste disposal operation. Furnish permits, or copies of permits, to the engineer before disposal. Do not deposit waste in wetlands.

**C.3 Temporary Drainage**
During construction, slope and drain the excavation bottoms to prevent water accumulation. If it is necessary in the prosecution of the work to interrupt existing surface drainage, sewers, or under drainage, provide temporary drainage until completing permanent drainage work.

**D Measurement**
The department will measure EBS Excavation by the cubic yard acceptably completed as computed using the method of average end areas, with no correction for curvature.

The department will not measure for payment materials excavated in forming benches or steps in preparing the foundation for embankments placed on slopes.

The department will not measure for payment materials excavated to remove frost from newly constructed embankments or cut subgrades unless directed by the engineer.

If undercutting designated slopes to provide for placing topsoil or salvaged topsoil, the undercut is incidental to the Topsoil or Salvaged Topsoil bid items.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0035.008 | EBS Excavation | CY |

Payment for EBS Excavation is full compensation for performing excavation below subgrade after receiving engineer approval; for the satisfactory disposal of all resulting material offsite; for obtaining and furnishing copies of permits; for furnishing, placing, and

removing all temporary drainage installations; and for providing loaded trucks and running them on the subgrade to confirm yielding areas.

The department will only pay for engineer-approved EBS Excavation to correct problems beyond the contractor's control. Work performed under standard spec 105.3 to correct unacceptable work is the contractor's responsibility.

ASP-5 will be applied to this item. The Fuel Usage Factor is 0.23.

## 120. EBS Backfill, Item SPV.0035.009.

### A Description

This special provision describes backfilling EBS Excavation with select crushed material.

### B Materials

Furnish all materials according to standard spec 312.2 and as hereinafter provided.

### C Construction

Place select crushed material where EBS Excavation was performed or as the engineer directs. Compact select crushed material using standard compaction conforming to standard spec 301.3.

### D Measurement

The department will determine weight or volume, adjust for moisture, and convert between weight and volume as specified in standard spec 301.4.

The department will measure EBS Backfill 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.0035.009 | EBS Backfill | CY |

Payment for EBS Backfill is full compensation for providing and compacting select crushed material in areas of EBS Excavation.

The department will only pay for EBS Backfill at engineer-approved EBS Excavation locations. Work performed under standard spec 105.3 to correct unacceptable work is the contractor's responsibility.

The department will not pay for EBS Backfill to replace materials excavated to remove frost from newly constructed embankments or cut subgrades.

## 121. HPC Masonry Structures, Item SPV.0035.400.

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. This special provision also describes QMP concrete pavement and structures. Conform to standard spec 715 as modified in this special provision.

*Modify the standard spec as follows:*

**501.2.5.4.1 General**
*Replace the entire text with the following:*

(1) Use clean, hard, durable crushed limestone with 100percent fractured surfaces and free of an excess of thin or elongated pieces, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.

(2) Use virgin aggregates only.

**501.2.5.4.2 Deleterious Substances**
*Replace paragraph one with the following:*

(1) The quantity of deleterious substances must not exceed the following percentages:

| DELETERIOUS SUBSTANCE | PERCENT BY WEIGHT |
|---|---|
| Shale | 1.0 |
| Coal | 1.0 |
| Clay lumps | 0.3 |
| Soft fragments | 5.0 |
| Any combination of above | 5.0 |
| Thin or elongated pieces based on a 3:1 ratio | 15.0 |
| Materials passing the No. 200 sieve | 1.5 |
| Chert[1] | 1.0 |

[1] Material classified lithologically as chert and having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of chert by dividing the weight of chert in the sample retained on a 3/8-inch sieve by the weight of the total sample.

**501.2.5.4.3 Physical Properties**
*Replace paragraph one with the following:*

(1) The department will ensure that Los Angeles wear testing conforms to AASHTO T 96, soundness testing conforms to AASHTO T 104 using 5 cycles in sodium sulfate solution on aggregate retained on the No. 4 sieve, and freeze-thaw soundness testing conforms to

AASHTO T 103. The percent wear must not exceed 30, the weighted soundness loss must not exceed 6 percent, and the weighted freeze-thaw average loss must not exceed 15 percent.

**501.2.9 Concrete Curing Materials**
*Replace the entire text with the following:*

(1) Furnish burlap conforming to AASHTO M 182, class 1, 2, 3 or 4.

**501.3.2.4.3.3 Extended Delivery Time**
*Delete paragraph one.*

**501.3.5.1 General**
*Replace paragraph one with the following:*

(1) Use central-mixed concrete as defined in standard spec 501.3.5.1(2) for all work under this special provision.

**501.3.5.2 Delivery**
*Replace paragraph three with the following:*

(3) Deliver and discharge all concrete within one hour beginning when adding water to the cement, or when adding cement to the aggregates. A decrease in air temperature below 60 F or the use of department-approved retarders does not increase the discharge time.

**501.3.7.1 Slump**
*Replace the entire text with the following:*

(1) Use a 2-inch to 4-inch slump
(2) Perform the slump tests for concrete according to AASHTO T 119.

**501.3.8.2.1 General**
*Replace paragraphs one and two with the following:*

(1) Take the following steps to ensure the quality of the concrete placed. 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.

**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 air conditions at the time and place of the pour using the nomograph, or computerized equivalent, specified in CMM 5.25, figure 1. Use weather information from the nearest national weather service station. The engineer will use this information to determine if the pour will proceed as scheduled.

(6) At least 8 hours before each pour, the engineer will inform the contractor in writing whether or not to proceed with the pour as scheduled. If the actual computed evaporation rate during the pour exceeds 0.15 pounds per square foot per hour, at the engineer's discretion, the contractor may be allowed to implement immediate corrective action and complete the pour. If the engineer allows the placement to continue, the department will pay $0.75 per pound for the quantity of ice required to maintain the concrete surface evaporation at or below 0.15 pounds per square foot per hour.

**502.3.2.1 Detailed Plans**
*Replace the entire text with the following:*

(1) As specified in 105.2, submit four copies of detailed plans and computations for falsework, signed and sealed by a professional engineer registered in the State of Wisconsin, three weeks before erection of falsework for review and acceptance. Acceptance of the detailed plans and computations will in no way relieve the contractor of the responsibility of providing a safe and stable structure, and obtaining satisfactory results.

**502.3.5.4 Superstructures**
*Delete paragraph six.*

**502.3.7.8 Floors**
*Replace paragraph five with the following:*

(5) Set the rails or tracks that the finish machine rides on, to the required elevation; and ensure they adjust to allow for settlement under load. Support the rails or tracks outside the limits of the finished riding surface. Do not support rails or tracks on the tops of girders, or within the finished riding surface, without the engineer's written permission.

*Delete paragraph thirteen, fourteen, and fifteen.*

*Add the following to the end as paragraphs nineteen, twenty, twenty-one, twenty-two, and twenty three:*

(19) Do not place bridge deck concrete more than 10 feet ahead of the finishing machine. If there is a delay of more than 10 minutes during the placement of a bridge deck, cover all concrete (unfinished and finished) with wet burlap to protect the concrete from evaporation until placement operations resume.

(20) Keep hand finishing, except for the edge of deck, to a minimum. Equip the finishing machine with a pan behind the screed. Apply micro texture using a broom or turf drag following the use of a 10-foot straight edge. Only finish by hand as necessary to close up finished concrete. Begin wet curing the deck within a timeframe acceptable to the engineer following the micro texture.

(21) For bridge decks with a design speed of 40 mph or greater, provide longitudinal grooving according to the provision included in this contract.

(22) Place HPC Masonry Structures for bridge decks 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.

(23) 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

**502.3.8.1 General**
*Replace paragraph one with the following:*

(1) Maintain adequate moisture throughout the concrete mass to support hydration for at least 14 days.

**502.3.8.2.1 General**
*Replace the entire text 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 or wetted cotton mats within 10 minutes after the finishing machine has passed. Apply the burlap/cotton gently to minimize marking of the fresh concrete. Keep the first layer of burlap/cotton continuously wet until the bridge deck or overlay is sufficiently hard to apply a second layer of wetted burlap/cotton. Immediately after applying the second layer of burlap/cotton, continue to keep the deck wet until placing

and activating the soaker hose system. Throughout the remainder of the curing period, keep the burlap/cotton continuously wet with soaker hoses hooked up to a continuous water source. Inspect the burlap/cotton twice daily to ensure the entire surface is moist. If necessary, alter the soaker hose system as needed to ensure the entire surface is covered and stays moist. After 48 hours from the time of completion of the bridge deck or overlay pour, the soaker hose system and burlap/cotton may be covered with polyethylene sheeting. Provide a continuous flow of water through the soaker hose system for the entire curing period.

(2) Do not uncover any portion of the deck during the first 7 days of the curing period except as allowed by the engineer.

(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 within a timeframe acceptable to the engineer after form removal and surface finish application. Keep the burlap thoroughly wet for at least seven days; or by covering for the same period with thoroughly wet polyethylene-coated burlap conforming to standard spec 502.2.6.4

(2) Secure coverings along all edges to prevent moisture loss.

**502.3.9.6 Bridge Decks**
*Replace paragraph two with the following:*

(2) Protect the underside of the deck, including the girders, for bridge deck and overlay pours by housing and heating when the national weather service forecast predicts temperatures to fall below 32° F during the cold weather protection period. Maintain a minimum temperature of 40° F in the enclosed area under the deck for the entire 14-day curing period.

**502.4.2 Concrete for Bridges**
*Replace with the following:*

The department will not measure HPC Masonry Structures. The department will use pay plan quantity conforming to standard spec 109.1.1.2.

**502.5.1 General**
*Replace paragraph one with the following:*

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0035.400 | HPC Masonry Structures | CY |

Lighting for nighttime bridge deck placement is included.

**710.5 Sampling and Testing**
*Add the following subsection:*

**710.5.7 Chloride Penetration Resistance**

(1) For each new or changed mix design, measure chloride penetration resistance according to AASHTO T 277 (Rapid Chloride Permeability Test) at a frequency of 1 test per 3 months (quarterly) of production.

(2) Strip permeability samples for AASHTO T 277 testing of their molds and wet cure to an age of 7 days in a standard moist room or water tank. After 7 days, submerge the samples in water heated to 100 F until an age of 28 days. Upon completion of the curing process, obtain one sample from each cylinder and test according to AASHTO T 277.

(3) Ensure that the initial accepted mix designs meet the chloride penetration resistance limit of 1500 coulombs based on the AASHTO T 277 Rapid Chloride Permeability test. Chloride resistance testing conducted quarterly using AASHTO T 277 Rapid Chloride Permeability Test during production will not be used for acceptance of previously accepted mixes and concrete masonry mixed and placed according to the contract requirements. For quarterly chloride resistance test results exceeding 1500 coulombs, the department may require adjustment of the concrete mix going forward to improve the chloride penetration resistance.

**715.2.3.2 Structures**
*Replace paragraph one with the following:*

(1A) Develop and test each mix to be used for HPC Masonry Structures. Produce a laboratory trial mix for each mix, as well as a trial mix from each plant used to supply the project. Test all mixes at a department-qualified laboratory.

(1B) The laboratory trial mix data must include the results of the following tests:

1. AASHTO T 119 Slump of Hydraulic Cement Concrete.
2. AASHTO T 121 Mass per Cubic Foot, Yield
3. AASHTO T 152 Air Content.
4. AASHTO T 22 Compressive Strength.
5. AASHTO T 277 Rapid Determination of the Chloride Permeability of Concrete, using the modified curing procedure according to 710.5.7 (2) in this special provision.

6. AASHTO T 309 Temperature.
7. Water Cement Ratio.

(1C) The 28-day compressive strength must be at least 4000 psi. The 28-day results of the permeability test must be at most 1500 coulombs.

*Replace paragraph two with the following:*

(2) Provide a cementitious content within a range of 470 to 540 pounds per cubic yard. For all superstructure and substructure concrete, unless the engineer approves otherwise in writing, conform to one of the following:

1. Use class C fly ash, class F fly ash, or grade 100 or 120 slag as a partial replacement for portland cement. For binary mixes use fly ash within a range of 15 to 30 percent or slag within a range of 20 to 30 percent. For ternary mixes use fly ash plus slag in combination within a range of 15 to 30 percent. Percentages are stated as percent by weight of the total cementitious material in the mix.
2. Use a type IP, IS, or IT blended cement.

sef-715-005 (20180104)

## 122. Portable Speed Trailer, Item SPV.0045.001.

### A Description

This special provision describes furnishing, hauling, placing, erecting, re-erecting, operating, maintaining, moving and removal of portable speed trailers during the construction of this project.

### B Materials

Furnish portable speed trailer conforming to the appropriate requirements of standard spec 643 and the Manual on Uniform Traffic Control Devices (MUTCD), latest edition, for portable changeable message signs (PCMS).

In rural areas with no view obstructions, the contractor may reduce the minimum mounting height to 5 feet.

Provide a battery powered device with a regulatory speed limit sign and a radar speed sign displaying speed in mph. The flash rate should be between 50 and 60 cycles per minute. Place the sign so that in the operating mode the bottom of the message panel is 5 feet or higher above the top of curb or near edge of pavement. Orient the message panel so the message is legible from 850 feet under both day and night conditions.

### C Construction

Furnish, haul, place, erect, re-erect, operate, maintain, move, and remove devices at locations as the plans show and as directed by the engineer.

Coordinate the placement and duration of these devices with the engineer at least 24 hours before its intended use and accommodate within the project. Provide an area to park the devices that is still visible to traffic.

Space five traffic control drums at 10 foot intervals as needed in front of the portable speed trailer.

Move devices not performing as intended to the satisfaction of the engineer within 24 hours of notification.

**D Measurement**

The department will measure Portable Speed Trailer by the day, acceptably completed. For this special provision, the number of days measured is defined as the number of calendar days that the portable speed trailer is used in moving operations or short-term stationary work. A calendar day begins with each deployment within a defined time-frame and exceeding two hours.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0045.001 | Portable Speed Trailer | DAY |

Payment is full compensation for furnishing, hauling, placing, erecting, re-erecting, operating, maintaining, moving and removal of portable speed trailers during the construction of this project. Drums are paid separately under traffic control items.
sef-643-025 (20171004)

## 123. Dynamic Late Merge System, Item SPV.0045.002.

**A Description**

This special provision describes furnishing, installing, operating, maintaining, monitoring, and removing a dynamic late merge system (DLMS) and/or delay time system as shown in the plans as necessary during construction work. The DLMS and/or delay time system are types of Intelligent Work Zone Systems. Actual deployment locations to be determined in the field by the engineer and vendor/manufacturer based on ramp locations and other field conditions.

**B Materials**

Provide a DLMS consisting of static traffic control signs with temporary flashing beacons, Portable Changeable Message Signs (PCMS), Traffic Detectors (TD), and an Automated System Manager (ASM) per direction of traffic flow.

**B.1 System Operations**

Provide an ASM with a module that allows for user input of triggering data thresholds based on speed, vehicle occupancy, and/or volume detected by the connected vehicle detectors.

The DLMS must operate as a unit where the flashing beacons and the PCMS activate at the same time for the same scenario. The contractor may base system operation on as little as one traffic detector.

The ASM must ensure that the messages sent to the connected PCMS and flashing beacons are synchronized so that all the messages on all the PCMS are for the same traffic conditions.

Additionally, the ASM must contain a feature that displays a communications status of all the detectors and PCMS and displays a warning to the user if any PCMS or detectors are failing to communicate.

**B.2 Portable Changeable Message Signs (PCMS)**
Provide PCMSs according to the bid item 643.1050 Traffic Control Signs PCMS.

**B.3 Static Traffic Control Signs with Temporary Flashing Beacons**
Provide static traffic control signs with temporary flashing beacons according to standard spec 658.2.2, Traffic Signal Faces.

**B.4 Traffic Detectors (TD)**
Provide TDs that are non-intrusive and capable of capturing traffic speed (mph), traffic vehicle occupancy, and traffic volume. Arrange coordination between the vendor/manufacturer and the engineer as to quantity and location of TD(s), and as to which specific detector(s) shall collect speed, occupancy, and volume data, and for what duration. The location of the TD(s) may not correspond with the location of the PCMSs.

**B.5 Automated System Manager (ASM)**
Provide ASM that assesses current traffic data captured by the TDs, determine the appropriate merging strategy based upon pre-determined criteria, and communicate appropriate messages to the traveling public through the PCMS. Provide real-time data from the ASM to a website. Locate the ASM within the project limits or house at a remote facility of the vendor's choosing.

Provide access to the ASM website, including speed and volume data, and current PCMS message, to project staff.

**B.6 Data**
Provide speed, occupancy, and volume data that are available to the department's staff at all times for the duration of work zone activity. Historical data must be password protected and stored on the website for each day the system is in use, with date and time stamps included. Provide an electronic copy of all data to the department staff each week for the duration of work zone activity and until the DLMS has been removed.

**B.7 System Settings**
Provide a password protected login to the ASM settings input module so that department staff may modify the settings used to trigger messages through the PCMS, modify or create

messages for the respective PCMS for each respective traffic condition, and override the DLMS to display messages for other traffic conditions.

**B.8 System Acceptance**

Within 14 days after the bid opening the apparent low-bidder must submit vendor verification that the system will adequately perform the functions specified in this special provision. Adequate verification includes past successful performance of the system in Wisconsin, successful deployments in neighboring states, literature and references from successful use of the system by other agencies, and/or demonstration of the system to designated department staff upon request.

Within 14 days of receipt of the materials, the department will review the submittals and notify the contractor regarding acceptability of the proposed system, comments regarding inadequacies of the submittal to address, or denial of the proposed system due to failure to meet the requirements of this specification. Upon receipt of the department comments, the submittal and review cycle will begin again. Based on the comments from the department, resubmit materials to address issues or propose an alternate system within the materials submittal and review cycle described above.

Provide the contact information for a designated representative responsible for monitoring the performance of the system and for making modifications to the operational settings as directed by the engineer.

Furnish all testing and calibration equipment.

**C Construction**

**C.1 General**

Provide a DLMS that accommodates a minimum of four distinct traffic conditions: Free Flow, Congestion, Loss of DMS Communication, and Manual Override.

Have the system in place and operational seven days in advance of the start of lane closures.

**C.2 System Operation Strategy**

Arrange that the vendor/manufacturer coordinate system operation, detection, trends/thresholds, and messaging parameters with: the engineer, the Southeast Region Work Zone Engineer, Rebecca Klein (262) 822-5947; the department's Bureau of Traffic Operations representative, Jeff Madson, (414) 225-3723; and the construction contractor.

<u>Free Flow:</u>

The free flow traffic conditions are to be determined by WisDOT and input by the designated representative or department staff as directed by the engineer, but typical traffic conditions that warrant this strategy may include:

Trend of vehicle speeds at one or more point above an adjustable parameter. This parameter should be set for optimal results based on on-site monitoring and review as directed by the engineer.

Typically greater than 50 mph may be utilized as a guideline.

A trend of vehicle volume at one or more point below an adjustable parameter. This parameter should be set for optimal results based on on-site monitoring and review as directed by the engineer. Typically less than 1000 vehicles/hour/lane may be utilized as a guideline.

A trend including increased vehicle speeds together with reduced volume. These parameters should be set for optimal results based on on-site monitoring and review as directed by the engineer.

During Free Flow conditions, display no lane use messages, and therefore allow traffic to resume typical early merge operation.

Congestion:
The congestion traffic conditions are to be determined by WisDOT, but typical traffic condition warrants may include:

A trend of vehicle speeds at one or more points below an adjustable parameter. This parameter should be set for optimal results based on on-site monitoring and review as directed by the engineer. Typically less than 45 mph may be utilized as a guideline.

A trend of vehicle volume at one or more point above an adjustable parameter. This parameter should be set for optimal results based on on-site monitoring and review as directed by the engineer. Typically greater than 1500 vehicles/hour/lane may be utilized as a guideline.

A trend including reduced vehicle speeds together with increased volume. These parameters should be set for optimal results based on on-site monitoring and review as directed by the engineer.

When traffic conditions warrant a change to the late merge strategy, activate the temporary flashing beacons and display lane use messages on the PCMS together. Example messages for congestion traffic conditions are below. Locate the PCMS in advance of the lane closure as determined by the engineer and system provider based upon estimated queue lengths and project geometry.

Quantity and approximate locations of PCMS for various stages are shown in the plans.

The individual PCMS in the system shall initially display the following messages:

- Point of merge:
  MERGE HERE – TAKE TURNS

- Intermediate PCMS:
  DO NOT MERGE – USE ALL LANES

- PCMS located beyond estimated maximum queue length:
  IH 94 EASTBND – BACKUPS AHEAD or
  IH 94 WESTBND – BACKUPS AHEAD

Loss of Communication:
If the DLMS has a loss of communication between the TD locations, display no message on the PCMS and display a warning message on the ASM interface.

Manual Override:
If the DLMS is needed to provide additional information due to other traffic concerns, the engineer will have the capability to manually override the PCMS display. The WisDOT Statewide Traffic Operations Center will also have the capability via website to change messages. Arrange that the vendor/manufacturer document all override messages.

**C.3 Calibration and Testing**
After the DLMS has been installed, the vendor shall successfully perform a field test and calibration at the DLMS location to verify the system is detecting accurate vehicle speeds and volumes, accurately relaying the information to the ASM and then to the PCMS.

Verify that the traffic flow information (speeds, volumes and occupancy) obtained from each TD is within +/- 5 percent of each of two 10- minute manual data periods.

**D Measurement**
The department will measure Dynamic Late Merge System per each system, acceptably complete per day. Arrange that the vendor/manufacturer provide technical personnel for all system calibration, operation, maintenance, and timely on-call support services.

Upon notification to the designated contractor representative of a perceived deficiency in the operation of the system, or any individual part of the system, corrections to the system must be made within 24-hours. Failure to correct the deficiency will result in deduction of payment due the contractor for each day in which the deficiency is not corrected.

Any day in which the DLMS, or any individual part of the system is not working properly for more than 30 minutes will result in one day being deducted from the quantity measured for payment. It is the engineer's sole discretion to assess the deductions for an improperly working DLMS. There will be no deductions in payment if the engineer decides not to use the DLMS at any time, even though the DLMS is fully functioning.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0045.002 | Dynamic Late Merge System | DAY |

Payment is full compensation for furnishing, installing, operating, maintaining, monitoring, and removing the complete system, including Portable Changeable Message Signs (PCMS), Traffic Detectors (TD), an Automated System Manager (ASM), data, system acceptance, and traffic control signs with temporary flashing beacons.

## 124. Dispute Resolution Board, Item SPV.0055.002.

**A Description**

This special provision describes the process for resolving disputes between the contractor and the department by formation of an impartial resolution board to mediate disputes and serve as a technical advisor to both parties.

The purpose of a Dispute Resolution Board (DRB) is to resolve claims in a manner that complies with the contract, is impartial, and expedites the standard claims process. The DRB will do so by issuing recommendations that may be binding or non-binding depending on the claim amount.

**B (Vacant)**

**C (Vacant)**

**D Measurement**

There must be mutual agreement between the department and the contractor before initiating the DRB.

If agreed upon, the DRB scope of work will include staying abreast of project developments by:

a) Periodic site visits
b) Attendance of project meetings
c) Review of project progress reports, meeting minutes, and other job documents
d) Advisory services
e) Other means mutually agreed by all parties.

If initiated, it can be expected that the DRB will meet once to establish the board and three times thereafter. If mutually agreed upon and deemed necessary by both the department and the contractor, additional meetings, including meetings for claims resolutions, will be scheduled.

If the DRB desires special services such as legal, technical, or other expert assistance or testimony, or other consultation, both the department and the contractor must agree to the special services.

**E Payment**
DRB members shall be compensated as prescribed in the agreement.

The following payment procedures will be used:

The DRB members shall submit invoices to the regional construction supervisor for review. After the regional construction supervisor has reviewed and approved the invoices, the invoices will be forwarded to the contractor for review and approval

If the contractor approves the invoices, the contractor shall pay all approved invoices.

The contractor shall provide the project manager documentation verifying payment.

The department will then pay the contractor one-half of the contractor paid invoice.

The department will provide, at own expense, administrative services such as coordination of the DRB and state owned conference facilities. If other facilities and amenities are desired by both parties, these facility and amenity expenses shall be shared equally by both parties. The department and the contractor shall bear the costs and expenses of the DRB equally. Each DRB member shall be compensated and reimbursed expenses as prescribed in the Agreement executed by the department, contractor, and DRB member.

No markups are applied to expenses connected with the DRB, either by the DRB members or by the contractor when requesting payment of the department's share of DRB expenses. Regardless of the DRB recommendation, neither the department nor the contractor shall be entitled to reimbursement of DRB costs from the other party.

The department will pay for one-half of the contractor paid invoice under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0055.002 | Dispute Resolution Board | DOL |

These procedures and the Agreement contain all of the provisions for compensation and expenses of the DRB.
sef-105-015 (20160519)

## 125. Box Spillway 5’x5’, Item SPV.0060.001.

This work is according to standard spec 504, except as hereinafter modified.

**A Description**

(1) This special provision describes furnishing and installing Box Spillways at the locations shown on the plans according to the pertinent provisions of standard spec 504 and as hereinafter provided.

**B Materials**

(1) Furnish materials conforming to the requirements specified in standard spec 504.2.

**C Construction**

(1) Place Box Spillways as shown in the plans and as specified in standard spec 504.3.

**D Measurement**

(1) The department will measure each Box Spillway as each unit, acceptably completed.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.001 | Box Spillway 5'x5' | EACH |

(2) Payment for Box Spillway is full compensation for all excavating; all materials, including reinforcement; forms; placing, including reinforcement; finishing, curing, protecting, and heating.

## 126. Rootstock Vegetation, Item SPV.0060.002.

**A Description**

(1) This work shall consist of furnishing and planting wetland herbaceous plant rootstock of the species specified, complete in place at the locations designated on the plans or as directed by the engineer. It shall include furnishing all necessary materials and performing all necessary work such as excavating plant holes, anchoring rootstock plants, necessary care and required replacements pending acceptance, and such work necessary and incidental thereto to complete the item according to the plans, specifications, and contract.

**B Materials**

(1) All plant materials shall be nursery-grown stock, not wild-collected, from an area not to exceed 75 linear miles from the project site. All plants shall be healthy, 1 to 2 years old, with a well-developed root system. Plants that show evidence of mold or rot will be rejected. Species substitutions are not allowed. The following plant material shall be furnished:

| | | Number of Plants | |
|---|---|---|---|
| Scientific Name | Common Name | Pond NE | Pond SW |
| *Scirpus validus* | Softstem-bulrush | 52 | 143 |
| *Scirpus fluviatilis* | River-bulrush | 206 | 574 |
| *Scirpus Acutus* | Hardstem-bulrush | 52 | 143 |
| | | 310 | 860 |

## C Construction

### C.1 General

(1) Wetland rootstock (shelf planting) shall be planted between October 15 and November 15 or between May 1 and June 15. Planting shall not take place when the ground is frozen, or when the conditions are otherwise unsuitable for planting. The contractor shall give the engineer five working days' notice of the intended date of delivery of rootstock to the project site. All rootstock plants shall be presented to the engineer and DOT wetland/ecology department, (262) 548-6709, for inspection and acceptance prior to planting.

(2) All rootstock shall be handled with care and skill to prevent damage and shall be packed in a manner to ensure arrival at the project site in good condition. The rootstock shall be kept moist and cool prior to planting.

### C.2 Timing of Planting

(1) Wetland rootstock shall be planted on the day of delivery at the project site. In the event that this is not possible, the plants shall be temporarily stored by placing them in a well-ventilated, cool, shaded, moist storage space. The rootstock shall be adequately protected against drying by packing sphagnum moss around the roots. This storage period shall not exceed 48 hours.

### C.3 Planting Layout

(1) The shelf planting species shall be mixed randomly in their placement. They shall be planted at a uniform density of approximately one plant per square yard in those areas shown on the Planting Plan. Rootstock shall not be planted in rows.

### C.4 Planting Method

(1) Shelf planting shall be planted by hand with the use of a tree spud or other comparable method, or as directed by the engineer. If necessary, rootstock shall be anchored by means of a wire loosely wrapped around the rootstock and pressed firmly 1 to 2 inches into the ground.

### C.5 Care

(1) Freshly planted rootstock shall not be disturbed by subsequent activities that would cause uprooting or injury. The contractor shall properly care for all plants from the time of planting until the partial or final acceptance of the work under the contract. Proper care of plants shall consist of doing such watering and other work as necessary to keep the plants in a healthy growing condition. Complete waterings shall be performed at 2 to 3 day intervals between May 15 to September 15, if necessary. Such intervals may be lengthened when weather conditions and soil moisture permit. Additional waterings may be ordered by the engineer at any time during the plant establishment period, shall conditions require such waterings.

**D Measurement**

(1) The department will measure Rootstock Vegetation by the number of plants, complete in place and accepted according to the terms of the contract.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.002 | Rootstock Vegetation | EACH |

(2) Payment is full compensation for delivering, storing, and planting the rootstock, anchoring and supplying wire as necessary.

## 127. Salvaging Existing Barricade Rack, Item SPV.0060.004.

**A Description**

This special provision describes removing an existing barricade rack and installing it at a new location as the plans show or as directed by the engineer.

**B Materials**

Barricade racks consist of a wood and tubular steel rack, Permanent Barricades Type III with a "RAMP CLOSED" sign, and all associated hardware.

**C Construction**

Carefully remove any stored barricades from the barricade rack. Safeguard all parts from damage or loss, and retain the existing barricade rack's structural integrity for reuse during excavation and removal. The engineer will verify the structural integrity of the rack before and after removal. Store removed barricades and barricade rack on site in a secure location. Do not use the removed barricades for traffic control, as they are the property of the Wisconsin DOT. Protect this equipment from damage, theft or vandalism while it is stored. Before installation, the engineer will inspect the barricade rack at the storage site and verify that it is still structurally sound and can be reinstalled. Transport and reinstall barricade rack and barricades at a location as the plans show before reopening the project to traffic.

**D Measurement**

The department will measure Salvaging Existing Barricade Rack by each unit, acceptably removed, stored and reinstalled conforming to the contract.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.004 | Salvaging Existing Barricade Rack | EACH |

Payment is full compensation for removing, storing, and reinstalling the barricade rack and any barricades stored on it.

sef-662-005 (20170406)

## 128. Temporary Stone Ditch Checks, Item SPV.0060.012.

**A Description**
Furnish and install temporary stone ditch checks; clean and maintain ditch checks as shown on the plans or as directed by the engineer, and as hereinafter provided. This item also includes the removal and disposal of the ditch checks as directed by the engineer.

**B Materials**
Conform to standard spec 606.2.1 using the following gradation:

| INCHES | VOLUME OCCUPIED BY STONES |
|---|---|
| >8 | 0% |
| 4-6 | 50% - 90% |
| <2 | 5% or less |

Material shall be visually inspected and approved by the engineer.

**C Construction**
Place stone ditch checks immediately after shaping of the ditches or slopes are completed. Place stone checks at right angles to the direction of flow and construct in accordance to the details shown in the plans.

Remove sediment from behind the stone ditch checks when it has accumulated to one half of the original height of the dam. Perform cleaning in accordance to standard spec 628.

**D Measurement**
The department will measure Temporary Stone Ditch Checks by each item, 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.0060.012 | Temporary Stone Ditch Checks | EACH |

Payment is full compensation for furnishing, installing, maintaining, and cleaning; disposal of sediment; and for removing temporary ditch check.

Restoration of the area after ditch check removal shall be paid for with restoration items included in the contract.
(NER14-1104)

## 129. Fixed Message Sign Portable Support Special, Item SPV.0060.013.

**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.0060.013 | 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)

## 130. Mobilizations Emergency Pavement Repair, Item SPV.0060.016.

**A Description**
This special provision describes furnishing and mobilizing personnel, equipment, traffic control, and materials to the project site to repair the existing pavement for emergencies as the engineer directs. An emergency is a sudden occurrence of a serious and urgent nature, beyond normal maintenance of the existing pavement.

**B (Vacant)**

**C Construction**
Mobilize with sufficient personnel, equipment, traffic control, materials and incidentals on the jobsite within 4 hours of the engineer's written order to repair the existing pavement on an emergency basis.

**D Measurement**
The department will measure Mobilizations Emergency Pavement Repair as each individual mobilization, acceptably completed. The department will not include delivering and installing pavement repair or maintenance materials provided for in specific contract bid items. All

traffic control items used for each Mobilization will be considered incidental to the Mobilization.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid items:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.016 | Mobilizations Emergency Pavement Repair | EACH |

Payment is full compensation for the staged moving of personnel, moving equipment, setting up and removing traffic control, traffic control materials, and moving materials. The department will pay separately for delivery and installation of pavement repair materials under the other bid items in this contract. The department will not pay separately for traffic control items and materials even though they may be included in other bid items in this contract and will consider them incidental to each Mobilization.
sef-999-025 (20170310)

## 131. Barricade Rack, Item SPV.0060.018.

**A Description**
This special provision describes furnishing and erecting wood posts and perforated tubular steel to support Type III barricades.

**B Materials**
Conform to standard spec 634.2.1.

Conform to Upper Tube language in standard spec 634.2.5.

**C Construction**
Under the bid item Barricade Rack, furnish and install wood posts, perforated tubular steel, and all necessary miscellaneous hardware to complete the installation as specified in the plan details.

Conform to standard spec 634.3.1.

**D Measurement**
The department will measure Barricade Rack as each individual barricade rack, 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.0060.018 | Barricade Rack | EACH |

Payment is full compensation for furnishing and installing all materials, including wood posts, perforated tubular steel and all hardware and fittings necessary to install the barricade rack; and for providing corrosion prevention.

SEF Rev. 100805

## 132. Manhole 10-Feet, Item SPV.0060.027.

### A Description

(1) This special provision describes furnishing and installing manhole structures at the depths and locations shown on the plans according to the pertinent provisions of standard spec 611 and as hereinafter provided.

### B Materials

(1) Furnish materials conforming to the requirements specified in standard spec 611.2.

### C Construction

(1) Place manholes as shown in the plans and as specified in standard spec 611.3. Construct according to the standard detail drawing "Manholes 3-FT, 4-FT, 5-FT, 6-FT, 7-FT and 8-FT Diameter" except with a 10-ft interior diameter as indicated on the plans.

### D Measurement

(1) The department will measure each Manhole (diameter) separately as a unit, acceptably completed.

### E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.027 | Manhole 10-Feet | EACH |

(2) Payment will be as specified in standard spec 611.5.2.

## 133. Sign Support Galvanized Posts 8.5-FT, Item SPV.0060.028.

### A Description

This special provision describes furnishing and installing galvanized sign supports 8.5 feet in length, as shown in the plans, according to the applicable provisions of standard spec 634 and as hereinafter provided.

### B (Vacant)

### C (Vacant)

### D Measurement

The department will measure Sign Support Galvanized Posts 8.5-FT for each individual sign support post, furnished and installed acceptably.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.028 | Sign Support Galvanized Posts 8.5-FT | EACH |

Payment is full compensation for providing all materials, for fabricating, transporting, and erecting.

## 134. Exposing Existing Infrastructure Unpaved Area, Item SPV.0060.030.

**A Description**

This work includes locating and exposing existing infrastructure in unpaved areas as directed by the engineer. The contractor shall be responsible for compliance with s.182.0175 (2), Stats., with respect to precautions to be taken to avoid and prevent damage to utility facilities. The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. Conform to Wisconsin State Statute 182.0175 (2) and Wisconsin Administrative code Trans 220. The work includes exposing existing infrastructure, including utilities, under unpaved surfaces and providing both lateral and depth measurements for use in determining potential infrastructure conflict solutions, and backfilling.

**B Materials**

**B.1 Backfill Slurry**

Utilize backfill slurry as specified elsewhere in these special provisions.

**C Construction**

**C.1 General**

The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. This item will only be used as determined by the department for unique locations as directed by the engineer. It does not remove the contractor’s obligation to locate utilities as specified by Wisconsin Administrative code Trans 220 and Wisconsin State Statute 182.0175. The engineer will direct all exposing existing infrastructure in writing. Coordinate infrastructure exposures with the engineer and notify the infrastructure owner or their agents of this work two working days in advance so that they may be present when the work commences.

**C.2 Excavation**

Remove all unpaved surfaces at locations where the existing infrastructure is being exposed. Maintain drainage at all times in accordance to standard spec 205.3.3. Take precautions, including temporary shoring, in order to prevent any undermining of the existing roadway. Perform work in accordance 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), Kenosha/Racine 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 backfill slurry, 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, acceptably completed. 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.0060.030 | Exposing Existing Infrastructure Unpaved Area | EACH |

Payment is full compensation for mobilization; for furnishing 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 furnishing all surveying associated with exposing existing infrastructure; for furnishing all maintenance of the location during construction; for furnishing all traffic control, safety barriers, and steel plating required; or temporary shoring; for furnishing backfill slurry and backfilling the locate.

## 135. Exposing Existing Infrastructure Paved Area, Item SPV.0060.031.

**A Description**

This work includes locating and exposing existing infrastructure in paved areas as directed by the engineer. The contractor shall be responsible for compliance with s.182.0175 (2), Stats., with respect to precautions to be taken to avoid and prevent damage to utility facilities. The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. Conform to Wisconsin State Statute 182.0175 (2) and Wisconsin Administrative code Trans 220. The work includes exposing existing infrastructure, including utilities, under paved surfaces and providing both lateral and depth measurements for use in determining potential infrastructure conflict solutions, and backfilling.

**B Materials**

**B.1 Backfill Slurry**

Utilize backfill slurry as specified elsewhere in these special provisions.

**C Construction**

**C.1 General**

The location of existing utilities and infrastructure needed to complete the contract work shall be addressed independent of this provision. This item will only be used as determined by the department for unique locations as directed by the engineer. It does not remove the contractor’s obligation to locate utilities as specified by Wisconsin Administrative code Trans 220 and Wisconsin State Statute 182.0175. The engineer will direct all exposing existing infrastructure in writing. Coordinate infrastructure exposures with the engineer and notify the infrastructure owner or their agents of this work two working days in advance so that they may be present when the work commences.

**C.2 Excavation**

Remove all paved surfaces at locations where the existing infrastructure is being exposed. Saw or remove concrete and asphaltic pavements to the nearest joint. Remove all pavement surfaces in such a way that all existing edges consist of a true line having a perpendicular edge with no unraveling. Maintain drainage at all times in accordance to standard spec

205.3.3. Take precautions, including temporary shoring, in order to prevent any undermining of the existing roadway. Perform work in accordance 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), Kenosha/Racine 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 backfill slurry to fill the entire location to the subgrade elevation.

Restore concrete pavement and concrete base course to the depth found in the existing roadway. Replace all locations that fall within live lanes of any roadway or pedestrian traffic with a high early-strength concrete pavement mix design having a depth equivalent to the existing pavement structure unless directed otherwise by the engineer. Locations that are closed to through traffic may use an approved concrete pavement mix conforming to standard spec 501. If directed by the engineer, tie concrete pavement and/or dowel it to the existing pavement according to the standard detail drawing for concrete pavement. All locations requiring asphaltic pavement shall consist of HMA Pavement 3 MT 58-28 S unless otherwise directed by the engineer. Place the HMA pavement in lifts to a depth as directed by the engineer. Apply tack coat to composite pavement structures and between lifts. Alternate restoration methods may be used upon written approval from the engineer. Place base aggregate dense between the subgrade surface and the bottom of the pavement.

**C.4 Documentation**

Provide documentation to the engineer and include the coordinates, elevations, and sketches of the infrastructure locations tied to known features in the plans. Reference each infrastructure to a proposed alignment with a station and offset. Where near a ramp, reference the ramp alignment. Document the size and/or diameter, composition, and a

description of each infrastructure and the location of the elevation with respect to each infrastructure noted. Supply digital photographs of the uncovered infrastructure to the engineer in .jpeg format for future reference.

**D Measurement**

The department will measure Exposing Existing Infrastructure Paved Area as a unit for each location, acceptably completed. 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.0060.031 | Exposing Existing Infrastructure Paved Area | EACH |

Payment is full compensation for mobilization; for furnishing 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 furnishing all surveying associated with exposing existing infrastructure; for furnishing all maintenance of the location during construction; for furnishing all traffic control, safety barriers, and steel plating required; for temporary shoring; and for furnishing all finishing items including, but not limited to, base aggregate dense, backfill slurry, concrete pavement, HMA pavement, curb and gutter, and sidewalk located above the subgrade elevation.

## 136. Sand Bags, Item SPV.0060.032.

**A Description**

This special provision describes the construction of dikes or barriers with sand filled bags as shown on the plans.

**B Materials**

Provide bags made of canvas, burlap, nylon or other approved material. Use bags that will contain a minimum of one half cubic foot of sand, be of one size and shape and be securely closed.

Use sand that conforms to standard spec 501.2.5.3 except that standard spec 501.2.5.3.4 shall be deleted. The maximum size of particle shall pass a No. 4 sieve.

**C Construction**
Remove and dispose of the sand bags and all surplus material upon completion of its use under this contract.

**D Measurement**
The department will measure Sand Bags as each individual sand bag, placed and accepted.

**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.0060.032 | Sand Bags | EACH |

Payment is full compensation for furnishing and installing sand filled bags; for all excavation; for removal and disposal of the sand bags and all waste or surplus materials, including eroded materials and for shaping and restoring the area.

Any required topsoiling, fertilizing, seeding or mulching will be paid for under the applicable bid item.
SER-207.1 (20101021) EROC

## 137. Traffic Control Local Road Lane Closures, Item SPV.0060.042.

**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**
Traffic Control devices are paid separately.

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.042 | Traffic Control Local Road Lane Closures | EACH |

Payment is full compensation for closing and re-opening a local road lane or lanes.
sef-643-035 (20171004)

## 138. Traffic Control Close-Open Freeway Entrance Ramp, Item SPV.0060.043.

### A Description

This special provision describes closing and later opening a freeway entrance or exit ramp and associated auxiliary lane as the plans show, the engineer directs, and according to standard spec 643.

### B (Vacant)

### C Construction

Post all ramp closures seven working days in advance of their closure with dates and time of closure. Drums, barricades and signs may remain along the roadway when the ramp is open to traffic pending engineer approval to verify adequate offsets from traffic location are provided. Ensure that all inappropriate signs, dates or times are not visible to traffic when the ramp is open. A deduction of one each will be made from the project total for this item for each day any inappropriate sign is visible to traffic when the ramp is open.

Drums, barricades and signs may remain along the roadway when the freeway entrance is open to traffic. All devices must meet FHWA crashworthiness standards and shall not pose a hazard to the traveling public. Immediately remove or cover signing when the ramp closure is no longer in effect.

### D Measurement

The department will measure Traffic Control Close-Open Freeway Ramp as a unit each time a freeway ramp closure is setup and subsequently removed within a 24-hour period that has been authorized by the engineer, 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.0060.043 | Traffic Control Close-Open Freeway Entrance Ramp | EACH |

Payment is full compensation for closing and later opening a freeway entrance ramp.

Closure or partial closure of adjacent auxiliary lanes will be made as necessary at no additional cost to the department. Closure to a ramp not deemed necessary by the engineer will be made at no additional cost to the department. Drums, barricades, Arrow Boards, and signs will be paid for separately under the various traffic control items.

## 139. Fastening Sewer Access Covers, Item SPV.0060.052.

**A Description**
This special provision describes sealing, maintaining, and removing sealant for sewer access covers.

**B Materials**
Furnish preformed butyl rubber based sealant conforming to ASTM C990 Section 6.2. Size the preformed joint sealant to fill the joint to 50% of its annular volume when assembled.

**C Construction**
Open the sewer access cover, inspect the frame and grate, and remove material that will interfere with the sealant application from the cover and casting. Apply sealant in a continuous ring around the frame without stretching. Knead the ends together with no overlap.

Monitor performance during the project and maintain as needed. Remove sealant after traffic is shifted into its final configuration.

**D Measurement**
The department will measure Fastening Sewer Access Covers as each individual cover, acceptably completed.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.052 | Fastening Sewer Access Covers | EACH |

Payment is full compensation for providing and maintaining sealed covers; and removing sealant.
sef-611-015 (20180104)

## 140. Surface Settlement Markers, Item SPV.0060.060; Abandonment of Geotechnical Instrumentation, Item SPV.0060.062.

**A Description**
The purpose of geotechnical instrumentation is to permit the engineer to monitor the contractor's general compliance with the requirements of the contract regarding ground movement in the vicinity of excavations and protection of adjacent property. 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 monitoring ground conditions as necessary to conform to the requirements of the contract. 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; for maintenance of installed instruments; taking initial instrument readings; and for abandonment of instruments after construction.

Hire an independent instrumentation specialist to install instrumentation with exception to surface settlement markers (SM) as shown on the project plans and as specified. . The specialist shall have documented experience as set forth in the subsection, Quality Assurance.

The contractor’s instrumentation specialist shall install the instruments consisting of 3 settlement point with the middle point located on the centerline of the proposed crossing and the other two points offset 5 feet on either side of the proposed alignment. The settlement array shall be located in each shoulder located along each proposed trenchless alignment. The contractor shall complete an as-installed position survey to determine the horizontal and vertical positions of all instruments in accordance to the requirements herein and furnish the engineer with a copy of the results within 24 hours of field data acquisition.

The engineer will survey and monitor all instruments and furnish the contractor with results.

Unless otherwise noted or instructed by the engineer, the contractor shall abandon all instruments upon completion of the work.

**B 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 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. Schedule of instrument installation related to significant activities or milestones in the overall project.
6. Following installation of the instruments and prior to the start of underground 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, accessories, and protective measures including all dimensions and materials used.

7. Manufacturer's literature describing installation, operation, and maintenance procedures for all instruments, materials, readout units, and accessories.
8. Drilling and installation logs for instrumentation installations prepared by the instrumentation specialist.
9. 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.
10. Submit permits and consents for drilling holes from ground surface and conducting monitoring activities.
11. Plans for geotechnical instrumentation to be installed at contractor’s option.
12. Copies of completed DNR abandonment forms for observation wells and piezometers.

**C Definitions**

**C.1 Open Ground**

Ground without any above- or below-grade facilities, paved or unpaved roads, and utilities within a 25-foot horizontal radius.

**C.2 Surface Settlement Marker (SM)**

SMs are stakes, rods, or nails installed in unpaved or paved areas at predetermined locations to measure vertical (elevation) changes of the ground surface.

**D Quality Assurance**

**D.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.

**D.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, with a minimum of 5 years experience in the installation of instrumentation specified herein, shall prepare instrumentation shop drawings and supervise and direct technicians and be responsible for instrument installation required. The instrumentation specialist shall be physically present at the installation sites to supervise the installations.

**D.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 underground excavations.

**E Tolerances**
SMs 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.

**F Project Conditions**
Obtain necessary permits for the installation of monitoring systems.

Provide the engineer and the department access to the instruments at all times.

**G Materials**
**G.1 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.

**H Execution**
**H.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 for workshafts and tunnels.

The contractor may use instrument data provided by the engineer but shall be responsible to determine whether these data are adequate and timely to meet the requirements of the work. The contractor may collect its own data from the geotechnical instruments required by this article, but any such data collected shall be provided to the engineer as specified herein.

**H.2 Review of Instrumentation Plan**
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. 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.

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.

**H.3 Installation**

Complete installation and testing of each instrument located outside of excavations a minimum of 1 week prior to excavation or dewatering 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.

**H.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 readout devices.

**H.5 Installing Surface Settlement Markers (SM)**

Install surface settlement markers (SM) as specified. 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.

**H.6 Monitoring Instruments**

The contractor will take initial readings as specified in this article. Subsequent reading will be taken by the engineer. Provide access to instruments as requested by the engineer. Instrument data will be made available to the contractor, upon request, within 1 working day

of reading. The contractor may observe the readings at any time or take his own supplementary readings. Make data obtained by the contractor, whether from specified instruments or from additional instruments, available to the engineer within 1 working day of reading.

1. For workshafts, monitor as follows:

   Monitor all instruments within 50 feet of the outer edge of workshaft daily beginning when workshaft construction, ground improvement, excavation or dewatering activity begins, whichever comes first. Continue daily monitoring until backfill and removal of excavation support of the workshaft are complete. Provide a brief description of the construction activity in the submittal of monitoring data.

   Monitor at least once every 6 hours during active construction, which includes ground support system installation (including contact grouting to fill exterior voids), excavating, and ground improvement within and around workshaft.

2. For tunnel excavation, monitor all instruments located within, around and above the excavation as follows:

   Monitor at least once every 5 hours during active construction, but not less than twice per day beginning when tunnel excavation approaches within 50 feet of the station of the instrument location. Continue monitoring at the same frequency until excavation advances 100 feet beyond the station of the instrument location or the tunnel drive is completed (i.e. tunnel boring machine completely enters the receiving shaft).

   Upon completion of the tunnel drive, monitoring daily until contact grouting to fill exterior voids as required in Article, Tunnel and Workshaft Construction, Contact Grouting is complete. Continue to monitor weekly until backfill and removal of excavation support of all workshafts are complete or until directed by the Engineer to end monitoring.

**H.7 Abandonment of Instrumentation**

Abandon all piezometers and observation wells installed during the course of the work, unless directed otherwise by the engineer. Abandonment of wells and piezometers shall be in accordance with 204.3.3.3 or in accordance to NR 812 or NR 141 of the Wisconsin Administrative Code, whichever is more stringent. Submit copies of the complete DNR abandonment forms to the engineer within three work days.

**I Measurement**

**I.1 Surface Settlement Markers (SM)**

The department will measure Surface Settlement Markers by the total number of each surface settlement markers, satisfactorily installed.

**I.2 Abandonment of Geotechnical Instrumentation**
The department will measure Abandonment of Geotechnical Instrumentation as the total number of piezometers satisfactorily abandoned. The department will not make a separate measurement for the abandonment of surface settlement markers.

**J Payment**
The department will pay for measured quantities at the contract unit price under the following bid items:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.060 | Surface Settlement Markers | EACH |
| SPV.0060.062 | Abandonment of Geotechnical Instrumentation | EACH |

Payment is full compensation for furnishing and installing each instrument, all materials, labor, tools and equipment necessary for providing submittals, furnishing materials, installation, testing, protection, maintenance, replacement or repair of damaged instruments, initial readings, providing access to the engineer for reading, abandonment, and all other specified items of work for which no separate bid item is provided.

Abandonment of geotechnical instrumentation includes the abandonment of piezometers satisfactorily. No separate payment will be made for the abandonment of surface settlement markers.

## 141. Apron Endwalls for Culvert Pipe Horizontal Elliptical Salvaged 19x30-Inch, Item SPV.0060.063.

**A Description**
(1) This special provision describes excavating and removing existing apron endwalls and transporting, cleaning, and reinstalling at new locations the plan shows or the engineer directs.

**B Materials**
(1) Use existing materials.

**C Construction**
(1) If existing apron endwalls are designated for salvage and use in the new work, remove them from the existing location, clean, handle, transport to and install at the new location without damaging the apron endwalls. Replace any material damaged by the contractor at no expense to the department.

(2) Construct apron endwalls at the new location as specified in standard spec 523.3.

**D Measurement**
(1) The department will measure the Apron Endwalls for Culvert Pipe Horizontal Elliptical Salvaged bid item as each individual unit, acceptably completed.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.063 | Apron Endwalls for Culvert Pipe Horizontal Elliptical Salvaged 19x30-Inch | EACH |

(2) Payment for the Apron Endwalls for Culvert Pipe Horizontal Elliptical Salvaged bid item is full compensation for excavating and removing apron endwalls from existing location; for cleaning, transporting, and installing apron endwalls, including bands or connectors; for all excavating, including forming bed; for geotextile wrap if required; for joint ties if required; and for backfilling.

## 142. Baseline CPM Progress Schedule, Item SPV.0060.070; Monthly CPM Progress Schedule Updates, Item SPV.0060.071.

*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 longest continuous chain of activities through the CPM schedule that establishes the minimum overall project duration.

**Construction Activity** Construction activities are discrete work activities performed by the contractor, subcontractors, utilities, or third parties within the project limits.

**CPM Progress Schedule** A Critical Path Method (CPM) Progress Schedule is a network of logically related activities. The CPM schedule calculates when activities can be performed and establishes the critical or longest continuous path or paths of activities through the project.

**Float** Float, as used in this special provision, is the total float of an activity; i.e., it is the amount of time between the date when an activity can start (the early start), and the date when an activity must start (the late start). In cases where the total float of an activity has a different value when calculated based on the finish dates, the lower (more critical) value will govern.

**Forecast Completion Date** The completion date predicted by the latest accepted CPM Update, which may be earlier or later than the contract completion date, depending on progress.

**Fragnet** A group of logically-related activities, typically inserted into an existing CPM schedule to model a portion of the project, such as the work associated with a change order.

| | |
|---|---|
| **Initial Work Plan** | The initial work plan is a time-scaled CPM schedule showing detailed activities for the first 90 calendar days of work and summary level activities for the remainder of the project. |
| **Intermediate Milestone Date** | A contractually required date for the completion of a portion of the work, so that a subsequent portion of the work or stage of traffic phasing may proceed. |
| **Master Program Schedule** | The department's schedule for the overall 94 N-S Freeway Program, including intermediate milestone dates and contract completion dates, and containing codes for use as a template for the development of the contractor's schedule. |
| **Master Project Schedule** | The department's schedule for the contract work, developed during design, and provided to the contractor for informational purposes only. |
| **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 Master Schedules

#### 108.4.2.1 Master Project Schedule

(1) If requested by a bidder or by the contractor, the department will supply its Master Project Schedule for the contract work, developed during design. The Master Project Schedule is not a direction on how to perform the work. The Master Project Schedule reflects one possible approach to the work, consistent with the phasing requirements.

#### 108.4.2.2 Master Program Schedule

(1) Within five business days after award, the department will provide its current Master Program Schedule, containing intermediate milestone constraints, standard activity codes, and a standard WBS for the contractor to use to develop its schedule.

#### 108.4.2.3 Use of Department's Master Schedules

(1) The department's Master Schedules provide information to assist the contractor in preparing its schedule. The Master Schedules are not contract documents. The logic contained in the Master Schedules 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 intermediate milestone dates specified in the Prosecution and Progress Special Provision.

(2) Use the department-provided Master Program Schedule as a template to develop the Initial Work Plan and the Baseline CPM Progress Schedule. Use the Master Program Schedule's ID coding structure to categorize activities by Contract, Stage, Location, and

Responsibility to ensure compatibility with the Master Program Schedule 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 Master Program Schedule, 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 Initial Work Plan Workshop, as scheduled in standard spec 103.10, submit an Initial Work Plan as follows:

1. Develop the Initial Work Plan using the Master Program Schedule as a 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 three copies of the Initial Work Plan in a compressed (XER) format on three separate CDs.

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 Scheduling Workshop, as scheduled in standard spec 103.10, 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 Master Program Schedule as a template. The Baseline CPM is the contractor's committed plan to complete the Work within the time frames required to achieve the contract completion date and intermediate milestone dates.

    1.1. Provide a detailed plan of activities to be performed during the entire contract duration, including all administrative and construction activities required to complete the work as described in the contract documents. Provide construction activities with durations not greater than 28 calendar days (20 business days), unless the engineer accepts requested exceptions.

    1.2. Provide activities as necessary to depict administrative work, including submittals, reviews, procurements, inspections, and all else necessary to complete the work as described in the contract documents. Activities other than construction activities may have durations greater than 28 calendar days (20 business days). Allow 21 calendar days (15 business days) for department review of submittals.

    1.3. Submit a temporary drainage plan showing the interface between various stages of a project as well as the interface with adjacent projects.

    1.4. Include activities that describe essential features of the work and activities that might potentially delay contract completion. Identify activities that are controlling items of work.

    1.5. Show completing the work within interim completion dates and the specified completion date.

1.6. Provide summary activities for the balance of the project. Summary activities may have durations greater than 28 calendar days (20 business days).

1.7. Provide activities as necessary to depict third party work related to the contract.

1.8. Make allowance for specified work restrictions, non-working days, time constraints, calendars, and weather; and reflect involvement and reviews by the department, and coordination with adjacent contractors, utility owners, and other third parties.

1.9. With the exception of the Project Start Milestone and Project Completion Milestone, all activities must have predecessors and successors. The start of an activity shall have a Start-to-Start or Finish-to-Start relationship with preceding activities. The completion of an activity shall have a Finish-to-Start or Finish-to-Finish relationship with succeeding activities. Do not use Start-to-Finish relationships. Do not use Finish-to-Start relationships with a lag unless the engineer accepts requested exceptions.

1.10. Schedule all intermediate milestones in the proper sequence and input as either a "Start-no-Earlier-Than" or "Finish-no-Later-Than" date. Provide predecessors and successors for each intermediate milestone as necessary to model each Stage of the Work. Unless the engineer accepts a requested exception, the schedule should encompass all the time in the contract period between the starting date and the specified completion date.

1.11. Using the bid quantities and unit prices, develop an anticipated cash-flow curve for the project, based on the Baseline CPM.

2. Provide three hard copies of a hand-drawn or electronically drafted logic diagram depicting the CPM network. Organize the logic diagram by grouping related activities, based on the activity codes in the CPM.

3. Provide a written narrative with the baseline CPM explaining the planned sequence of work, as-planned critical path, critical activities for achieving intermediate milestone dates, traffic phasing, and planned labor and equipment resources. Use the narrative to further explain:

3.1. The basis for activity durations in terms of production rates for each major type of work (number of shifts per day and number of hours per shift), and equipment usage and limitations.

3.2. Use of constraints.

3.3. Use of calendars.

3.4. Estimated number of adverse weather days on a monthly-basis.

3.5. Scheduling of permit and environmental constraints, and coordination of the schedule with other contractors, utilities, and public entities.

(1) Submit three copies of the Baseline CPM in a compressed (XER) format on three separate CDs.

(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 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 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 three copies of each CPM Update in a compressed (XER) format electronically, as agreed to with the department.

5. If additions or changes were made to the CPM schedule since the previous update, submit an updated hard copy of the revised logic diagram.

(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) Revision by the contractor if necessary due to changes in the Work or project conditions and authorized by the engineer, a CPM Progress Schedule Revision may be submitted, although the next Monthly CPM Update is not yet due. Prepare the CPM Revision in the same format as required for Monthly CPM Updates, including justification for changes to the schedule. The process for comment and acceptance of a CPM Revision will be the same as for Monthly CPM Updates. If the CPM Revision is accepted, prepare the next monthly update based on the revised CPM. If the CPM Revision is rejected, prepare the next monthly update based on the previous month's update.

(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 to an intermediate milestone date or the contract completion date associated with changes to the work, provide a narrative detailing the work added or deleted and the other activities affected, based on the latest accepted CPM Update. For added work, submit a proposed fragnet of activities to be added or revised in the CPM schedule, indicating how the fragnet is to be tied to the CPM schedule.

(2) To request a time extension to an intermediate milestone date or the contract completion date associated with delays to the work, provide a narrative detailing the affected activities and the cause of the delay, based on the latest accepted CPM Update. Requests for time extensions due to delays should meet the following criteria:

1. For requests to extend the contract completion date, include a description of how the delay affected the project's critical path, based on the latest accepted CPM Update.
2. For requests to extend an intermediate milestone date, include a description of how the delay affected the controlling (longest) path to the milestone, based on the latest accepted CPM Update.
3. The department and the contractor agree that the float is not for the exclusive use or financial benefit of either party. Either party has the full use of the float on a first come basis until it is depleted.

**108.4.8 Payment for CPM Progress Schedule**

(1) The department will pay for measured quantities at the contract unit price for work acceptably completed under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.070 | Baseline CPM Progress Schedule | EACH |
| SPV.0060.071 | 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 (20171004)

## 143. Pavement Marking Contrast Epoxy Special Marking Words, Item SPV.0060.077; Arrow Type 2, Item SPV.0060.081; Arrow Type 3, Item SPV.0060.082; Arrow Type 4, Item SPV.0060.085; Arrow Type 5, Item SPV.0060.086.

**A Description**

This special provision describes furnishing and installing contrast epoxy special pavement marking according to standard spec 647.

**B Materials**
Furnish epoxy pavement marking materials according to standard spec 646.

**C Construction**
Install 1 ½ inch-wide black epoxy around the perimeter of the special marking.

**D Measurement**
The department will not measure Pavement Marking Contrast Epoxy Special Marking Arrows and Words. The department will use pay plan quantity conforming to standard spec 109.1.1.2.

**E Payment**
The department will pay for plan quantities conforming to standard spec 109.1.1.2 at the contract unit price under the following bid items:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.077 | Pavement Marking Contrast Epoxy Special Marking Words | EACH |
| SPV.0060.081 | Pavement Marking Contrast Epoxy Special Marking Arrow, Type 2 | EACH |
| SPV.0060.082 | Pavement Marking Contrast Epoxy Special Marking Arrow, Type 3 | EACH |
| SPV.0060.085 | Pavement Marking Contrast Epoxy Special Marking Arrow, Type 4 | EACH |
| SPV.0060.086 | Pavement Marking Contrast Epoxy Special Marking Arrow, Type 5 | EACH |

Payment is full compensation for cleaning and preparing the surface, furnishing and installing all pavement marking material, protecting until cured, replacing marking improperly constructed or failures during the proving period.

## 144. Section Corner Monuments, Item SPV.0060.091.

**A Description**
Coordinate with Southeastern Wisconsin Regional Planning Commission (SEWRPC) for the perpetuation and replacement of a section corner (Public Land Survey System- PLSS) monument.

**B Materials**
SEWRPC will provide a pre-cast concrete monument or brass disk to be used to mark the PLSS corner.

Furnish base aggregate dense materials that conform to standard spec 305 and concrete, asphalt, topsoil or other materials depending on the surface surrounding the corner.

**C Construction**

SEWRPC will perpetuate existing section corner monument. The contractor is responsible to coordinate with SEWRPC and the WisDOT Project Manager throughout the perpetuation and replacement process. The engineer will contact SEWRPC at (262) 953-4295 at least two weeks before starting construction operations or the preconstruction meeting to allow for section corner monument perpetuation.

Contractor must excavate and completely remove the existing monument. Contractor is responsible for providing a backfilled 3 to 4 foot deep hole where existing monument was removed. Contractor is responsible to coordinate the materials and methodology to complete the construction of the surface surrounding the monument. This may include but is not limited to a 2' x 2' "box out" or 24" diameter core hole in concrete, asphalt pavement/paving rings, coring to facilitate poured in place monuments, topsoil, seed and mulching or other materials or methodologies as agreed to by the contractor and SEWPRC.

**Contact Information:**

Attn: John Washburn
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53187-1607
Phone (262) 547-6721
Cell (262) 953-4295
Fax (262) 547-1103
E-mail: jwashburn@sewrpc.org

**D Measurement**

The department will measure Section Corner Monuments 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.0060.091 | Section Corner Monuments | EACH |

Payment is full compensation for all excavating; removal of existing monument, for placing and compacting backfill material; for disposing of surplus materials; for concrete or asphalt material, finishing of roadway or other surfaces, and for all coordination with SEWRPC.
SER-621.1 (20170530) SURV

## 145. Reconnect Storm Sewer, Item SPV.0060.092.

**A Description**

This special provision describes connecting new storm sewer pipe or structures to existing storm sewer pipe or structures. This special provision also describes connecting a new manhole or inlet to existing pipe.

**B (Vacant)**

**C Construction**

Remove existing concrete collars, pipe seals or end walls constructed under previous projects or in earlier stages of this project. Verify that positive drainage is achieved when connecting new pipe to existing structures or storm sewer. If necessary reset pipe stubs or sections of existing pipe to ensure positive drainage. Salvage any structurally sound pipe that requires removal if prior approval is granted by the engineer. Connect the new pipe or structure to the existing pipe or structures with the appropriate coupling, concrete collar or by means approved by the engineer. Use concrete masonry for concrete collar conforming to standard spec 520.2.4.

**D Measurement**

The department will measure Reconnect Storm Sewer as each new pipe or structure connection to existing pipe or structure, acceptably approved in the field. Measurement will include connections of new pipe or structures to pipe or structures placed in previous stages of the project, in addition to pipe or structures constructed under previous projects.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.092 | Reconnect Storm Sewer | EACH |

Payment is full compensation for performing all work; removing seals, end walls and concrete collars, providing all materials, coring, couplings, concrete collars. Any additional pipe or materials required to reconnect the storm sewer shall be considered incidental to this bid item. The new pipe and removal of the existing pipe will be paid separately under their respective bid items.

~~scf-501-005 (20170323)~~

## 146. Concrete Barrier Transition Type G1, Item SPV.0060.093; Type M1, Item SPV.0060.094; Type M2, Item SPV.0060.095.

**A Description**

This special provision describes constructing Concrete Barrier Transition (Type) according to standard spec 603, details shown in the plans, and as hereinafter provided.

**B (Vacant)**

**C (Vacant)**

**D Measurement**

The department will measure Concrete Barrier Transition (Type) by each individual unit, acceptably placed according to the contract.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.093 | Concrete Barrier Transition Type G1 | EACH |
| SPV.0060.094 | Concrete Barrier Transition Type M1 | EACH |
| SPV.0060.095 | Concrete Barrier Transition Type M2 | EACH |

Payment is full compensation conforming to standard spec 603.5.2.

## 147. Temporary Sediment Traps, Item SPV.0060.096.

**A Description**
Design, construct, and maintain temporary sediment traps used to intercept sediment-laden runoff and to retain the sediment.

**B Materials**
Materials shall be according to Wisconsin DNR Technical Standard 1063 (Sediment Trap).

**C Construction**
Design, construct, maintain and remove temporary sediment traps following the guidance in Wisconsin DNR Technical Standard 1063 (Sediment Trap) and according to the detail shown in the plans, and at the direction of the engineer. Locations as directed by the engineer. General locations requiring Temporary Sediment Traps are upstream of streams and wetlands which receive sediment laden runoff. Install prior to major grading operations. Do not remove until directed by the engineer.

**D Measurement**
The department will measure Temporary Sediment Traps as each individual sediment trap, installed according to the contract and 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.0060.096 | Temporary Sediment Traps | EACH |

Payment is full compensation for design; furnishing and maintaining each basin; for removal of the basin; and for stabilization of disturbed area after removal.

## 148. Maintain Crash Cushions Temporary Left In Place, Item SPV.0060.098.

**A Description**
This special provision describes maintaining temporary crash cushions left in place in accordance to standard spec 614 and as hereinafter provided.

**B Materials**
Furnish any replacement materials for the temporary crash cushions left in place by others in accordance to the pertinent requirements of standard spec 614.2.

**C Construction**
Maintain the temporary crash cushion in accordance with standard spec 614.3.4.

**D Measurement**
The department will measure Maintain Crash Cushions Temporary Left In Place 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.0060.098 | Maintain Crash Cushions Temporary Left In Place | EACH |

Payment is full compensation for maintaining the crash cushions.

## 149. 40-Foot Temporary Wood Post, Item SPV.0060.235.

**A Description**
This special provision describes furnishing a Type 4 40-Foot wood post for use during the duration of the contract.

**B Materials**
Furnish for temporary use one 40-foot type 4 or larger wood pole. The wood pole shall be western red cedar according to ANSI standards 05.1. Pressure treatment shall be 5% pentachlorophenol with a minimum of 8 pounds per cubic foot net retention of the oil-borne preservative. Pole shall be shaved the entire length.

**C Construction**
Embed the wood pole in the ground as shown in the plans or as directed by the engineer and mount detectors and solar power assemblies as shown in the plans and as directed and paid for under other pay items in this contract.

**D Measurement**
The department will measure 40-Foot Temporary Wood Post as each individual unit, furnished by the contractor for the duration of the contract.

**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.0060.235 | 40-Foot Temporary Wood Post | EACH |

Payment is full compensation for furnishing the wood post for the duration of the project.

## 150. Temporary Vehicle Detector Assembly, Item SPV.0060.236.

### A Description

This special provision describes assembling a temporary vehicle detector assembly and installing, calibrating, and integrating the assembly into the existing system. Assembly will be done on a 40-foot wood pole provided under other pay items in the contract. Inclusion of a second solar power and detector system will be paid for by additional quantities of this pay item.

### B Materials

Materials will include state-furnished materials and contractor furnished materials.

State-furnished materials include the following:

- One Electronic Integrated Systems, Inc. (EIS) Remote Traffic Microwave Sensor (RTMS).
- One cellular modem and antenna.
- One solar power system consisting of 2-85W panels, 2-120 Amp-Hour batteries, a solar power controller, and one solar power cabinet to house the batteries and controller.

Contractor furnished materials include the following:

- Outdoor rated Power cable between solar power system output and state-furnished RTMS.
- Mounting hardware for solar power system and RTMS detector.

### C Construction

RTMS Detector Installation:

Install the RTMS detector as required in standard spec 675 and connect the detector to the furnished cellular modem. Coordinate integration of the detector and modem assembly into the existing communications and FTMS system.

Solar Power System Installation:

Install the solar panels facing south on the pole with the devices to be powered. If a compass is used, a correction must be made for the difference between magnetic north and true north. Install the solar panels at a tilt angle of approximately 60 degrees. The tilt angle shall be considered the angle from horizontal to the front, or face of the solar panel.

Mount the cabinet to the pole by the two cast aluminum mounting brackets which are already attached to the back of the cabinet. The brackets shall be attached to the pole using stainless steel bands or U-bolts.

Install the cabling, ensuring that cables enter the cabinet only through the bottom, and that strain relief fittings are used to seal cable entrance points. Connect the panel to the charge controller, connecting the white wire to the positive (+) terminal and the black wire to the negative terminal (-).

**D Measurement**
The department will measure Temporary Vehicle Detector Assembly as each individual unit consisting of one detector and one solar power assembly, acceptably installed and integrated into the existing FTMS system.

**E Payment**
The department will pay for measured quantities at the contract unit price each under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.236 | Temporary Vehicle Detector Assembly | EACH |

Payment is full compensation for providing the contractor furnished materials, assembling the state-furnished and contractor furnished materials, installing the assembly, calibrating the detector, connecting the detector to the modem, integrating it into the existing FTMS system, making the assembly functional.

## 151. Refocusing Vehicle Detector Assembly, Item SPV.0060.237.

**A Description**
This special provision describes refocusing an existing microwave detector, or detectors, on a temporary or permanent pole or other structure, for operation with a new lane configuration.

**B Materials**
Materials include one or more Image Sensing Systems (ISS) Remote Traffic Microwave Sensors (RTMS) and the respective pole or other structure the sensor or sensors are mounted on.

**C Construction**
Coordinate all planned down-time of vehicle detector assemblies with the STOC at (414) 227-2166. Notify the STOC an amount of time ahead of planned down-time equal to the planned down-time. Examples would be that a 4-hour temporary down-time of the system would require notification 4-hours ahead of time while an 8-hour planned down-time would require 8-hours of advance notification.

Inspect the vehicle detector assembly for damage. Report any pre-existing damage to the engineer.

Refocus and recalibrate each detector on the respective pole each time the adjacent traffic pattern is changed due to a change in traffic control or construction staging.

Verify to the satisfaction of the engineer that the detectors at the pole are working properly.

**D Measurement**
The department will measure Refocusing Vehicle Detector Assembly by the site, including one or more detectors, acceptably refocused and operational.

**E Payment**
The department will pay for the measured quantity at the contract unit price each under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.237 | Refocusing Vehicle Detector Assembly | EACH |

Payment is full compensation for refocusing the detector, or detectors, for making the site, including one or more detectors, fully operational with a new lane configuration.

## 152. Install Temporary Traffic Camera Assembly, Item SPV.0060.240.

**A Description**
This special provision describes assembling, installing and integrating a temporary traffic monitoring camera assembly into the existing system according to standard spec 677, as shown on the plans and as hereinafter provided.

**B Materials**
Materials will include state-furnished materials and contractor furnished materials.

State-furnished materials include the following:

- One Internet Protocol Dome CCTV camera
- One solar power system consisting of 4-85W panels, 4-120 Amp-Hour batteries, a solar power controller, and two solar power cabinets to house the batteries and controller.
- One mid-span Power-Over-Ethernet power injector
- Cellular modem

Contractor furnished materials include the following:

- Outdoor rated Power cable between solar power system output and state-furnished RTMS.
- Mounting hardware for solar power system and CCTV Camera.
- 2-Inch schedule 80 nonmetallic conduit
- 2-Inch stainless steel bands
- Category 5 (or better) network cable between the wireless ethernet bridge and the power injector, and between the power injector and the CCTV camera.

**C Construction**
Install assembly on a 40-foot wood pole which will be provided under other pay items in the contract.

Install the solar panels facing south on the pole with the devices to be powered. If a compass is used, a correction must be made for the difference between magnetic north and true north. Install the solar panels at a tilt angle of approximately 60 degrees. The tilt angle shall be considered the angle from horizontal to the front, or face of the solar panel.

Mount the cabinets to the pole by the two cast aluminum mounting brackets which are already attached to the back of the cabinet. Attach the brackets to the pole using stainless steel bands or U-bolts.

Install the cabling, ensuring that cables enter the cabinet only through the bottom, and that strain relief fittings are used to seal cable entrance points. Connect the panel to the charge controller, connecting the white wire to the positive (+) terminal and the black wire to the negative terminal (-).

**D Measurement**
The department will measure Install Temporary Traffic Camera Assembly as each individual unit consisting of one CCTV camera and one CCTV camera solar power assembly, acceptably installed and integrated into the existing FTMS system.

**E Payment**
The department will pay for measured quantities at the contract unit price each under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.240 | Install Temporary Traffic Camera Assembly | EACH |

Payment for Temporary Traffic Camera Assembly is full compensation for installing department-furnished camera assemblies, power injector, modem, and solar power systems on poles; for providing all cables; for integrating the assembly into the existing FTMS system and making the assembly functional; and for all conduit, hardware and connections.

## 153. Ground Rod, Item SPV.0060.251.

**A Description**
This special provision describes installing a ground rod and ground wire.

**B Materials**
Ground rod shall be copper clad steel with cladding 13 mils thick. The minimum diameter is 5/8-inch and the minimum length is eight feet. Ground wire shall be AWG # 6 bare, solid copper.

**C Construction**
Use exothermic welding to connect the ground wire to the rod. Install the rod vertically, or as close to vertical as conditions permit. Select locations with moist soil, if available. Place the rod at least six feet from all other ground rods.

**D Measurement**
The department will measure Ground Rod by each unit, acceptably installed.

**E Payment**
The department will pay for measured quantities at the contract unit price each under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0060.251 | Ground Rod | EACH |

Payment is full compensation for furnishing and installation of the ground rod and ground wire; welding and connections at both ends of the ground wire.

## 154. Relocating Temporary Traffic Camera Assembly, Item SPV.0060.254.

### A Description

This special provision describes relocating an already installed temporary traffic camera assembly, including removing it from the existing location and installing, and integrating the assembly into the existing system at the new location.

### B Materials

Materials include materials previously furnished by the department and materials previously furnished by the contractor previously installed through other pay items in the contract.

These materials include the following:

- A CCTV Camera furnished by the department.
- One or more solar power system consisting of 2-85W panels, 2-120 Amp-Hour batteries, a solar power controller, and one solar power cabinet to house the batteries and controller.
- One 40-foot type 4 or larger wood pole.
- Outdoor rated Power cable between solar power system output and state-furnished CCTV cameras.
- Mounting hardware for solar power system and camera.
- Cellular modem and antenna.

### C Construction

#### C.1 Removal

As directed by the engineer, remove the temporary traffic camera assemblies from their respective locations in the project. Be careful not to damage any of the components that make up the system.

Restore the site to match the existing surrounding area using standard restoration items as described in the standard specifications.

#### C.2 Installation

Install the wood pole according to industry standards for supplied pole length.

Install the CCTV camera as required in the standard specifications. Integrate the wireless modem.

**C.3 Solar Power System Installation**
Install the solar panels facing south on the pole with the devices to be powered. If a compass is used, a correction must be made for the difference between magnetic north and true north. Install the solar panels at a tilt angle of approximately 60 degrees. The tilt angle shall be considered the angle from horizontal to the front, or face of the solar panel.

Mount the cabinet to the pole by the two cast aluminum mounting brackets which are already attached to the back of the cabinet. The brackets shall be attached to the pole using stainless steel bands or U-bolts.

Install the cabling, ensuring that cables enter the cabinet only through the bottom, and that strain relief fittings are used to seal cable entrance points. Connect the panel to the charge controller, connecting the white wire to the positive (+) terminal and the black wire to the negative terminal (-).

**D Measurement**
The department will measure Relocating Temporary Traffic Camera Assembly as a unit consisting of CCTV camera, one or more solar power systems, and a wood pole, with each assembly removed, installed, functioning, and accepted according to the contract.

**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.0060.254 | Relocating Temporary Traffic Camera Assembly | EACH |

Payment is full compensation for removing the assembly, installing the assembly, integrating the camera into the communications system, making the assembly functional, and for all restoration work needed at the original or new location.

## 155. Install Terminal Server, Item SPV.0060.255.

**A Description**
This special provision describes installing a serial to Ethernet terminal server, and providing all necessary associated wiring.

**B Materials**
The department will furnish the terminal server. Provide all necessary cables between the Ethernet switch, terminal server, and serial device(s).

**C Construction**
Install the terminal server in a new or existing field cabinet. Connect it to devices as shown on the plans, or as directed by the engineer.

**D Measurement**
The department will measure Install Terminal Server by each unit, installed according to the contract, tested and accepted.

**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.0060.255 | Install Terminal Server | EACH |

Payment is full compensation for installation of the terminal server; furnishing all necessary incidental hardware; and making all necessary connections.

## 156. Boulder Obstructions, Item SPV.0075.002.

**A Description**

This special provision describes breaking, excavating, handling and disposing of boulder obstructions as defined in Section B.

**B Materials**

**B.1 Boulder Obstruction Definition**

A boulder is a rock fragment that has a size (largest dimension or chord length) of 12 inches or more. Rock fragments that have a size ranging from 3 to 12 inches are cobbles. Boulders may be considered obstructions if they are encountered at the heading of a tunnel and they stop or significantly inhibit the forward progress of the MTBM to less than 10 percent of normal forward progress for at least 60 minutes under normal thrust and torque.

Boulders and boulder obstructions, including nested cobbles and boulders, shall be documented and the documentation presented to the engineer for an evaluation. Boulder and boulder obstruction indications shall consist, at a minimum, of the following:

1. Sound from the heading.
2. MTBM operator's experience with machine behavior.
3. Need to limit rpm and maintain available torque in response to material behavior.
4. Material recovered from separation plant.

Obstructions could be of natural origin such as boulders or man-made such as concrete slabs. The obstructing object may require removal by supplementary means such as drilling and splitting through the cutterhead, from an outside excavation, emergency shafts, or other means.

**C Construction**

Excavate and dispose boulder obstructions at a suitable location. The engineer will determine a suitable location.

**D Measurement**

The department will measure Boulder Obstructions, acceptably completed, as work for boulder obstructions removal on hourly time and material basis as each boulder obstruction is encountered during tunnel construction greater than what is indicated in the geotechnical baseline report.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0075.002 | Boulder Obstructions | HRS |

Payment is full compensation for all delays, labor, equipment, materials and incidentals necessary for boulder obstruction removal in excess of what is defined in the Geotechnical Baseline Report.

Boulder obstruction removal by means of rescue shafts and all associated work including excavation, backfilling, and surface restoration will be considered under the Differing Site Conditions clause standard spec 104.2.2.2.
SEF Rev. 110509

## 157. Pavement Cleanup Project 1030-11-72, Item SPV.0075.005; Pavement Cleanup Project 1030-11-79, Item SPV.0075.007; Pavement Cleanup Project 1030-25-79, Item SPV.0075.009; Pavement Cleanup Project 1030-11-80, Item SPV.0075.011.

**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.

Use a vacuum, water spray system, or other engineer-approved method to clear debris from scuppers in existing concrete barrier walls.

**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:

- Frontage Roads
- CTH K
- Kraut Road
- Golf Road
- And all other roadways approved by the department

In addition to routine sweeping, conduct sweepings as the engineer directs or approves, to eliminate dust problems that might arise during off-work hours or emergencies. Provide the engineer with a contact person available at all times to respond to requests for emergency sweeping. Coordinate with engineer to determine deadlines for responding to emergency sweeping requests and cleaning up spillage and material tracked to/from the project.

Keep scuppers in existing concrete barrier walls clear of debris at all times.

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) 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.0075.005 | Pavement Cleanup Project 1030-11-72 | HR |
| SPV.0075.007 | Pavement Cleanup Project 1030-11-79 | HR |
| SPV.0075.009 | Pavement Cleanup Project 1030-25-79 | HR |
| SPV.0075.011 | Pavement Cleanup Project 1030-11-80 | HR |

Payment is full compensation for daily surveillance; preparing and submitting the daily surveillance report with hourly metered tickets; mobilization; sweeping; vacuuming, water spraying; and disposing of materials.
~~sef-104-006 (20170323)~~

## 158. Obstructions Sign Supports Concrete Masonry, Item SPV.0075.401.

**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 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. 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 Sign Supports Concrete Masonry 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 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.0075.401 | Obstructions Sign Supports Concrete Masonry | HRS |

Payment is full compensation for removal and disposal of unknown, man-made subsurface obstructions and for furnishing all materials and additional concrete.

## 159. Seeding Mixture No. 30 Special, Item SPV.0085.002.

**A Description**

This special provision describes furnishing and sowing special seed material on areas as shown on the plans, according to standard spec 630, and as hereinafter provided.

**B Materials**

Table 630-1 Highway Seed Mixtures

*Add Seeding Mixture No. 30 Special species and proportions, in percent, as follows:*

Perennial Ryegrass (10%)
Hard Fescue (15%)
Red Fescue (25%)
Salt Grass (20%)
Tall Fescue (30%)

NOTE: No change to minimum purity and germination percentages in the table.

**C Construction**

630.3.3.5 Seeding Rates

630.3.3.5.1 Right-of-Way

(1) Use the following sowing rate for seeds in pounds per 1,000 square feet:

- Seeding Mixture No. 30 Special at 4.6 pounds

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0085.002 | Seeding Mixture No. 30 Special | LB |

Payment is full compensation for providing, handling, and storing seed, for preparing the seed bed, sowing, covering, and firming the seed.

## 160. Maintain Concrete Barrier Temporary Precast, Item SPV.0090.018.

**A Description**

This special provision describes maintaining existing concrete barrier temporary precast including attached temporary glare screen and reflectors, and steel rail connections and steel cap rail for installations abutting permanent barrier. The temporary barrier has been left in place under a previous contract. Assume ownership and responsibility of the temporary barrier, temporary glare screen and reflectors, and steel rail connections and steel cap rail upon the contract's Notice to Proceed. The location of this temporary barrier is shown in the Traffic Control plans.

Any Concrete barrier temporary precast, including attached temporary glare screen and reflectors that are to remain in place at the end of this contract as shown in the Traffic Control plans, becomes property of the department after final acceptance by the engineer.

**B Materials**

The concrete barrier temporary precast left in place from a previous project is Wisconsin type concrete barrier temporary precast.

**C Construction**
Maintain Wisconsin type concrete barrier temporary precast left in place conforming to standard spec 603.

Realign the wall after snow plow operations or as directed by the engineer. Maintain reflectors and hardware in a condition similar to when new on the project.

Keep drainage/lifting slot holes free from debris.

**D Measurement**
The department will measure Maintain Concrete Barrier Temporary Precast by the linear foot of concrete barrier temporary precast, acceptably maintained.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0090.018 | Maintain Concrete Barrier Temporary Precast | LF |

Payment is full compensation for receiving, maintaining, keeping concrete barrier temporary precast drainage/lifting slot holes free from debris, and leaving on the project site concrete barrier temporary precast including attached temporary glare screen and reflectors. Payment also includes maintaining steel rail connections and steel cap rail for installations abutting permanent barrier.
sef-603-011 (20141215)

## 161. Temporary Glare Screen, Item SPV.0090.023.

**A Description**
This special provision describes furnishing, installing, maintaining, and removing a modular paddle glare guard system on concrete barrier temporary precast at the indicated locations according to the plans and standard specifications, as directed by the engineer and as hereinafter provided.

**B Materials**
Utilize modular glare guard units consisting of vertical blades, bases, and a horizontal base rail. Utilize paddle devices a minimum of 24-inches in height and constructed of durable, impact resistant, non-warping flexible materials.

Utilize modular units with cumulative nominal length equal to the length of the temporary barrier on which they are installed so that the joint between the barrier sections shall not be spanned by any one unit. Units shall not alter the design of the concrete barrier.

Design the relative connection strengths between various components of the assembly to minimize the potential impact and debris hazard to approaching traffic and to simplify repairs. Fabricate the modular units in a manner to allow replacement of individual blades while the modular unit remains in place.

The blade, base and rail shall be made of high impact materials with sufficient strength to withstand three impacts from a horizontal steel bar traveling at 40 mph and impacting at mid-height of the blade. After three impacts, there shall be no evidence of cracking, splitting, delaminating or separation from the system.

Provide a paddle glare guard from a manufacturer below or an approved equal:

| Manufacturer | Address |
|---|---|
| Safe-Hit Corporation | 2405 IH 35 West, New Braunfels, Texas, 78130 |
| Carsonite International | 2900 Lockhead Way, Carson City, Nevada, 89701 |
| Flexstake Incorporated | 2150 Andrea Lane, Fort Myers, Florida, 33912 |

**C Construction**

Attach the base rail to the top of the concrete barrier temporary precast by a mechanical or adhesive system with a minimum pullout and shear of 3000 psi. All mounting hardware shall be as specified by the manufacturer.

**D Measurement**

The department will measure Glare Screens Temporary by the linear foot of paddle glare guard, acceptably completed.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0090.023 | Temporary Glare Screen | LF |

Payment is full compensation for furnishing, installing, maintaining and removing the Temporary Glare Screen.

## 162. Drain Slotted Vane Longitudinal, Item SPV.0090.052.

**A Description**

This special provision describes providing Drain Slotted Vane Longitudinal as the plans show, conforming to standard spec 501, 505, 608, and 611, and as provided in this special provision.

**B Materials**

Construct the pipe that the vane drain casting rests in using 15-inch diameter SDR-35 poly vinyl chloride, (PVC) sewer pipe for permanent drains and 15-inch diameter steel spiral rib (SSR) sewer pipe for temporary drains subjected to live traffic.

Conform to standard spec 611 for all other materials.

Conform to standard spec 415.2.1 for encasing material around the pipe.

Furnish steel reinforcement conforming to standard spec 415.2.2

Furnish concrete curing compounds conforming to standard spec 415.2.4.

**C Construction**

Before encasing the pipe in concrete, cover the upper end of the slotted drain as the plans show. Otherwise, obtain engineer approval before variations.

Before construction operations adjacent to the slotted area of the slotted vane drain pipe, cover the slots on the top of the drain.

**D Measurement**

The department will measure Drain Slotted Vane Longitudinal 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.0090.052 | Drain Slotted Vane Longitudinal | LF |

Payment is full compensation for furnishing all materials, including PVC pipe and end cap, slotted vane drain castings, concrete masonry and reinforcement; adjusting bricks; drilling inlet or manhole cover to accommodate connection bolts to vane drain; hauling and placing the pipe; making connections to existing inlets; sawing; encasement material around the pipe; concrete curing compound; tie bars and dowel bars, and cleaning out and restoring site of work.

Remove material entering the pipe at no additional cost to the department. If any section of pipe is damaged or is unsatisfactory as determined by the engineer, replace the drainpipe at no additional cost to the department.

sef-611-010 (20170330)

## 163. Micro Tunneling Storm Sewer Reinforced Concrete Pipe Class V 36-Inch, Item SPV.0090.074.

**A Description**
Excavate and backfill for work shaft, sheeting and shoring, control, handling and disposal of water, grouting, removing boulder obstructions encountered, and lighting and ventilation; furnishing pipes; and shall be in accordance to the construction details on the plans, the requirements of the article Tunnel and Shaft Construction of these special provisions, standard spec 607 and 608, and as hereinafter provided.

**B Materials**
Furnish storm sewer reinforced concrete pipe conforming to standard spec 608 and as hereinafter provided.

**C (Vacant)**

**D Measurement**
The department will measure Micro Tunneling Storm Sewer Reinforced Concrete Pipe Class V 36-Inch by the linear foot, acceptably completed, measured along the centerline of the pipe.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0090.074 | Micro Tunneling Storm Sewer Reinforced Concrete Pipe Class V 36-Inch | LF |

Payment is full compensation for all required excavation for work shaft; for backfilling work shaft; for sheeting and shoring; for compaction and compaction testing; for control, handling and disposal of water; for grouting; for removing boulders encountered; for compressed air; for lighting; for ventilation; for temporary support; for protection of existing utilities; and for furnishing storm sewer pipe.

## 164. Heavy Duty Silt Fence, Item SPV.0090.084.

**A Description**
This special provision describes the delivery, installation, maintenance, and removal of Heavy Duty Silt Fence. Install fence as directed by the engineer. Do not remove fence until directed by the engineer.

**B Materials**
Provide Heavy Duty Silt Fence consisting of a composite of woven wire fence fabric, posts, geotextile, fasteners, and to be assembled by the contractor. Woven wire fence fabric shall be a standard field fence type a minimum of 4 feet high, a maximum mesh spacing of 6-inches and minimum 14-$^{1}/_{2}$ gauge wire.

Provide “studded tee” or “U” type metal posts with a minimum length of 7 feet –6 inches and a minimum weight of 1.3 lb/ft.

Provide geotextile fabric meeting the following requirements

| Property | Unit | Test Method | Minimum Average Roll Value |
|---|---|---|---|
| Grab Tensile Strength | LB. | ASTM D4632 | 380 |
| Grab Tensile Elongation | % | ASTM D4632 | 50 |
| Puncture Strength | LB. | ASTM D4833 | 240 |
| Trapezoid Tear Strength | LB. | ASTM D4533 | 145 |
| Apparent Opening Size | U.S. Standard Sieve | ASTM D4751 | 170 (0.09 mm) |
| Permittivity | $sec^{-1}$ | ASTM D4491 | 0.7 |
| Water Flow Rate | $Gal/min/ft^2$ | ASTM D4491 | 50 |
| UV Resistance after 500 hours | % strength retained | ASTM D4355 | 70 |

Furnish a manufacturer’s Certified Report of Test or Analysis that the geotextile fabric delivered for use in the work meets the above requirements to the engineer at least 15 days prior to use in the work. Provide geotextile fabric bearing markings to clearly identify it with the applicable test report furnished to the engineer.

Supply material in 15’9” wide rolls and cut in half.

**C Construction**

Install the Heavy Duty Silt Fence as directed by the engineer and shown on the attached detail drawing. Space ties and anchors to adequately support system. Include or add acceptable guy lines, where required, for additional support.

Maintenance work, when required, will be specified on erosion control orders. Maintenance includes replacement of failed 12GA wire ties; re-anchoring of metal posts (standing lying sections back-up); entrenchment of the bottom fabric; and guy line repairs, if required. Geotextile fabric and woven wire fence fabric replacement not required for maintenance.

**D Measurement**
The department will measure Heavy Duty Silt Fence by the linear foot, acceptably completed. The department will measure along the base of the fence, center-to-center of end post, for each section of fence.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0090.084 | Heavy Duty Silt Fence | LF |

Payment is full compensation for all furnishing, assembling, erecting, maintaining, and removal of the silt fence; and for anchoring the silt fence.

## 165. Removing Overhead Lighting Cable, Item SPV.0090.101.

**A Description**
The work under this item shall consist of removal and disposal of existing overhead lighting cable at the locations shown on the plans, and according to the pertinent provisions of standard spec 204 and as hereinafter provided. Cable shall not be removed until contractor has verified that any lighting circuits have been permanently disconnected and alternate power for new temporary wood pole lighting units have been installed and are functional.

**B (Vacant)**

**C Construction**
Dispose of all materials off site.

**D Measurement**
The department will measure Removing Overhead Lighting Cable by the linear foot of acceptably removed existing overhead lighting cable as shown on lighting removal plans.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0090.101 | Removing Overhead Lighting Cable | LF |

Payment is full compensation for all work, disposal of materials. Bid price to reflect salvage value of cable.

## 166. Coring Timber Piles, Item SPV.0090.403.

### A Description

This work consists of coring through existing timber piles where the existing timber piles are in conflict with proposed new piles. The purpose of this work is to clear the location of an intended new pile so the pile may be driven and installed without interference from an existing timber pile.

### B (Vacant)

### C Construction

Core through existing timber piles wherever an existing timber pile is in conflict with a proposed pile. Core through the timber pile to an elevation that will permit the installation of the pipe pile without interference. Unless directed otherwise, make the diameter of the core hole only as large as required to eliminate the pile conflict. Backfill bored holes that exceed the diameter of the new piling with sand after driving the new piling.

### D Measurement

The department will measure Coring Timber Piles 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.0090.403 | Coring Timber Piles | LF |

Payment is full compensation for coring; for providing and placing necessary backfill material; and for disposing of all material excavated by coring.

## 167. Survey Project 1030-11-72, Item SPV.0105.004; Survey Project 1030-11-79, Item SPV.0105.006; Survey Project 1030-25-79, Item SPV.0105.008; Survey Project 1030-11-80, Item SPV.0105.010.

### 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 except as modified in this special provision.

*Replace standard spec 105.6.1(2) with the following:*

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
- pipe culverts
- drainage structures
- structure layout
- bridges
- all retaining wall layout
- pavement
- pavement markings (temporary and permanent)
- barriers (temporary and permanent)
- overhead signs
- freeway and local street lighting
- electrical installations
- supplemental control
- slope stakes
- detention ponds
- traffic signals
- ITS
- FTMS
- paths
- utilities
- conduit
- landscaping elements
- installation of community sensitive design elements
- traffic control items
- fencing

**B (Vacant)**

**C Construction**

*Supplement standard spec 650.3.1 (5) with the following:*

Confirm with engineer before using global positioning methods to establish the following:

1. Structure layout horizontal or vertical locations.
2. Concrete pavement vertical locations.
3. Curb, gutter, and curb and gutter vertical locations.
4. Concrete barrier vertical locations.
5. Storm Sewer layout horizontal or vertical locations, including structure centers, offsets, access openings, rim and invert elevations.

*Replace standard spec 650.3.1(6) 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 650.3.3.3.4.1 with the following:*

The department will provide the contractor staking packet as described in the Construction and Materials Manual (CMM) 7.10. At any time after the contract is awarded, the available survey and design information may be requested. The department will provide that information within 5 business days of receiving the contractor's request. The department incurs no additional liability beyond that specified in standard spec 105.6 or standard spec 650 by having provided this additional information.

*Add the following to standard spec 650.3.3.3.6.2 as paragraph four:*

Record all subgrade elevation checks and submit a hard copy to the engineer within 24 hours or as requested by the engineer.

**D Measurement**
*Replace standard spec 650.4 with the following:*

(1) The department will measure Survey Project (project ID) as separate single lump sum units, 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.0105.004 | Survey Project 1030-11-72 | LS |
| SPV.0105.006 | Survey Project 1030-11-79 | LS |
| SPV.0105.008 | Survey Project 1030-25-79 | LS |
| SPV.0105.010 | Survey Project 1030-11-80 | LS |

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 knock-outs will be performed at no additional cost to the department.
sef-650-005 (20180104)

## 168. Underdeck Lighting Special CTH K, Item SPV.0105.103.

**A General**
The work under this item shall consist of conduit, wire, luminaires, and junction boxes, and all parts and fittings for a complete special underdeck lighting system.

Certain aspects of the system will be design-build. Submit six sets of complete drawings and schedule of materials to the engineer for approval prior to any work or the delivery of material. It is required that the department approve the drawings and schedule of materials prior to the forming of the first bridge deck for pour. The designer shall be certified for Reinforced Thermosetting Resin Conduit (RTRC) installation.

The pay limit for this lump sum item will be all the work beyond the pull box from which the underdeck lighting system is fed off the main line branch circuits; this includes conduit and junction boxes embedded in barrier walls, conduit sumps, and conduit embedded in pier caps between junction boxes.

**B Materials**

Electrical wire shall conform to the standard items for electrical wire, lighting.

Type RTRC conduit shall conform to the standard items, except that some of the conduit shall be 1-inch, a nonstandard size. The system of hangers, rollers, expansion fittings, deck inserts, terminations, etc., shall be design-build per code and per manufacturer's recommendations and subject to the engineer's review and approval. Metal parts shall be stainless steel to the extent that such parts are on the market in that material. Provide IPS-specification conduit.

Included in shop drawing submittal, contractor shall include manufacturer's installation guide for exterior, above ground RTRC conduit installations. Manufacturer's documentation shall include the following:

- Conduit hanger construction and installation.
- The means to handle vibration.
- Manufacturer's maximum conduit support span calculations (annotated tables acceptable).
- Design, installation, and spacing of expansion joints.

Contractor shall provide sketches showing exact placement of under deck inserts for conduit and junction box supports. Typical details are only acceptable for close-up views of an installed insert. Each conduit run shall be individually sketched in a dimensioned reflected ceiling plan that shows conduit, junction boxes, supports, expansion joints, etc.

Shop drawing shall include cut sheet for all items required for installed solution; items to be submitted include all items in the conduit hanger assembly, deck inserts, junction boxes, conduit, conduit couplings, conduit adaptors, stop rings and expansion joints.

Material to form a sleeve through cast-in-place concrete pier diaphragms may be 2-inch PVC conduit sections, or any similar material as approved by the engineer. 2-inch conduit sleeve is included in structure pay items.

Luminaires shall be LED luminaires with forward throw optics, wattage as shown on plans. Luminaires shall be mounted on minimum 10 gauge stainless steel mounting plate with 3/8-inch stainless steel hanger rods from deck inserts. Provide vibration dampers in the suspension assembly. Units shall be die cast low copper aluminum allowing tool-free access to the lamp. The luminaire housing color shall be grey. Luminaires shall conform to UL 5956 marine outdoor and shall conform to IP65 level of resistance to dust and water intrusion. Reflectors shall be hydroformed. Refractors shall be heat and shock-resistant tempered glass. Pre-wire a luminaire whip of 3-conductor cord, rated 600 vac, min. 105 degrees C, water-resistant.

Luminaires shall be individually fused at 5 amperes FNQ, within the luminaire body.

Two types of junction boxes are required, embedded in barrier wall and attached to pier cap. Contractor shall submit hot dipped galvanized steel, cast iron, or stainless steel boxes for

review by the engineer. These shall be minimum NEMA 3R. Where the plans do not specify a size, contractor shall furnish boxes of sufficient capacity as approved by the engineer.

**C Construction**

An RTRC certified person shall supervise installation of Type RTRC conduit. The design and installation shall allow for contraction and expansion without abrasion to the conduit. Upon initial installation, conduit shall not contact the surface of the pier cap sleeve.

Junction box splices shall conform to requirements for light pole handholes.

The fixture whip shall be tied to the hanger rods with UV-rated cable ties. The boxes into which it is splice shall be supported per Section 314.23(E), Wisconsin State Electrical Code.

Shim or otherwise mount abutment junction boxes for drainage behind.

Deck insert locations shall be design-build. Coordinate with bridge erectors. Deck drilling for anchors will not be allowed.

Conduit and other parts shall be plumb, level, and true to the lines of the structure.

Provide identification plaques on the junction providing power to the structure. The plaque shall identify the circuit or circuits powering the fixtures on the structure. The cost of the plaques shall be included in the cost of the underdeck lighting system.

**D Measurement**

The department will measure Underdeck Lighting Special CTH K as one complete and operable system per pair of bridges overhead, connected for service, acceptably completed.

**E Payment**

These items, measured as provided above, will be paid under the following lump sum items:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.103 | Underdeck Lighting Special CTH K | LS |

Payment will be full compensation for conduit, wire, luminaires, deck inserts, junction boxes, suspension assemblies, and vibration dampers; for all parts and fittings; and for all labor, tools, equipment and incidentals necessary to complete the work as indicated on plans and SDD 10 A 15-4A.

## 169. Freeway Lighting Integrator ID 1030-11-72, Item SPV.0105.114.

**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 .pdf format. 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 ID 1030-11-72 as a single lump sum unit, acceptably completed.

**E Payment**
The department will pay for measured quantities at the contract lump sum price under the following bid items:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.114 | Freeway Lighting Integrator ID 1030-11-72 | LS |

Payment will be full compensation for providing specified expertise, assistance and documents, and personnel costs.
SER-670.1 (20170407)

## 170. Lighting System Survey, Item SPV.0105.120.

**A Description**
This special provision describes performing a lighting system survey as-built for CTH K and IH 94 Westbound Ramps, as shown on the plans, and hereinafter provided.

**B (Vacant)**

**C Construction**
Locate and survey all the lighting units, pull boxes, and control cabinets to sub-meter accuracy. Maintain neat, orderly, and complete survey notes. The survey shall be performed in NAD 83, Wisconsin County Coordinate System (WCCS), and Racine County Coordinates. The data shall be delivered in a comma delimited text file with metadata including datum, county, and date the survey was performed. Data for each point shall have a point number, northing, easting, and point description including pole, pull box, or cabinet number.

**D Measurement**
The department will measure Lighting System Survey for all lighting units, pull boxes, and control cabinets as a single lump sum unit, acceptably completed.

**E Payment**
The department will pay for measured quantities at the contract unit prices under the following bid items:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.120 | Lighting System Survey | LS |

Payment will be full compensation for locating and surveying all the lighting units, pull boxes, and control cabinets and for delivery of the comma delimited data file and all survey notes.
SER-650.10 (20170407)

## 171. Maintenance of Lighting Systems, Item SPV.0105.121.

**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 timely fashion 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 (or based on material availability).

| Incident or Problem | Service Response Time | Service Restoration Time | Permanent Repair Time |
|---|---|---|---|
| Control cabinet out | 12 hour | 24 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 | 12 hour | 12 hours | n/a |
| Circuit out – Cable trouble | 12 hour | 24 hours | 21 Calendar days |
| Outage of 3 or more successive lights | 12 hour | 24 hours | n/a |
| Outage of 75% of lights on one tower | 12 hour | 24 hours | n/a |
| Outage of light nearest RR crossing approach, Islands and gores | 12 hour | 24 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 lump sum unit, 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.0105.121 | Maintenance of Lighting Systems | LS |

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.

## 172. Install State Furnished Traffic Signal Cabinet, IH 94 EB Ramps & CTH K, Item SPV.0105.301.

**A Description**

This special provision describes the transporting and installing of the state-furnished traffic signal cabinet, signal controller, and other cabinet equipment for traffic signals, and for making the cabinet fully operational as shown in the plans.

**B Materials**

Pick up the state-furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the materials five working days prior to picking the materials up.

Provide all other needed materials in conformance with standard spec 651.2, 652.2, 653.2, 654.2, 655.2, 656.2, 657.2, 658.2 and 659.2.

Coordinate directly with the department's traffic signal cabinet vender (TAPCO at (262) 814-7327 or rickk@tapconet.com / TCC at (651) 439-1737 or mallwood@trafficcontrolcorp) to schedule the cabinet acceptance testing.

Coordinate with the department's Electrical Field unit at (414) 266-1170 to participate in the acceptance testing. The department has final determination of the cabinet acceptance testing date and time.

**C Construction**

Perform work according to standard spec 651.3, 652.3, 653.3, 654.3, 655.3, 656.3, 657.3, 658.3 and 659.3 except as specified below.

Request a signal inspection of the completed signal installation to the engineer at least five working days prior to the time of the requested inspection. The department's Region Electrical personnel will perform the inspection.

Install the state-furnished traffic signal cabinet on the concrete control cabinet base the same day it is delivered to the site location.

**D Measurement**

The department will measure Install State-Furnished Traffic Signal Cabinet (location) as a single lump sum unit of work, acceptably completed.

**E Payment**

The measured quantity at the contract unit price shall be paid under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.301 | Install State Furnished Traffic Signal Cabinet, IH 94 EB Ramps & CTH K | LS |

Payment is full compensation for installing and testing the Traffic Signal Cabinet and cabinet equipment; for furnishing and installing all other items necessary (such as, wire nuts, splice kits and/or connectors, tape, insulating varnish, ground lug fasteners, etc.) to make the proposed system complete from the source of supply to the most remote unit; and for clean-up and waste disposal.

## 173. Transport Traffic Signal and Intersection Lighting Materials (Intersection of IH 94 EB – CTH K), SPV.0105.310.

**A Description**
This special provision describes the transporting of department furnished materials for traffic signals and intersection lighting.

**B Materials**
Transport materials furnished by the department including: monotube arms and luminaire arms (to be installed on monotube assemblies).

Pick up the department furnished materials at the department's Electrical Shop located at 935 South 60th Street, West Allis. Notify the department's Electrical Field Unit at (414) 266-1170 and make arrangements for picking up the department furnished materials five working days prior to picking the materials up.

**C (Vacant)**

**D Measurement**
The department will measure Transport Signal and Lighting Materials at (Intersection) as a single lump sum unit of work, acceptably completed.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.310 | Transport Signal and Lighting Materials (Intersection of IH 94 EB – CTH K) | LS |

Payment is full compensation for transporting the monotube poles, monotube arms and luminaire arms (to be installed on monotubes). Installation of these materials is included under a separate pay item.

## 174. Install State Furnished Traffic Signal Equipment (IH 94 EB Ramps – CTH K), SPV.0105.311.

**A Description**
This special provision describes the installation of department furnished materials for traffic signals and intersection lighting.

**B Materials**
Install materials furnished by the department including: monotube arms and luminaire arms (to be installed on monotube assemblies).

**C (Vacant)**

**D Measurement**
The department will measure Install State Furnished Traffic Signal Equipment at (IH 94 EB Ramps – CTH K) as a single lump sum unit of work, acceptably completed.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.311 | Install State Furnished Traffic Signal Equipment (IH 94 EB Ramps – CTH K) | LS |

Payment is full compensation for installing the monotube poles, monotube arms and luminaire arms (to be installed on monotubes). Transportation of these materials is included under a separate pay item.

## 175. Transport and Install State Furnished FO Cable Pigtail 8-Ct CB1 S51-1285, Item SPV.0105.354; CB1 S51-1438, Item SPV.0105.355.

**A Description**
This special provision describes transporting and installing fiber optic communications equipment in traffic signal cabinets.

**B Material**
The department will furnish pre-terminated fiber optic patch panels and managed Ethernet switches. The materials will be provided with the traffic signal cabinet. The patch panels will have pre-terminated fiber optic cable pigtails. Furnish cables and connectors required to connect the department-furnished components as specified in standard spec 678.2.1(2). Provide all patch panel, Ethernet switch, and Interface Panel attachment hardware.

Provide a 12 AWG XLP insulated, stranded, copper, 600 volt AC locate wire through the conduit run from the communication vault to the traffic signal cabinet. Connect the locate wire by using a silicone filled wire nut at each pull box, vault or other access point. Alternatively, use a single wire through the access points, leaving a 6 foot coil in each pull box, vault or other access point for splicing. All material under this item shall meet the requirements of standard spec 655.

**C Construction**
Install the patch panel and Ethernet switch on the side of the traffic signal cabinet opposite the electrical service at a location as approved by the engineer. With approval by the engineer, the Ethernet switch may be placed on a shelf near the patch panel. Install the pre-terminated fiber optic cable in conduit from the patch panel to the communication vault as specified in standard spec 678.3.1. Fiber optic cable ends shall be covered securely to protect open ends during installation in raceways. Leave the remainder of the fiber optic coiled in the communication vault.

Install the fiber jumpers and CAT-5e cable from the Interface Panel to the Ethernet switch.

Connect the locate wire by using a wire nut at each access point. Alternatively, use a single wire through the access points.

**D Measurement**

The department will measure Transport and Install FO Cable Pigtail 8-Ct (Location) as a single lump sum unit of work, in place and accepted.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item.

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0105.354 | Transport and Install State Furnished FO Cable Pigtail 8-Ct CB1 S51-1285 | LS |
| SPV.0105.355 | Transport and Install State Furnished FO Cable Pigtail 8-Ct CB1 S51-1438 | LS |

Payment is full compensation for transporting and installing pre-terminated patch panels, Ethernet switches, and fiber optic cable in conduit; furnishing and installing attachment hardware, fiber jumpers, CAT-5e cable, and locate wire.

## 176. Vibration Monitoring, Item SPV.0135.001.

**A Description**

This special provision describes developing a vibration monitoring plan, deploying seismographs for continuous monitoring and recording, documentation, and reporting.

**B (Vacant)**

**C Construction**

**C.1 General**

Vibration Monitoring establishes vibration recordings at the closest affected locations. This spans the entire duration of operations for various vibration inducing activities identified within this special provision unless monitored readings are sufficiently below nuisance limits in Figure 1 and engineer determines that continued monitoring will be at the contractor's discretion.

**C.2 Equipment**

Use a seismograph meeting the requirements of Wisconsin Department of Safety and Professional Services SPS307.43. Use monitoring equipment with an instantaneous alert notification system that consists of a text message or an e-mail alert message automatically sent directly to the engineer any time the nuisance limits in Figure 1 are exceeded.

**C.3 Preconstruction Survey**

The engineer will conduct preconstruction surveys of structures that may be potentially affected by vibration before any work. The engineer will visually inspect and record all existing defects in the structures before construction. Photographs or video may be used to assist in documentation.

The contractor may conduct and document pre-construction surveys of any additional nearby buildings or structures not identified by the engineer. Provide results to engineer before construction. Any damage resulting from excessive vibration-causing operations or claims of damage during construction is the responsibility of the contractor to resolve.

**C.4 Monitoring Plan**

Submit a monitoring plan that includes the following:

- Location of each vibration-inducing activity 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
- Maximum allowable vibration limits
- Mitigation plan to reduce potentially excessive vibration levels to acceptable limits.

Obtain the engineer's acceptance seven calendar days before any vibration-inducing activity for the project.

**C.5 Monitoring and Recording**

Monitor the following operations:

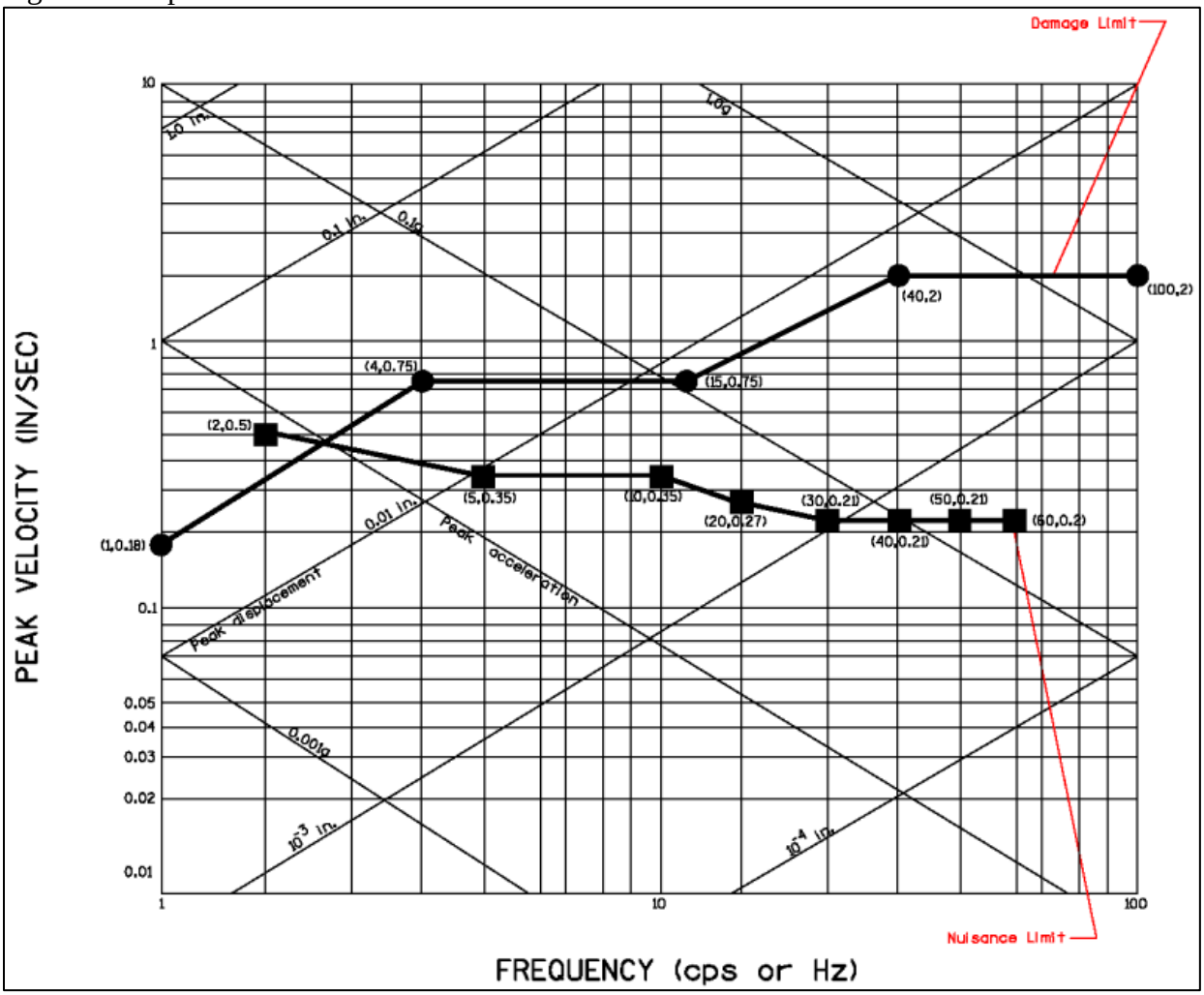
- Bridge and sign bridge pile driving or bridge demolition
- Sheet pile installation and removal
- MSE wall compaction
- Asphalt compaction
- Pavement breaking
- All compaction activities utilizing large vibratory rollers
- Any other activities that may cause vibration damage to adjacent buildings, structures, or utilities.

Ensure that a qualified person operates and continuously monitors the vibration monitoring equipment. If any vibration levels exceed the nuisance levels shown, immediately halt the vibration-inducing work, and notify the engineer.

Monitor between the construction vibration source and the closest structure or other sensitive facility subject to vibration damage, and as close as practical to the subject structure or facility. Monitor vibration levels in accordance with Figure 1 and SPS 307.43.

Compare the measured peak particle velocity and frequency data to the nuisance limits specified in Figure 1. Record peak particle velocity and frequency in three mutually perpendicular directions.

Figure 1: Amplitude of Vertical Vibrations




## C.6 Reporting

Furnish a weekly bound report of data recorded at each location to the engineer by 4 PM CST every Friday. Additionally, provide a separate daily report documenting any work that was halted before the next vibration-causing workday. Include the following in both reports:

- Date vibration monitoring operations began for each location with an associated compilation of total days currently monitored at each site.
- Identification of vibration inducing activities 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 qualified 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, dated and signed by the person qualified to perform vibration monitoring.
- Contractor documentation of any operational changes necessary to reduce vibration levels below nuisance levels.

**D Measurement**
The department will measure Vibration Monitoring by months, or partial months where applicable, for each seismograph monitoring site, acceptably completed.

**E Payment**
The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0135.001 | Vibration Monitoring | MON |

Payment of the item Vibration Monitoring is full compensation for providing, setting up and removal of recording unit, an approved vibration monitoring plan, continuous monitoring and recording vibrations, and reporting. No payment for Vibration Monitoring will be made without agreement on recommended locations. Continued monitoring at locations where readings are sufficiently below nuisance limits will be at the contractor's expense.

Any pre-construction surveys of additional nearby buildings or structures not identified by the engineer will be conducted at no additional cost to the department.
sef-999-050 (20170310)

## 177. Field Office Special, Item SPV.0135.002.

**A Description**
This special provision describes furnishing, equipping, and maintaining field office facilities from assembled Modular Field Office Units.

**B Materials**
Obtain engineer approval on the layout of field office that is to be constructed of 8 modular office building units that are a minimum of 56’ long by 12’ wide each and one additional equal size unit serving as a temporary lavatory. Each unit (unless is specified as a temporary lavatory unit) shall have separated private rooms on each end of the unit that measure a minimum of 11’ x 12’, or applicable layout approved by the engineer. Ensure that the units meet all local, state, and federal applicable health, fire, and building codes and standards.

The lavatory unit shall include temporary bathroom facilities for both men and women. The men’s temporary bathroom facility shall have a minimum of 3 sinks, 4 barrier separated urinals, and 3 enclosed temporary toilet stalls. The women’s temporary bathroom facility shall have a minimum of 2 sinks and 2 enclosed temporary toilet stalls. All water and septic lines to all units must withstand freezing conditions and remain operational during freezing conditions.

This field office shall be located on state owned lands within 2 miles of the project limits.

Equip and maintain these facilities with suitable natural and artificial lighting. Also provide adequate heating and air conditioning equipment and fuel necessary to maintain a temperature range from 68 F to 80 F in all units during the hours occupied. All components of the heating and air conditioning system, including filters, shall be furnished, replaced, and maintained by the contractor.

Occupation of the field facility by the engineering staff shall be established within 10 calendar days of contract execution.

The contractor shall arrange and secure external power and landline data sources for the facility. Power and data shall be established prior to occupation of the facility. Provide a standalone meter pedestal for the power service. Provide one standalone shipping container, or engineer deemed equivalent, to serve as power/transformer and telecom data room with distribution panels to service entire distribution of field office. This standalone unit shall have a single access and secured main door. Line walls with ¾" fired rated plywood for attaching of electrical items. All cabling to be run with rigid PVC conduit as per local codes.

Equip:

- Doors and windows with locks.
- Exterior doors with dead bolt locks and an integrated proximity keypad access control system for entry.
- All windows shall be barred.
- Skirting for exterior of the modular units.
- Fire Alarms and Smoke Detectors per all local, state, and federal applicable health, fire, and building codes and standards.
- Windstrap tie downs Modular Office Building Units

Outfit main entrance of field office with an 8' wide x 30' long pressure treated wood deck constructed with 2"x6" and 4"x4" pressure treated wood types with various lengths. The entrance shall include stairs and a ramp that shall be ADA compliant and built per municipal building codes. The deck shall be fully constructed within 2 weeks when field office is occupied. A temporary stair unit to the entrance shall be supplied until deck is complete. Construct OSHA compliant railings as required around perimeter of deck, stairs, and ramp.

Supply a first aid kit in each field office provided under the contract. Ensure the kits are readily accessible to project personnel per OSHA 1910.151 and meet the minimum requirements of ANSI Z308.1-1998. Check and replenish the contents of each kit at least once a week. Ensure that each kit contains, at a minimum, a supply of nitrile examination gloves, CPR masks, adhesive tape, pressure and cling bandages, antiseptic wipes, bite/sting swabs, cold packs, and safety goggles.

Equip each modular unit with a 6-pound or larger fire extinguisher conforming to class A, B, and C of the NFPA Code. Inspection and maintenance of all fire extinguishers shall be incidental to the field office.

Total area of at least 6,028 square feet interior useable floor space, including shared spaces, such as office areas, storage areas, conference rooms, meeting areas, hallways, and temporary toilet facilities.

Provide; maintain in clean good working condition; and stock lavatories with sanitary supplies, including a sufficient supply of soap; hand sanitizer; toilet paper; and paper towels. The on-site sanitary facilities must meet Federal, State, and local health department requirements at all times. Comply with OSHA standards for number of sanitary facilities required.

Obtain engineer's approval of a suitably sized, open meeting area as follows:

Meeting Area: Should include tables and folding chairs to accommodate regularly scheduled meetings of 50 people. The meeting room shall include a wireless ceiling mounted 1080-pixel liquid crystal display projector with a minimum of 3,000 lumens, a 4' x 8' white board, and phone jack. Minimum space of 30' x 20' needed for Meeting Area.

At the main entrance of the office, provide a common area with desk and phone jack.

Provide nine private rooms with a minimum of 120 sf each, additionally equipped with three 72"x30" folding tables, a four-shelf bookcase, a large lockable metal storage cabinet, and three 110V electrical outlets.

Provide nine private rooms with a minimum of 120 sf each, additionally equipped with two desks, one 72" x 30" folding table, a four-shelf bookcase, a large lockable metal storage cabinet, a fire proof 4-drawer file cabinet, three 110V electrical outlets, and a 4' x 3' whiteboard with dry-erase markers. Supply the interior doors to these rooms with locks, independent of the main access key security

Provide three ergonomically correct office chairs in working condition, with, at a minimum, the following features, for each private room:

- Five-legged base with casters.
- High backrest.
- Seat adjustable from 15 inches to 22 inches from the floor with a "seamless waterfall, rounded front edge.

Provide an access controlled server room with a minimum of 100 sf, that can maintain a temperature range from 50 F to 75 F. The server room shall be equipped with an uninterruptable power supply, and 110 V electric outlets sufficient to run all necessary equipment. Contractor to provide separate wiring from server room to battery backup at power source for server room.

Provide at least 45 high speed broad band internet connections with a minimum download connection speed of 100 Mbps download, and 10 Mbps for uploads. The following map should be considered when selecting a field office location in the IH94 N/S corridor:

http://maps.psc.wi.gov/apps/WisconsinBroadbandMap/

Use the state provided internet service provider, Badger Net, a BITS approved Dynamic IP Address (DHCP), a wireless router, a Digital Subscriber Loop (DSL) or Cable Modem Router. The package will accommodate IPSec based VPN products. The department will provide the internet service to the field office and bill the contractor directly for the work. Provide one communications pull box and up to 200 LF of trenched 2" rigid non-metallic conduit to accommodate the internet service to the field office. Coordinate service installation, costs, and network setup with Keith Waier at (608) 266-2492, two weeks in advance of work operations beginning at the field office.

Provide and install into the field office 4 four-line programmable touch-tone telephones and telephone exchanges with local and long distance service. At least one will be a cordless type operating at least 2.4 GHz. The voice exchanges are to be configured so that the incoming calls for any voice exchange utilize an open exchange. Furnish a voice mail answering service. The telephones and the communication services are for the sole use of the department staff.

Provide and maintain three new, wireless high-capacity color printer/photocopier/scanner capable of printing and copying up to 11" x 17" paper, with the ability to perform duplexing, sorting, stapling, and multiple sheet auto feeding, with a built-in scanner with the capability to scan black and white and color up to 11" x 17" at a minimum of 1200dpi, and with a network connection, as approved by the engineer.

Provide and maintain an adequate supply of bottled drinking water. Provide two refrigerators with a minimum 18 cubic foot capacity, including a freezer. Provide two microwave ovens with a minimum 1.1 cubic foot capacity, a minimum of 1000 watts, and a removable glass turntable.

Maintain the field office equipment and provide supplies for the photocopiers (paper and ink) as requested by the engineer.

Provide for the professional cleaning of the field office during regular business hours twice monthly. Have routine cleaning of the floors and mats of the trailer as requested by the engineer.

Provide clearly marked recycling and waste receptacles within the field office, and separate recycling and waste dumpsters near the field office. Cover outdoor containers to keep out rain, and snow. Provide regularly scheduled recycling and waste pick-up.

Include an adjacent, no-fee, lighted parking lot large enough to accommodate the needs of the field office at peak usage, as approved by the engineer. Maintain the parking lot and egress, including snow removal and salting of the parking lot and entrance steps/deck of the field office.

**C Construction**

Do not combine field offices, or combine them with, or attach them to, any buildings used by the contractor, unless the engineer allows in writing.

Do not begin construction operations requiring the use of the field offices by the department until the required field offices are approved by the engineer, furnished, fully equipped, and made ready for use as the engineer directs.

The field office shall remain available for department until the engineer approves its closure and removal. These field facilities are for the sole use of the department and upon contract completion remain the contractor's property.

**D Measurement**

The department will measure Field Office Special by the month, or partial month where applicable, acceptably completed.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0135.002 | Field Office Special | MON |

Payment is full compensation for providing, equipping, all associated mobilizations of mobile modular office units and parking lot including site development and restoration, securing and providing employee access, cleaning and maintaining the facility and associated parking lot; for telecommunications equipment, installation, and service fees; and for providing all incidentals, including bottled water, refrigerator/freezer, microwave, utilities, fuel, safety, ventilation, maintenance of temporary toilet facilities, and office supplies as well as equipment and furniture as required, either independently or jointly, for the time specified in section C.

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## 178. Longitudinal Grooving Bridge Deck, Item SPV.0165.401.

**A Description**

This special provision describes providing longitudinal deck grooves parallel to the centerline of the roadway prior to opening the bridge to traffic as directed by the engineer.

**B Materials**

Use a grooving machine containing blades mounted on a multi-blade arbor on a self-propelled machine built for grooving hardened concrete surfaces.

Use a grooving machine with a depth control device that detects variations in the deck surface and adjusts the cutting head height to maintain a specified depth of groove.

Equip the grooving machine with a guide device to control multi-pass alignment.

**C Construction**

Groove the pavement longitudinally without damaging the concrete deck surface.

Complete a longitudinal grooving operation that results in a uniformly grooved deck surface.

Cut grooves continuously across the deck width to within 18 inches of the barrier rail, curb line, or median divider. If metal floor drains extend more than 18 inches from the barrier rail, curb line, or median divider; all grooves on the bridge deck surface are to end within 6 inches of the floor drain perimeter.

At skewed metal edged expansion joints in the bridge deck surface, end all grooves on the bridge deck surface within 6 inches of the joint leaving no ungrooved surface adjacent to each side of the joint greater than 6 inches in width on the deck side of the expansion joints.

Produce grooves that are continuous across construction joints or other joints in the concrete deck surface less than 1/2-inch wide.

Construct longitudinal grooves with the following criteria:

| Width (in) | Depth (in) | Spacing C-C (in) | Width Tolerance (in) | Depth Tolerance (in) | Spacing Tolerance (in) |
|---|---|---|---|---|---|
| 1/8 | 3/16 | 3/4 | 0 to 1/16 | ± 1/16 | ± 1/16 |

Collect, remove and dispose of solid material residue and liquid waste resulting from grooving operations by vacuuming in a manner satisfactory to the engineer.

**D Measurement**

The department will not measure Longitudinal Grooving Bridge Deck. The department will use pay plan quantity conforming to standard spec 109.1.1.2.

**E Payment**

The department will pay for plan quantities conforming to standard spec 109.1.1.2 at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0165.401 | Longitudinal Grooving Bridge Deck | SF |

Payment for Longitudinal Grooving Bridge Deck is full compensation for providing the required machinery and operators; for grooving, for collecting, removing and properly disposing of all waste materials.

## 179. Wall Concrete Panel Mechanically Stabilized Earth R-51-53, Item SPV.0165.453; R-51-54, Item SPV.0165.454; R-51-55, Item SPV.0165.455; R-51-56, Item SPV.0165.456; R-51-57, Item SPV.0165.457; R-51-58, Item SPV.0165.458.

### A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system according to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the wall and all wall components shall be 75 years minimum.

This special provision describes the quality management program (QMP) for Mechanically Stabilized Earth (MSE) walls. A quality management program is defined as all activities, including process control, inspection, sampling and testing, and necessary adjustments in the process that are related to the construction of the MSE wall, which meets all the requirements of this provision.

This special provision describes contractor quality control (QC) sampling and testing for backfill density testing, documenting those results, and documenting related production and placement process changes. This special provision also describes department quality verification (QV), independent assurance (IA), and dispute resolution.

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures.

### B Materials

#### B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Concrete Panel Mechanically Stabilized Earth Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid opening date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section 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. Where walls or wall sections intersect with an included angle of 130 degrees or less, a vertical corner element separate from the standard panel face shall abut and interact with the opposing standard panels. The corner element shall have ground reinforcement connected specifically to that panel and shall be designed to preclude lateral spread of the intersecting panels. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the plans.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as stated on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratios (CDR) for sliding, eccentricity, and bearing checks is performed by the department and are provided on the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and panel-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software program used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

The wall facing shall be designed according to AASHTO LRFD 11.10.2.3. The facing panels shall also be designed to resist compaction stresses that occur during the wall erection. The minimum thickness of the facing panel shall be 5.5 inches. The surface area of a standard single panel cannot exceed 60 square feet. The maximum height of a standard panel shall be 5 feet. The top and bottom panels may exceed 5 foot in height based on site topography subject to the approval by the Structures Design Section. The design of the steel reinforcement within the panels shall be based on one-way bending action. Design the wall panels and joints between panels to accommodate a maximum differential settlement of 1 foot over a 100-foot length, unless the plans indicate other.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 8 feet. The soil reinforcement length shall be the same from the bottom to the top of the wall. All soil reinforcement layers shall be connected to facings. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be 31 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 18 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

All soil reinforcement required for the reinforced soil zone shall be connected to the face panels. The reinforcement and the reinforcement/facing connection strength shall be designed to resist maximum factored reinforcement loads according to AASHTO LRFD Section 11.10.6. Facing connection strength shall be defined as the resistance factor times the failure load, or the load at 0.5 inch deformation times 0.9, whichever is less. The nominal long term design strength in steel reinforcement and connections shall be based upon assumed conditions at the end of the design life.

Soil reinforcement shall be prefabricated into single or multiple elements before galvanizing. Soil reinforcement shall be fabricated or designed to avoid piling, drainage

structures or other obstacles in the fill without field modifications. Unless approved by the Bureau of Structures cutting or altering of the basic structural section of either the strip or grid at the site is prohibited, a minimum clearance of 3" shall be maintained between any obstruction and reinforcement, and splicing reinforcement is not allowed.

The minimum embedment of the wall shall be 1 foot 6 inches below finished grade, or as given on the plans. All walls shall be provided with a concrete leveling pad. Minimum wall embedment does not include the leveling pad depth. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad.

Wall facing units shall be installed on a concrete leveling pad. The bottom units shall be horizontal and centered on the leveling pad. The minimum thickness of the leveling pad shall be 6-inches. The minimum width of the leveling pad shall be 12-inches.

**B.3 Wall System Components**

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

**B.3.1 Wall Facing**

Wall facing shall consist of modular precast concrete face panels produced by a wet cast process, 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.

For cast in place concrete cap or coping, use poured concrete 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.

For concrete leveling pad, use Grade A, A-FA, A-S, A-T, A-IS, A-IP, or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for leveling pad concrete as specified in standard spec 716, Class III Concrete.

A minimum of two bearing pads shall be used per panel. The allowable bearing stress shall not exceed 900 psi. The bearing pads shall be preformed EPDM rubber conforming to ASTM D2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80, or high- density polyethylene pads with a minimum density of 0.034 $lb/in^3$ according to ASTM D1505.

An 18-inch wide geotextile shall be used on the backface of the wall panels to cover all panel joints. The geotextile shall meet the physical requirements stated in standard spec 645.2.4 for Geotextile, Type DF, Schedule B, except that the grab tensile strength shall be a minimum of 180 pounds in both the machine and cross-machine directions. The geotextile shall be attached with a standard construction adhesive suitable for use on concrete surfaces and cold temperatures. The adhesive shall be applied to the panels, not to the geotextile.

**B.3.2 Backfill**

Furnish and place backfill for the wall as shown on the plans and as hereinafter provided.

Place backfill in a zone extending horizontally from the back face of the wall facing to 1 foot minimum beyond the end of the reinforcement and extending vertically from the top of the leveling pad to a minimum of 3 inches above the final reinforcement layer.

Use natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. Do not use foundry sand, bottom ash, blast furnace slag, crushed/recycled concrete, crushed/milled asphaltic concrete or other potentially corrosive material.

Provide material conforming to the following gradation requirements as per AASHTO T27.

| Sieve Size | % by Weight Passing |
|---|---|
| 1 inch | 100 |
| No. 40 | 0 - 60 |
| No. 200 | 0 - 15 |

The material shall have a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90. Provide the percent by weight, passing the #4 sieve.

In addition, backfill material shall meet the following requirements.

| Test | Method | Value | |
|---|---|---|---|
| | | (Galvanized) | (Aluminized Type 2) |
| pH | AASHTO T-289 | 5.0-10.0 | 5.0 – 9.0 |
| Sulfate content | AASHTO T-290 | 200 ppm max. | |
| Chloride content | AASHTO T-291 | 100 ppm max. | |
| Electrical Resistivity | AASHTO T-288 | 3000 ohm-cm min. | 1500 ohm-cm min. |
| Organic Content | AASHTO T-267 | 1.0% max. | |
| Angle of Internal Friction | AASHTO T-236[1] | 30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2.) | |

[1] If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.
If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM D5821, on the R-4 material.

If more than 90% of the material is fractured on one face and more than 50% is fractured on two faces, the material meets the specifications and the angle of internal friction can be assumed to be 30 degrees. The second method allows testing all P-1" material, as per AASHTO T-236, with a large shear box. Test results of this second method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. For the additional required testing for every 2000 cubic yards of backfill placement, if the characteristic of the backfill and/or the source has not changed then Angle of Internal Friction tests are not included in the additional required testing. All certified reports of test results shall be less than 6 months old and performed by a certified independent laboratory.

**B.3.3 Soil Reinforcement**

All steel portions of the wall system exposed to earth shall be galvanized. All soil reinforcement and attachment devices shall be carefully inspected to ensure they are true size and free from defects that may impair the strength and durability. Soil reinforcement shall be galvanized or aluminized Type 2. Galvanized soil reinforcement shall be according to AASHTO M 111 or ASTM A641. Aluminized soil reinforcement shall be according to ASTM A463 Aluminized Type 2-100, SS, Grade 50, Class 2. Design of galvanized soil reinforcement shall be according to Section 11.10.6.4.2 of the current AASHTO LRFD Specifications. The design life of steel soil reinforcements shall comply with AASHTO LRFD. Aluminized soil reinforcement shall be limited 16 years of steel protection. Aluminized steel shall only be used on soil reinforcement elements and shall not be used on facing connections or any other steel portion of the wall system. Steel soil reinforcement shall be prefabricated into single or multiple elements before galvanizing.

## C Construction

### C.1 Excavation and Backfill

Excavation and preparation of the foundation for the MSE wall and the leveling pad shall be according to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the leveling pad unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall panels, soil reinforcement, or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place and compact material beyond the reinforced soil zone to allow for proper compaction of material within the reinforced zone. The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back panels. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the panels.

**C.2 Compaction**

Compact all backfill behind the wall as specified in standard spec 207.3.6. Compact the backfill to 95.0% of maximum dry density as determined by AASHTO T-99 (modified to compute densities to the nearest 0.1 pcf).

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the panels. Do not use sheepsfoot or padfoot rollers within the reinforced soil zone.

A minimum of 3 inches of backfill shall be placed over the MSE reinforcement prior to working above the reinforcement.

**C.3 Wall Components**

**C.3.1 General**

Erect panel facing and other associated elements according to the wall manufacturer's construction guide. Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing.

The MSE reinforcement shall lay horizontally on the top of the most recently placed and compacted layer of MSE backfill. Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstructions in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

### C.3.2 Steel Layers

Place the steel reinforcement full width in one piece as shown on the plans. No splicing will be allowed. Maintain elements in position during backfilling.

### C3.3 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 ¾-inch when measured along a 10-foot straight edge. The maximum allowable offset in any panel joint shall be ¾-inch. The overall vertical tolerance of the wall (plumbness from top to bottom) shall not exceed ½-inch per 10 feet of wall height. Erect the precast face panels to ensure that they are located within 1 inch from the contract plan offset at any location to ensure proper wall location at the top of the wall. Provide a ¾-inch joint separation between all adjacent face panels to prevent direct concrete-to-concrete contact. Maintain this gap by the use of bearing pads and/or alignment pins. Failure to meet this tolerance shall cause the engineer to require the contractor to disassemble and re-erect the affected portions of the wall. In addition, imperfect molding, honeycombing, cracking or severe chipping of panels shall be cause of panel rejection.

## C.4 Quality Management Program

### C.4.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform MSE wall construction work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review and acceptance. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted.

Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
3. A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Descriptions of stockpiling and hauling methods.
5. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
6. Location of the QC laboratory, retained sample storage, and other documentation.

7. A summary of the locations and calculated quantities to be tested under this provision.
8. A proposed sequencing plan of wall construction operations and random test locations.

**C.4.2 Quality Control Personnel**

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a HTCP Grading Technician I (GRADINGTEC-I); or Assistant Certified Technician, Grading (ACT-GRADING); or Aggregate Technician I (AGGTEC-I); or Assistant Certified Technician, Aggregate (ACT-AGG) present at 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 http://www.atwoodsystems.com/. 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 D6938 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 Documentation**

(1) Document all observations, inspection records, and process adjustments daily. Submit test results to the department's project materials coordinator on the same day they become available.

(2) Use forms provided in CMM Chapter 8. Note other information in a permanent field record and as a part of process control documentation enumerated in the contractor's quality control plan. Enter QC data and backfill material certified report results into the applicable materials reporting system (MRS) software within 5 business days after results are available.

(3) Submit final testing records and other documentation to the engineer electronically within 10 business days after all contract-required information becomes available. The engineer may allow submission of scanned copies of hand-written documentation.

**C.4.5 Quality Control (QC) Testing**

Perform compaction testing on the backfill. Conform to CMM 8-15 for testing and gauge monitoring methods. Conduct testing at a minimum frequency of 1 test per 150 cubic yards of backfill, or major portion thereof in each lift. A minimum of one test for every lift is required. Deliver documentation of all compaction testing results to the engineer at the time of testing.

Perform 1 gradation test every 750 cubic yards of fill and one 5-point Proctor test (or as modified in C.2) every 2,250 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM Method D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

**C.4.6 Department Testing**

**C.4.6.1 General**

(1) The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all QV and IA personnel for the project, and provide test results to the contractor within two business days after the department obtains the sample.

**C.4.6.2 Quality Verification (QV) Testing**

(1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.4.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.

(2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.

(3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor’s QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.

(4) The department will conduct QV Proctor and gradation tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.

(5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

### C.4.6.3 Independent Assurance (IA)

(1) Independent assurance is unbiased testing the department performs to evaluate the department's QV and the contractor's QC sampling and testing, including personnel qualifications, procedures, and equipment. The department will perform an IA review according to the department's independent assurance program. That review may include one or more of the following:

1. Split sample testing.
2. Proficiency sample testing.
3. Witnessing sampling and testing.
4. Test equipment calibration checks.
5. Reviewing required worksheets and control charts.
6. Requesting that testing personnel perform additional sampling and testing.

(2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.6.4.

### C.4.6.4 Dispute Resolution

(1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

(2) Production test results, and results from other process control testing, may be considered when resolving a dispute.

(3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product or work, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

**C.5 Geotechnical Information**

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils Engineer two working days to review the foundation.

**D Measurement**

The department will not measure Wall Concrete Panel Mechanically Stabilized Earth. The department will use pay plan quantity conforming to standard spec 109.1.1.2.

**E Payment**

The department will pay for plan quantities conforming to standard spec 109.1.1.2 at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0165.453 | Wall Concrete Panel Mechanically Stabilized Earth R-51-53 | SF |
| SPV.0165.454 | Wall Concrete Panel Mechanically Stabilized Earth R-51-54 | SF |
| SPV.0165.455 | Wall Concrete Panel Mechanically Stabilized Earth R-51-55 | SF |
| SPV.0165.456 | Wall Concrete Panel Mechanically Stabilized Earth R-51-56 | SF |
| SPV.0165.457 | Wall Concrete Panel Mechanically Stabilized Earth R-51-57 | SF |
| SPV.0165.458 | Wall Concrete Panel Mechanically Stabilized Earth R-51-58 | 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 and leveling pad; constructing the retaining system including drainage system; providing backfill, backfilling, compacting, developing/completing/documenting the quality management program, and performing compaction testing.

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, 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 for those items.
SPV.0165.XX (20170629)

## 180. Partial Depth Precast Prestressed Concrete Deck Panels B-51-132, Item SPV.0165.473; B-51-133, Item SPV.0165.474; B-51-134, Item SPV.0165.475; B-51-135, Item SPV.0165.476; B-51-136, Item SPV.0165.477; B-51-137, Item SPV.0165.478.

### A Description

This special provision describes manufacturing, transporting, and erecting partial depth precast prestressed concrete deck panels.

### B Materials

#### B.1 Concrete

Furnish grade D concrete in the partial depth precast prestressed panels with a minimum compressive strength ($f'_c$) of 6,000 psi at 28 days and a minimum release strength ($f'_{ci}$) of 4,400 psi.

#### B.2 Reinforcement

Position and space the pretensioned reinforcement used in the deck panels as given on the plan. Use pretensioned reinforcement that conforms to the requirements of standard spec 503.2.3.

Use welded wire fabric that meets the requirements of ASTM A497.

All external or exposed steel shall be epoxy-coated.

#### B.3 Polystyrene

Use rigid cellular polystyrene to form the haunches at the girder top flanges. Use rigid cellular polystyrene that meets the requirements of ASTM C578, Classification Type VII (4) and has a minimum compressive strength of 55 psi.

#### B.4 Grout

Use non-shrink, non-chloride grout from the approved products list to support the partial depth precast prestressed deck panels. Mix and place grout according to the grout manufacturer's instructions and specifications.

Provide a certified report of the grout test per ASTM C109, mixed as proposed for the work, at least 2 weeks prior to placement. Testing shall be performed no more than 30 days prior to delivery of the test report. Minimum compressive strength shall be 4,000 psi.

Provide a certified report of the grout test per ASTM C109, sampled as directed by the engineer from material incorporated into the work, indicating conformance of the grout as placed with the preceding minimum compressive strength at least three days prior to placement of deck concrete. The department may perform verification testing of the grout as deemed necessary by the engineer.

**B.5 Plant Certification**

Furnish partial depth precast prestressed concrete deck panels that have been manufactured in a plant meeting the requirements of standard spec 503.2.4.

## C Construction

### C.1 Surface Finish

Score the top surfaces of deck panels with a tining rake or similar tool, parallel to the panel's prestressing strands. Score the top surfaces at 3/4 to 1 inch spacing, and to a depth of 1/8-inch to 3/16-inch. Remove areas of mortar buildup in excess of 3/8-inch above the top surface of the panel.

### C.2 Tolerances

The maximum allowable dimensional tolerances for the deck panels shall be as follows:

| | |
|---|---|
| · Length of panel…….. | ± 1/4" |
| · Width of panel…… | ± 1/4" |
| · Depth of panel…… | - 1/8", + 1/4" |
| · Vertical position of strand group…… (Measured from bottom of panel) | - 1/8", + 0" |
| · Vertical position of individual strands…… | ± 1/8" |
| · Horizontal strand position……... | ± 1/4" |
| · Bowing…… | ± 1/8" |
| · Sweep…….. | ± 1/8" |
| · Horizontal alignment……... (Deviation from straight line parallel to centerline of panel) | 1/4" |
| · Squareness……... (Difference in diagonals) | 1/2" (max.) |
| · Warping……... | 1/16" per foot of distance from nearest adjacent corner |

**C.3 Handling and Storing**

Handle the partial depth precast prestressed concrete deck panels, from the time of releasing the strands until they are in place in the structure. Conform to standard spec 503 as modified in this special provision.

The department will reject panels having cracks visibly apparent radiating from the strand at the end of the panel.

Maintain the panels in a flat position at all times and support the panels at approximately 15 inches form ends. Place the supports at right angles to the strands to ensure that the supports extend the full width of the panel.

During storage and transportation, position the supports such that the panels are maintained in a level position and are not twisted. When panels are stacked, position the supports of all panels in the same vertical planes and ensure that the supports are of adequate thickness to prevent damage to the lifting hooks.

**C.4 Deck**

Cut and place the polystyrene to form a haunch that produces a uniform total deck thickness. Adhere polystyrene to the top flange of the girder and deck panel prior to grout placement. Place the partial depth precast prestressed concrete deck panels on rigid cellular polystyrene.

Place the grout a minimum of 3 days before placement of the cast-in-place deck and use wetted burlap to cure the exposed grout.

Prior to placement of concrete over the panels, clean the tops of the panels and ensure that they are free of all foreign material. Immediately prior to placing concrete over the panels, wet the top surface of the panels until free moisture appears and remains.

Place cast-in-place concrete and reinforcement bars conforming to standard spec 501 and standard spec 505. Take special care to properly vibrate the concrete at the panel ends over the girders and substructures to avoid honeycombs and voids.

Partial depth precast prestressed concrete deck panels shall not be used to support heavy loads until the full deck concrete is cast and cured. Construction loads on individual panels shall be uniformly applied and shall not exceed a loading of 50 pounds per square foot.

**D Measurement**

The department will measure Partial Depth Precast Prestressed Concrete Deck Panels (Structure) in area by the square foot of panel, 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.0165.473 | Partial Depth Precast Prestressed Concrete Deck Panels B-51-132 | SF |
| SPV.0165.474 | Partial Depth Precast Prestressed Concrete Deck Panels B-51-133 | SF |
| SPV.0165.475 | Partial Depth Precast Prestressed Concrete Deck Panels B-51-134 | SF |
| SPV.0165.476 | Partial Depth Precast Prestressed Concrete Deck Panels B-51-135 | SF |
| SPV.0165.477 | Partial Depth Precast Prestressed Concrete Deck Panels B-51-136 | SF |
| SPV.0165.478 | Partial Depth Precast Prestressed Concrete Deck Panels B-51-137 | SF |

Payment is full compensation for manufacturing, transporting, handling and storing the panels; providing and placing polystyrene and grout; and cleaning and erecting the panels.

## 181. Removal and Disposal of Invasive Plant Species, Item SPV.0170.002.

**A Description**

(1) This work shall consist of removing and disposal of invasive plant species, including but not limited to Phragmites, Cut-leaved teasel and Wild Parsnip per the Invasive Species Identification, Classification, and Control Rule (Chapter NR 40, Wis. Adm. Code). Plants shall be removed and disposed from areas shown on the plans. It shall include furnishing all necessary materials and performing all necessary work such as excavating topsoil, cutting stems, removing individual plants including roots, disposing of plants, and such work necessary and incidental to complete the item according to the plans, specifications, and contract.

**B (Vacant)**

**C Construction**

**C.1 Removing and Disposing of Phragmites (Common Reed)**

(1) All phragmite plants shall be removed from areas shown in the plans. Removal of phragmites shall include removal of the entire plant and root system. Removal shall be performed by removal of all existing topsoil and plant biomass from the areas shown on the plans. Topsoil and biomass removed from invasive plant areas shall be kept in a separate stockpile than topsoil intended for reuse on the project under the Salvaged Topsoil item.

(2) All plants removed shall be disposed either on-site under a minimum of 5 feet of fill or plants shall be taken to a solid waste landfill. Transport of plants to any location other than a licensed landfill shall require approval by the WisDNR. Disposal of plants under fill or at a licensed landfill shall occur within one day of removal.

**C.2 Removing and Disposing of Cut-leaved Teasel and/or Wild Parsnip**

(1) All Cut-leaved Teasel and/or Wild Parsnip plants shall be removed from areas shown in the plans. Removal of Cut-leaved Teasel and Wild Parsnip shall by cut at the stem or completely excavated. Removal shall be performed by either removal of each individual plant by hand or by removal of all existing topsoil and plant biomass from the areas shown on the plans. If excavation methods are used to remove plants, the topsoil shall be kept in a separate stockpile than topsoil intended for reuse on the project under the Salvaged Topsoil item.

(2) All plants removed shall be disposed either on-site under a minimum of 5 feet of fill or plants shall be taken to a solid waste landfill. Transport of plants to any location other than a licensed landfill shall require approval by the WisDNR. Disposal of plants under fill or at a licensed landfill shall occur within 1 day of removal.

**C.3 Wild Parsnip Safety**

(1) Care shall be taken when handling Wild Parsnip. When sap contacts skin in the presence of sunlight, it can result in severe rashes, blisters, and discoloration of the skin (phytophotodematitis). Wear gloves, long sleeves, and long pants when handling this species.

**C.3 404 Permit**

(1) Areas of invasive species shown on the plan may be outside of wetland fill areas covered under the 404 permit. Excavation shall not be performed in these areas. For Cut-leaved Teasel and Wild Parsnip in these areas, the plants shall be cut at the stem, removed and disposed according to Section C.2.

**C.5 DNR Contact**

(1) A minimum of two weeks prior to excavation within invasive plant species areas, contact WisDNR for identification and delineation of invasive species in the field. The DNR contact is:

Craig Webster
Environmental Analysis and Review Specialist
Wisconsin Department of Natural Resources
141 NW Barstow ST, Room 180, Waukesha WI 53188
Desk Phone: (262) 574-2141
Cell Phone: (414) 303-3011
Craig.Webster@Wi.Gov

**D Measurement**

The department will measure Removal and Disposal of Invasive Plant Species by the full 100-foot station, acceptably completed, measured along the roadway reference line with each full 100-foot station starting and ending at a +00 station. The department will measure along the I-94 reference line and will apply for a removal and disposal of invasives required from the shoulder point of I-94 to the shoulder point of the frontage road.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0170.002 | Removal and Disposal of Invasive Plant Species | STA |

(2) Payment is full compensation for removing, stockpiling, excavating, loading, hauling, and either on-site disposal or licensed landfill disposal of these invasive plants.

If invasive plants are removed by excavation methods, the department will pay for restoring topsoil under the Salvaged Topsoil or Topsoil items.

## 182. Rootstock Protection, Item SPV.0180.005.

**A Description**

(1) This special provision describes the installation of rootstock protection for wetland plantings.

**B Materials**

(1) Furnish posts that consist of 1 inch by 2 inch by 5 foot wooden stakes. Furnish cross members that consist of biodegradable, natural organic fiber bailing twine.

**C Construction**

(1) Install rootstock protection prior to the rootstock planting. Install posts a minimum of 2 feet into the ground or to a depth that secures the post and resists being pushed over. Install rootstock protection in such a manner as to provide a grid like pattern 10 feet by 20 feet through the area of the rootstock plantings. Extend the perimeter of the Rootstock Protection to a minimum of 5 feet in all directions beyond the limits of the rootstock plantings. Attach bailing twine, used as cross members, to all posts as shown in the plan. Attach bailing twine to the posts using knots or any other means approved by the engineer so that no more than 3 cross members may be affected if any one cross member breaks or becomes unattached. Use means approved by the engineer when bailing twine is attached to all intermediate posts. Maintain rootstock protection through the life of the contract, as needed, or within 24 hours of notification by the engineer.

**D Measurement**

(1) The department will measure Rootstock Protection by the square yard, acceptably completed.

**E Payment**

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0180.005 | Rootstock Protection | SY |

(2) Payment is full compensation for furnishing all materials, installing all posts, cross members, disposal of surplus materials; and for maintaining the Rootstock Protection through the life of the contract.

## 183. Concrete Pavement 12-Inch Special, Item SPV.0180.012.

### A Description

This special provision describes specialized material and construction requirements to use on the 94 N-S mainline pavement and shoulders.

Conform to standard spec 415 and 501 as modified in this special provision, and conforming to special provision QMP Concrete Pavement Special Requirements.

Concrete pavement mixes from standard spec 501 may not be used. Provide an independent contractor developed mix design.

### B Materials

#### B.1 Concrete

*Supplement standard spec 501.3.2.2 with the following:*

(3) Ensure that the combination of pozzolan and slag does not exceed 30 percent of the total cementitious material.

#### B.2 Reinforcement

*Replace standard spec 415.2.2 with the following:*

Furnish steel reinforcement conforming to standard spec 505. Furnish tie bars as the plans show and according to standard spec 505.2.6.

Furnish dowel bars conforming to standard spec 505.2.6 except, for transverse joints in mainline concrete pavement, use non-corrosive high performance dowel bars. Use only one type of high performance bar for work under the contact. The following may be used:

Bars with 316L stainless steel cladding meeting ASTM A276 chemical requirements. Ensure that the bars have a smooth finished surface cladding 0.060 inches thick or thicker over ASTM A615 grade 60 or higher carbon steel.

Bars with 316L stainless steel tubes meeting ASTM A276 chemical requirements. Ensure that the tubes have a smooth finished surface, a wall thickness of 0.060 inches or more, and are press-filled with ASTM A615 grade 60 or higher carbon steel. Use an adhesive or epoxy between the tube and the carbon steel to fill all voids.

Solid 316L stainless steel bars conforming to ASTM A955 grade 60 or higher.

Bars with a rolled UNS Z41121 zinc alloy cladding conforming to ASTM B6. Ensure that the bars have a smooth finished surface cladding 0.040 inches thick or thicker over ASTM A615 grade 60 or higher carbon steel.

Bars with a fully bonded longitudinal glass fiber reinforced polymer (GFRP) corrosion shield conforming to the GFRP materials requirements of AASHTO LRFD Bridge Design Guide Specifications for GFRP Reinforced Concrete Bridge Decks and Traffic Railings. Ensure that the bars have a smooth finished GFRP surface coating 0.125 inches thick or thicker over ASTM A615 grade 60 or higher carbon steel.

Use bars with a minimum outside diameter of 1.5-inches and a length of 18-inches for all non-corrosive high performance dowel bars.

**B.3 Coarse Aggregates**

**B.3.1 General**

*Replace standard spec 501.2.5.4.1 with the following:*

Use clean, hard, durable crushed limestone with 100 percent fractured surfaces and free of an excess of thin or elongated pieces, frozen lumps, vegetation, deleterious substances or adherent coatings considered injurious.

Use virgin aggregates only.

**B.4 Deleterious Substances**

*Replace standard spec 501.2.5.4.2(1) with the following:*

The quantity of deleterious substances shall not exceed the following percentages:

| DELETERIOUS SUBSTANCE | PERCENT BY WEIGHT |
|---|---|
| Shale | 1.0 |
| Coal | 1.0 |
| Clay lumps | 0.3 |
| Soft fragments | 3.0 |
| Any combination of above | 3.0 |
| Thin or elongated pieces based on a 3:1 ratio | 15.0 |
| Materials passing the No. 200 (75 µm) sieve | 1.5 |
| Chert[1] | 3.0 |

[1] Material classified lithologically as chert and having a bulk specific gravity (saturated surface-dry basis) of less than 2.45. Determine the percentage of chert by dividing the weight of chert in the sample retained on a 3/8-inch (9.5 mm) sieve by the weight of the total sample.

**B.5 Physical Properties**

*Replace standard spec 501.2.5.4.3 (1) and (2) with the following:*

The percent wear shall not exceed 30 percent.

The department will ensure that soundness testing conforms to AASHTO T 104, using five cycles in sodium sulfate solution on aggregate retained on the No. 4 (4.75 mm) sieve. The weighted loss shall not exceed 6 percent.

The department will ensure that freeze-thaw soundness testing confirms to AASHTO T 103. The weighted freeze-thaw average loss shall not exceed 15 percent.

**B.6 QMP Testing Requirement Modification**

**B.6.1 Concrete Pavement Mixes**

Testing referred to in this section pertains to concrete mix design approval and trial batch proving.

In addition to B.5.2.3.2 paragraph one of the QMP Concrete Pavement Special Requirements provision of this contract, use at least five pairs of beams and five pairs of cylinders to demonstrate the flexural strength of a mix design. Demonstrate that the 28-day flexural strength of the proposed mix will equal or exceed 650 psi. Ensure that the average flexural strength of any one pair of beams is not less than 490 psi.

**B.6.2 Contractor Testing**

**B.6.2.1 General**

Perform quality control tests required under this special provision and as described in the quality control plan.

The department may periodically observe contractor sampling and testing, and direct additional contractor sampling and testing for department evaluation. Ensure that all test results are available for the engineer's review at all times during normal working hours.

**B.6.3 Flexural Strength**

**B.6.3.1 Sampling**

Cast specimens for testing flexural strength in each lot tested under the QMP Concrete Pavement Special Requirements provision of this contract. Cast compressive strength and flexural strength test specimens from the same concrete mix sample.

Sample according to AASHTO T 141. Cast and cure the specimens according to AASHTO T 23.

Cast one set of three standard 6 x 6 inch beams to test the lot flexural strength.

**B.6.3.2 Testing**

Have a technician certified for flexural strength through the department's HTCP, in a department-qualified laboratory, perform flexural strength testing according to AASHTO T97 and document the results.

Determine the 28-day strength in psi of each specimen according to the specified AASHTO standards for each required test. Test each specimen to failure. Use a machine that automatically records the date, time, rate of loading, and maximum load of each specimen.

Include a printout of this information with the strength documentation for each specimen tested.

## C Construction

### C.1 Jointing

#### C.1.1 General

*Replace standard spec 415.2.6 with the following:*

(1) Furnish a hot-poured elastic joint sealer according to ASTM D6690 type II.
(2) Remove all saw slurry from sawed joints and allow to dry thoroughly before application of joint sealer.

### C.2 Surface Finishing

*Replace standard spec 415.3.8.3.1 with the following:*

Tine freshly placed pavement as soon as it is practical after floating.

Tine with a self-propelled tining machine. Where using a tining machine is not practical, tine by hand. Produce uniformly deep grooves approximately 1/8 to 3/16 inch (3 mm to 5 mm) deep. Construct a finished surface free of tining defects. Complete before tining tears or unduly roughens the concrete.

Tine surface longitudinally as specified in standard spec 415.3.8.3.2.

### C.3 Curing Concrete

#### C.3.1 General

*Replace standard spec 415.3.12.1 with the following:*

Maintain adequate moisture throughout the concrete mass to support hydration until the concrete develops sufficient strength to open it to service. Cure all concrete by impervious coating as specified in standard spec 415.3.12.2 within 75 minutes from the time concrete is discharged from the truck.

If the concrete is not cured as specified in the subsection, the engineer may suspend concrete placement operations.

### C.4 Extended Delivery Time

*Delete paragraph one from standard spec 501.3.2.4.3.3.*

### C.5 Ready-Mixed Concrete

#### C.5.1 General

*Replace standard spec 501.3.5.1 with the following:*

Use central-mixed concrete for all work under this special provision. Central-mixed concrete is mixed in a stationary mixer and transported to the point of delivery with or without mechanical agitation in the transporting vehicle.

**C.6 Hot Weather Concreting**

**C.6.1 General**

*Replace standard spec 501.3.8.2.1 with the following:*

Take the following steps to ensure that the concrete will cure during hot weather conditions. Submit a written temperature control plan at or before the pre-pour meeting. In that plan, outline the actions to control concrete temperature if the concrete temperature at the point of placement exceeds 80 F. 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 for items covered in this special provision.

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

**D Measurement**

The department will not measure Concrete Pavement 12-Inch Special. The department will use pay plan quantity conforming to standard spec 109.1.1.2.

**E Payment**

Conform to standard spec 415.5 and as modified in this special provision.

*Replace paragraph one of standard spec 415.5.1 with the following:*

(1) The department will pay for plan quantities conforming to standard spec 109.1.1.2 at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0180.012 | Concrete Pavement 12-Inch Special | SY |

**E.1 Pay Adjustment for Compressive Strength**

The department will adjust pay for each lot using percent within limits (PWL) of the 28-day sub-lot average strengths for that lot. The department will measure PWL relative to the lower specification limit of 4500 psi.

Any additive or action taken to control the temperature of concrete 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.

sef-415-005 (20180104)

## 184. Slope Paving Crushed Aggregate Special Item SPV.0180.400.

### A Description

This special provision describes furnishing, crushing and placing aggregate for slope paving and applying an epoxy resin binder with the aggregate, as the plans show, conforming to the applicable provisions of standard spec 604, and as modified in this special provision.

### B Materials

#### B.1 General

Use a low modulus, medium-viscosity, two-component epoxy resin binder.

Furnish evidence, to the satisfaction of the engineer, that the proposed product has been successfully used in a similar application.

Epoxy resin binder shall be clear to light amber when fully cured.

Use Wisconsin crushed aggregate limestone with 100 percent fractured faces and hues of tan, amber and gray conforming to the following nominal requirements:

| Sieve Size | Percent by Weight Passing |
|---|---|
| 4-Inch | 100 |
| 1-Inch | 0-25 |

#### B.2 Minimum Requirements.

Furnish epoxy resin binder material conforming to ASTM C-881 and AASHTO M-235 specifications and the following requirements:

- Total water absorption, ASTM D-570
  - 7 day, 1.3% (2 hour boil)
  - 14 day, 0.232% (24 hour immersion)
  - Viscosity: 2,500 cps

### C Construction

#### C.1 Base Preparation

A week prior to placing crushed aggregate, strip all vegetation and humus-bearing soil. Bring the grade to the required lines, elevations, and slopes shown on the plans. Remove twigs, cobbles, foreign material, and clods that cannot be broken down. Install and securely anchor weed barrier fabric in accordance with standard spec 632.

#### C.2 Application

Apply the epoxy resin binder material uniformly over the surface of the paving at a rate just sufficient to ensure penetration and binding of the particles in the upper 2 inches of the entire aggregate blanket conforming to the manufacturer's recommended rate and procedures. Use a two part sprayer with mixing completed at the nozzle to apply the binder. Avoid excessive application of epoxy resin binder and prevent material run-off. Protect the surface of adjacent structures, barriers, and pavement to prevent splattering or discoloration by epoxy

resin binder, and within a timeframe acceptable to the engineer, remove all material accumulations at the foot of the slope paving.

Apply and mix epoxy resin binder under dry conditions only. Do not apply if rain is expected within 8 hours following epoxy resin application to crushed aggregate or as recommended by the manufacturer and approved by the engineer.

Ensure air and surface temperature is in the range between 50 and 90 F during, and for 24 hours following, application and mixing of the epoxy resin binder or as recommended by the manufacturer and approved by the engineer.

Protect installed crushed aggregate with epoxy resin binder from excessive dust exposure for the first 4 hours of curing.

**C.3 Test Section**

Before placing slope paving, prepare a test section utilizing the proposed aggregate and epoxy resin binder so the engineer will be able to assess the adequacy of the product and the application and mixing methods to yield the desired results. Test section to be 3-feet x 3-feet and a minimum of 4-inches thick. Notify the engineer at least 24 hours before preparing the test section to allow them time to arrange for witnessing the epoxy resin binder application and mixing with the aggregate. Cure test section according to product manufacturer's requirements before the engineer will accept the product for use on the final structures.

If the test section is not accepted, prepare another test section and repeat the process, using either a different aggregate or epoxy resin binder. Repeat this procedure until the engineer accepts the test section. Use the same aggregate and epoxy resin binder means and methods when installing the product under each structure that were used in preparing the accepted test section.

**D Measurement**

The department will measure Slope Paving Crushed Aggregate Special by the square yard in place, acceptably completed.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0180.400 | Slope Paving Crushed Aggregate Special | SY |

Payment is full compensation for stripping and disposing of humus- bearing soil, for providing and installing weed barrier fabric, providing crushed aggregate; for providing the epoxy resin binder to the aggregate; for preparing the subsurface; for cleaning all splatter of epoxy resin binder to adjacent structures, barriers, and pavement; and for making and disposing of the test section.

~~sef-604-005 (20170525)~~

## 185. HMA Longitudinal Joint Repair, Item SPV.0195.004.

### 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 MT 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 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.0195.004 | 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)

## 186. Select Subbase, Item SPV.0195.006.

### A Description

This special provision describes constructing a dense graded base according to standard spec 305 and standard spec 107.14 and as modified in this special provision.

### B Materials

*Replace standard spec 305.2.2.1 with the following:*

Except for reclaimed asphaltic pavement, use 1¼ inch base aggregate that conforms to the following gradation requirements:

| | Percent Passing By Weight |
|---|---|
| 1 1/4 inch | 95 - 100 |
| 1 inch | --- |
| 3/4 inch | 70 - 90 |
| 3/8 inch | 45 - 75 |
| No. 4 | 30 - 60 |
| No. 10 | 20 - 40 |
| No. 40 | 7 - 25 |
| No. 200 | 2 - 12 [1][2] |

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

[2] 3.0-10.0 percent passing when base is ≥ 50% crushed gravel.

### C (Vacant)

### D (Vacant)

### E Payment

*Replace standard spec 305.5 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.0195.006 | Select Subbase | TON |

Payment is full compensation for preparing the foundation; and for stockpiling, placing, shaping, compacting, and maintaining the base.

SEF Rev. 101202

## 187. Excavation, Hauling, and Disposal of Creosote Contaminated Soil, Item SPV.0195.009.

### A Description

### A.1 General

This special provision describes excavating, stockpiling for testing, loading, hauling, and disposing of creosote contaminated soil at a landfill. The closest landfills to the project would be the following:

Veolia's Emerald Park Landfill
W124 S10629 124th Street
Muskego, WI 53150

Republic Services, Inc. Kestrel Hawk Landfill
1989 Oakes Road
Racine, WI 53406

Perform this work according to standard spec 205 and with pertinent parts of Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR 718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport contaminated soil.

### A.2 Notice to the Contractor – Contaminated Soil Location(s)

The department assumes that soil in the immediate vicinity of pre-existing creosote treated wooden bridge piles is contaminated due to exposure to residual wood preservatives. Due to structural impediments, representative analytical testing of this soil is not practical prior to bridge demolition and subsequent structure excavation. As such, the soil located in the following locations and as shown of the plans will require temporary stockpiling within the right-of-way and analytical testing for landfill acceptance:

a) Station 922+98 to 923+06 from 60 feet LT of centerline to 60 feet RT of centerline from approximately 0 to 2 feet below bottom of existing abutment (anticipated excavation limits; creosote-contaminated soil anticipated to exist to bottom of existing timber piles, 35 feet below existing abutment). Soil at this location is contaminated with residual creosote-based wood preservatives. Approximately 68 cubic yards (approximately 115 tons at an estimated 1.7 tons per cubic yard) of contaminated soil will be excavated from this location.

b) Station 924+05 to 924+12 from 60 feet LT of centerline to 60 feet RT of centerline from approximately 0 to 2 feet below bottom of existing abutment (anticipated excavation limits; creosote-contaminated soil anticipated to exist to bottom of existing timber piles, 35 feet below existing abutment). Soil at this location is contaminated with residual creosote-based wood preservatives. Approximately 68 cubic yards (approximately 115 tons at an estimated 1.7 tons per cubic yard) of contaminated soil will be excavated from this location.

c) Station 1002+37 to 1002+45 from 60 feet LT of centerline to 60 feet RT of centerline from approximately 0 to 2 feet below bottom of existing abutment (anticipated excavation limits; creosote-contaminated soil anticipated to exist to bottom of existing timber piles, 30 feet below existing abutment). Soil at this location is contaminated with residual creosote-based wood preservatives. Approximately 68 cubic yards (approximately 115 tons at an estimated 1.7 tons per cubic yard) of contaminated soil will be excavated from this location.

d) Station 1003+47 to 1003+54 from 60 feet LT of centerline to 60 feet RT of centerline from approximately 0 to 2 feet below bottom of existing abutment (anticipated excavation limits; creosote-contaminated soil anticipated to exist to bottom of existing timber piles, 30 feet below existing abutment). Soil at this location is contaminated with residual creosote-based wood preservatives. Approximately 68 cubic yards (approximately 115 tons at an estimated 1.7 tons per cubic yard) of contaminated soil will be excavated from this location.

e) Station 1054+88 to 1055+19 from 63 feet LT of centerline to 75 feet RT of centerline from approximately 6 to 15 feet below ground surface. Soil at this location is contaminated with residual creosote-based wood preservatives. Approximately 984 cubic yards (approximately 1,673 tons at an estimated 1.7 tons per cubic yard) of contaminated soil will be excavated from this location.

f) Station 1056+10 to 1056+42 from 63 feet LT of centerline to 75 feet RT of centerline from approximately 13 to 15 feet below ground surface. Soil at this location is contaminated with residual creosote-based wood preservatives. Approximately 1,225 cubic yards (approximately 2,082 tons at an estimated 1.7 tons per cubic yard) of contaminated soil will be excavated from this location.

For further information regarding the handling and disposal of this contaminated soil material please contact:

| | |
|---|---|
| Name: | Andrew Malsom |
| Address: | 141 NW Barstow St. Waukesha, WI 53187 |
| Phone: | (262) 548-6705 |
| E-mail: | Andrew.Malsom@dot.wi.gov |

**A.3 Coordination**

Coordinate work under this contract with the environment consultant:

| | |
|---|---|
| Consultant: | TRC Environmental Corporation |
| Address: | 150 N. Patrick Blvd. Suite 180, Brookfield, WI 53045 |
| Contact: | Bryan Bergmann, P.G. |
| Phone: | (262) 901-2126 office, (262) 227-9210 cell |
| Fax: | (262) 879-1220 |
| E-mail: | bbergmann@trcsolutions.com |

The role of the environmental consultant will be limited to:

1. Determining the location and limits of contaminated soil as expressed on the project plans and described in the this special provisions;
2. Providing field support during excavation activities;
3. Coordinating lab testing for landfill acceptance;
4. Identifying contaminated soils to be hauled to the landfill;
5. Obtaining landfill permitting and documentation of proper landfill disposal; and
6. Documenting that activities associated with management of contaminated soil are in conformance with the contaminated soil management methods for this project as specified herein.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the areas of treated wood pilings to the environmental consultant. Also notify the environmental consultant at least three calendar days prior to commencement of 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 areas of treated wood pilings. Perform excavation work in each of the contaminated areas on a continuous basis until excavation work is completed.

Identify the landfill that will be used for disposal of contaminated soils, and provide this information to the environmental consultant no later than 30 calendar days prior to commencement of excavation activities in the contaminated areas or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals for disposal. 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 Polycyclic aromatic hydrocarbons (PAHs) and Semi-volatile organic compounds (SVOCs). Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each contaminated site location as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer prior to the start of work.

**B (Vacant)**

**C Construction**
*Add the following to standard spec 205.3:*

Control operations in the contaminated areas to minimize the quantity of contaminated soil excavated.

Excavate the contaminated soil in the areas shown in the plan. Stockpile the material within the project footprint on DOT right-of-way, pending lab results and landfill acceptance. Construct and maintain a temporary stockpile of the material according to NR 718.05(3), including, but not limited to, placement of the contaminated soil/fill material on an impervious surface and covering the stockpile with impervious material to prevent infiltration of precipitation.

The environmental consultant will coordinate analytical testing of contaminated soil for landfill acceptance. Five business days should be allowed for the laboratory to conduct this testing and issue results. In the event the laboratory analytical test results do not indicate contamination is present, the stockpiled material may be considered common excavation and can be handled according to the erosion control implementation plan (ECIP).

Once landfill acceptance permitting is complete, directly load and haul soils to the landfill as directed by the environmental consultant. Use loading and hauling practices that are appropriate to prevent any spills or releases of contaminated soils or residues. Prior to transport, sufficiently dewater soils designated for off-site bioremediation so as not to contain free liquids. Verify that the vehicles used to transport contaminated material are licensed for such activity according to applicable state and federal regulations.

When material is encountered outside the above-identified limits of assumed contamination that appears to have been impacted with petroleum or chemical products, or when other obvious potentially contaminated materials are encountered or material exhibits characteristics of industrial-type wastes, such as fly ash, foundry sand, and cinders, or when underground storage tanks are encountered, suspend excavation in that area and notify the engineer and the environmental consultant.

Groundwater may be present within the construction limits. Water generated during dewatering operations (if necessary) is expected to be permitted to discharge to the surface except in the contaminated areas. Contaminated groundwater generated from dewatering activities within the contaminated areas, as well as runoff water from within the contaminated areas, may exceed the surface water discharge limits for petroleum compounds specified in the DNR's "General Permit to Discharge under the Wisconsin Pollutant Discharge Elimination System" for "Contaminated Groundwater from Remedial Action Operations" (WPDES Permit No. WI-0046566-5), Table 3.1.

If dewatering is required in an area of observed contamination, water generated from dewatering activities may contain PAHs, SVOCs, and Metals. Such water may, with approval of Villages of Mount Pleasant or Caledonia publicly owned treatment works (POTWs), be discharged to the respective sanitary system as follows:

1. Meet all applicable requirements of Villages of Mount Pleasant or Caledonia POTWs including the control of suspended solids. Perform all necessary monitoring to document compliance with Villages of Mount Pleasant or Caledonia POTWs requirements. Furnish, install, operate, maintain, disassemble, and remove treatment equipment necessary to comply with Villages of Mount Pleasant or Caledonia POTWs requirements.

2. Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities.

3. Notify the engineer of any dewatering activities, and obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statutes, judiciary decisions, and regulations of the State of Wisconsin.

Costs for this dewatering and disposing of contaminated water are incidental to the contract.

Employ construction methods and techniques in a manner that will minimize the need for dewatering, and if dewatering is required, minimize the volume of water generated. Take measures to limit groundwater, surface water, and precipitation from entering and exiting excavations in the areas of contamination. Such measures, which may include berming, ditching, or other means, shall be maintained until construction of utilities in the areas of contamination are complete.

Ensure continuous dewatering and excavation safety at all times. Provide, operate, and maintain adequate pumping equipment and drainage and disposal facilities. Notify the engineer of any dewatering activities, and obtain any permits necessary to discharge water. Provide copies of such permits to the engineer. Meet any requirements and pay any costs for obtaining and complying with such permit use. Follow all applicable legislative statues, judiciary decisions, and regulations of the State of Wisconsin.

**D Measurement**

The department will measure Excavation, Hauling, and Disposal of Creosote Contaminated Soil in tons of contaminated soil, accepted by the landfill as documented by weight tickets generated by the landfill.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0195.009 | Excavation, Hauling, and Disposal of Creosote Contaminated Soil | TON |

Payment is full compensation for excavating, stockpiling (including contractor-provided plastic sheeting to cover as well as place the material on), loading, and hauling the contaminated soil to a landfill; obtaining solid waste collection and transportation service operating licenses; and dewatering of soils prior to transport, if necessary.

## 188. Soil Drying Treatment, Item SPV.0195.011.

### A Description

This work will consist of drying embankments by mixing fly ash with the fill materials to facilitate compaction.

Use a soil drying treatment only when directed by the engineer and weather conditions are not conducive to using discing, natural sunlight and wind to dry the soil to within an acceptable range of soil moisture content for efficient compaction per the QMP Subgrade special provision. The drying treatment will be used principally in the late fall, winter and early spring when drying weather is not normally available. Soil should be dried per this specification when the moisture content is greater than the specified percent above the soil optimum moisture content and discing and air drying are not effective in reducing the soil moisture content. The contractor cannot use a soil drying treatment until the engineer determines that soil moisture content, project schedule and weather require that the treatment be used. Drying treatments will only be used to facilitate soil compaction after the approval and authorization of the engineer.

The drying treatment to be used for the project will be Fly Ash. Other drying treatments such as hydrated lime, lime kiln dust and cement kiln dust are not allowed to be used as drying treatments.

Drying treatments will not be considered as part of a Cost Reduction Incentive (CRI) and will have to meet the general requirements of this special provision. The fly ash is used in absorption and chemical binding of moisture to facilitate compaction. The intent of this specification is to dry the soil and not to increase the strength of the soil-fly ash mixture.

Fly ash can be used to dry most soils but the expectation is that it will be used for predominantly cohesive (clay - CL) and silty (ML and SM) soil. Clean sand and gravel will not benefit by addition of fly ash and therefore should not be dried using fly ash. The fly ash must be thoroughly mixed with the soil as fill lifts are placed to dry the soil and meet the compaction requirements.

### B Materials

Fly ash is a finely divided residue resulting from combustion of coal in an electric generating plant, transported from the boiler by flue gases and later collected by precipitators. The soil drying treatment must consist of Class C fly ash according to ASTM C618. The fly ash shall conform to the general requirements of standard spec 501.2

## C Construction

### C.1 Submittals

#### C.1.1 General

Prepare and submit soil drying treatment mix and work plan at least 10 calendar days prior to beginning drying treatment activities. A minimum dosage of 40 pounds of fly ash per square yard to an 8-inch depth/lift by the dry weight of the soil must be used. WisDOT will accept the submittal as submitted or return the submittal with requested revisions. Do not start any drying treatment work until WisDOT provides acceptance of soil drying treatment mix and work plan. Acceptance of the submittals does not relieve the contractor of responsibility for successful completion of the earthwork.

#### C.1.2 Submittals for Approval

**Soil Drying Treatment Mix:**

a. Submit mix designs for the drying treatment proposed for use. A mix design is required for each soil type and dosage rate. Resubmit as appropriate if the mixes are modified during the course of the work including fly ash source changes. The mix design must indicate the optimum amount of fly ash needed as a percentage of the soil dry weight for the soil to be dried. Each mix design shall show the ingredients of the mix and shall include:
    i. Type, source, and amounts of fly ash, and other additives.
    ii. Material Safety Data Sheet (MSDS) for the fly ash (provide once per fly ash source).
    iii. Source and amount of additional water, as needed.
    iv. Representative samples of soil and ash materials for materials test and mix proportion testing (provide once per soil type and fly ash source).
    v. Combined grading of each mix design.
    vi. Specific gravity of all materials.
    vii. Atterberg Limits tests (ASTM D-4318) for the soil and soil fly ash mixture.
    viii. Standard Proctor tests (ASTM D-698) on the soil and soil fly ash mixture.
    ix. Tests showing soil moisture loss with the proposed dosage rate.
    x. Results of required tests.
b. Submit certificates of compliance for each load of fly ash which is according to ASTM C618 and certificates of compliance for all admixtures. Supporting test data shall be furnished when requested by WisDOT. All testing and sampling procedures shall be according to ASTM C311.

**Soil Drying Treatment Work Plan:** The work plan for placing the soil drying treatment shall include:

a. Drying treatment placement methods, mixing procedures and sequences for soil drying.
b. Method of transporting and distributing fly ash into the soil including rotary mixer equipment and materials.

c. Means for measuring fly ash per fill area. Use of truck tickets that specify net weight of fly ash in a truck is acceptable.
d. Embankments to be treated, natural moisture contents of the cut to fill soils, and proposed dosage rates.

Submit a revised work plan reflecting any changes made during the course of the work. Do not continue with Soil Drying Treatment work until the revised work plan is approved by the engineer.

**C.1.3 Information Submittals**

**Soil Drying Treatment Daily Records:** Submit the following daily reports and records for soil drying treatment.

a. Daily logs of drying treatment placement operations at all locations (station and position) of embankment fill placement, including fly ash volumes, mix details and weather conditions.
b. Additional lab testing as identified in section C.1.2.a is expected to be required if the soil to be dried changes engineering characteristics. Supplemental test reports from a certified testing laboratory are required when the fill soil changes.

**C.1.4 Acceptance**

The department will evaluate the Submittals for Approval with the requirements of these special provisions. Within 5 calendar days after receipt of the Submittals of Approval, WisDOT will notify the contractor of the acceptance of the submittal, or if additional information and/or changes are required. Any unacceptable part of the Submittals of Approval will require resubmission. The contractor must resubmit the Submittals of Approval for evaluation and review with the necessary changes or additional information provided. WisDOT will provide a written notice of acceptance or rejection of contractor's resubmitted Submittal for Approval within 5 calendar days after its receipt.

After WisDOT's acceptance of Submittal of Approval, no changes to the Submittal of Approval can be made without written consent of WisDOT.

All Information Submittals should be submitted to WisDOT. WisDOT can reject the submittals which do not provide adequate detail, as required herein. The contractor shall resubmit the rejected submittals within seven days upon the receipt of WisDOT's rejection notice.

**C.2 General Soil Drying Requirement**

Notify WisDOT at least 24 hours in advance of the start of soil drying operations. Soil drying cannot be used on frozen soil or with frozen fly ash. Compaction must be started no later than 1 to 2 hours after the fly ash is mixed with the soil.

Soil drying treatment must be thoroughly mixed into each lift of wet soil using a rotary mixer to be sure that the fly ash is uniformly distributed and uniformly dries the soil to acceptable moisture content for compaction. Ensure that there are no gaps between each pass of the mixing operation in order to provide homogeneous mixing.

Soil drying can be performed in colder weather as long as the soil and fly ash are not frozen. If fill placement must occur during freezing conditions, soil drying can be used but any soil/fly ash mixture that freezes must be removed including materials that freeze overnight. The removal must extend to an unfrozen subgrade and the frozen material must be replaced with non-frozen soil or soil/fly ash.

**C.3 Cleanup**

Care must be exercised by the contractor to prevent fugitive dust containing fly ash while mixing and placing the ash. Minimize spilling and do not allow blowing of fly ash on areas that do not need to be dried. Remove or mix any spilled ash with soil to prevent ash from becoming air born. Properly dispose or all waste materials.

**D Measurement**

The department will measure Soil Drying Treatment per ton, acceptably completed, using truck weigh 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.0195.011 | Soil Drying Treatment | TON |

Payment for Soil Drying Treatment is full compensation for mobilization, providing, hauling and spreading the drying treatment, mixing drying treatment with wet soil for compaction, preparing submittals, soil testing, and maintaining daily records, including all necessary equipment, water and disposal of surplus materials.

Compaction of fill is paid for under other items and is not included in this item.

No additional payment will be provided for Soil Drying Treatment when used in previously placed embankment areas that have been removed as a result of frost or poor drainage.

## 189. Subgrade Strengthening Treatment, Item SPV.0195.012.

**A Description**

This work will consist of strengthening the prepared subgrade by mixing fly ash with the subgrade, adjusting moisture content as necessary, compacting the mixture, and curing the subgrade according to these specifications, as shown on the plans, or as directed by the engineer. Subgrade Strengthening Treatment will only be used to facilitate soil stabilization in cut subgrade sections after the approval and authorization of the engineer. Subgrade Strengthening Treatment will be used in lieu of EBS items to stabilize subgrade areas greater than 1,000 SY.

**B Materials**

Fly Ash -The contractor shall identify all sources of fly ash materials to be used for this work. The contractor shall prequalify each source of fly ash by obtaining a copy of the certified report of tests or analysis made by a qualified independent laboratory, recognized by the department. Certified reports of testing shall be less than 30 calendar days old and will be submitted to the engineer for approval 10 calendar days before using the fly ash. Fly ash shall be of the Class "C" designation containing a minimum of 25% CaO, and shall meet the chemical requirements of ASTM Specifications C-618, Section 3.3

Fly ash shall be stored and handled in closed weatherproof containers until immediately before distribution. Fly ash exposed to moisture prior to mixing with soils shall be discarded. If fly ash is furnished in trucks, each truck shall have the weight of fly ash certified on public scales or the contractor shall place a set of standard platform truck scales or hopper scales at a location approved by the engineer.

Water- Water used for mixing during the stabilization process shall comply with standard spec 501.2.4.

Equipment- The machine utilized to the blend and mix the fly ash into the subgrade shall be capable of reaching a depth of 12 inches in one pass and shall have a recycling or mixing drum. A water truck or spray bar attached to the mixing equipment shall have adequate volume control to maintain the moisture content of the mixed material within the specified range. A water truck shall be onsite during stabilization operations. A vibratory padfoot roller shall be used to achieve compaction of the mixed materials. Rubber tired rollers or smooth drum rollers will only be permitted for final finishing of the subgrade section.

All machinery, tools and equipment used shall be maintained in a satisfactory and workmanlike manner.

**C Construction**

**C.1 Submittals**

**C.1.1 Subgrade Strengthening Mix:**

Prepare and submit a subgrade strengthening mix design at least 10 days prior to the beginning of stabilization activities. A mix design is required for each soil type and fly ash dosage rate. Resubmit the mix design for engineer approval if the mixes are modified during the course of work. Each mix design shall show include:

a) Type, source, and amount of fly ash
b) Material Safety Data Sheet (MSDS) for each fly ash source.
c) Source and amount of water, as required.
d) Representative samples of soil and fly ash materials. Provide one sample per soil type and fly ash source.
e) Atterberg Limits tests (ASTM D-4318 and AASHTO T -89 and T-90) for the untreated soil.
f) Standard Proctor tests (AASHTO T-99) on the soil and soil fly ash mixture.
g) Tests showing soil moisture loss with the proposed dosage rate.
h) Results of required tests.

**C.1.2 Subgrade Strengthening Work Plan:**
Prepare and submit a subgrade strengthening work plan at least 10 days prior to the beginning of stabilization activities. The work plan shall include:

a) Fly ash placement methods, mixing procedures and sequences for soil stabilization.
b) Method of transporting and distributing fly ash into the soil including rotary mixer equipment and materials.
c) Means for measuring fly ash. Use of truck tickets that specify net weight of fly ash in a truck is acceptable.
d) Proposed curing procedures and dosage rates.

**C.1.3 General Requirements:**
**General:** The soil-fly ash mixture shall not be mixed while the atmospheric temperature is below 32°F or when conditions indicate that temperatures may fall below 32°F within 24 hours, when it is foggy or rain is imminent, or on frozen subgrade soils.

The contractor shall use necessary methods, procedures, and equipment to minimize fly ash dust during the operation. Fly ash shall not be mixed when the engineer determines conditions such that fly ash dust may be objectionable to adjacent property owners, violate air quality standards, or significantly reduce the amount of fly ash incorporated into the work.

The work shall be completed in a workmanlike manner as to produce a completed section of stabilized soil subgrade that contains a uniform mixture of fly ash and subgrade soil that has uniform density levels and moisture content. Moisture control shall be achieved through use of equipment capable of applying sufficient quantities of water to achieve the required moisture content for the soil-fly ash mixture. The system shall be capable of being regulated to the degree necessary as to maintain moisture contents within the recommended range during the mixing and curing operations.

**Subgrade Preparation**: Prior to placement of the fly ash, the area to be processed shall be shaped to the proper grade and cross section as shown on the plans and prepared according to standard spec 211. All vegetation, boulders, and objectionable material shall be removed from within the limits of modification.

**Application:** The fly ash shall be spread uniformly on the prepared subgrade within the limits of the Subgrade Strengthening Treatment. The fly ash shall be applied at a rate predetermined by the testing provided in the mix design and is subject to modification by the engineer. The subgrade shall be stabilized to a depth of 12 inches below final grade unless otherwise shown on the plans or as directed by the engineer.

The contractor shall remove and properly dispose of any fly ash placed outside of the stabilized area at no cost to the department.

**Mixing**: Mixing operations shall begin no later than 30 minutes after the beginning of the fly ash application unless otherwise directed by the engineer. The full depth of the treated subgrade shall be mixed with a rotary mixer until a homogenous, friable mixture of material free from lumps and clods is obtained. If the fly ash dosage rate fails to adequately stabilize the subgrade, additional fly ash may be added as directed by the engineer.

**Compaction**: Compaction shall begin immediately after mixing operations are completed. Compaction shall be completed within two hours following the incorporation of fly ash into the subgrade. During compaction, the subgrade surface shall be sprinkled with water as necessary to maintain moisture with the specified range.

The compacted mixture shall meet the quality control requirements for subgrade cut sections as defined in the article QMP Subgrade. Field moisture content shall have a lower control limit of 90 percent and an upper control limit of 105 percent of the optimum moisture as determined by AASHTO T99 or T272 for the 4-point running average.

**Curing:** The surface of the stabilized subgrade shall be finished with compaction equipment capable of removing ruts and irregularities. Construction traffic and placement of aggregate base on the stabilized section will not be permitted in the first 24 hours after compaction is completed. The surface of the stabilized section shall be protected against rapid drying and kept at optimum moisture for a period of not less than 72 hours following compaction.

Fly ash which has been damaged by hydration due to rain prior to or during the mixing operations, improper storage, or has been displaced by the contractor's equipment, or other traffic after application, shall be replaced at contractor cost. During cold weather, the stabilized section must be protected against freezing

**D Measurement**

The department will measure Subgrade Strengthening Treatment by the ton of material, furnished and acceptably incorporated into the project.

**E Basis of Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0195.012 | Subgrade Strengthening Treatment | TON |

Payment for Subgrade Strengthening Treatment is full compensation for furnishing and delivering the subgrade strengthening treatment, all required testing, mixing of the subgrade strengthening treatment into the subgrade, removal of boulders, for adjusting subgrade moisture as necessary, for compacting the stabilized soil mixture, for trimming and shaping the stabilized mixture, for all necessary curing materials and operations, for protecting the stabilized area from freezing, and for disposal of excess materials.

## 190. HMA Transverse Joint Repair, Item SPV.0195.015.

### A Description

This special provision describes providing transverse joint repairs in HMA pavements at bridges. Conform to standard spec 204, 315, 455, and 460, and as follows.

### B Materials

Furnish asphaltic mixture as specified for type 3 MT 58-28 S under standard spec 460.2.

Provide tack coat conforming to standard spec 455.2.5.

### C Construction

#### C.1 General

Remove an area 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.0195.015 | 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.

## 191. Manholes 4-FT Diameter Special, Item SPV.0200.002.

**A Description**

This special provision describes providing manholes for use with existing pipe underdrain conforming to the appropriate provisions of standard spec 611, the plan details and as modified in this special provision.

**B (Vacant)**

**C (Vacant)**

**D Measurement**

The department will measure Manholes 4-FT Diameter Special by the vertical foot of manhole acceptably completed, to the nearest 0.1 foot as defined by the "Depth as Shown on Plans" dimension per standard detail drawing. The "Depth as Shown on Plans" will be measured by the engineer in the field upon locating the existing drain tile.

**E Payment**

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---|---|---|
| SPV.0200.002 | Manholes 4-FT Diameter Special | VF |

Payment is full compensation for providing all materials, including all masonry, connections, steps, and other fittings; for all excavating, backfilling, disposing of surplus material, and for cleaning out and restoring the work site; except that the department will pay for covers, including frames, grates, lids and adjusting the covers separately.

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**ADDITIONAL SPECIAL PROVISION 1 (ASP 1)**
**FOR TRANSPORTATION ALLIANCE FOR NEW SOLUTIONS (TrANS)**
**PROGRAM EMPLOYMENT PLACEMENTS AND APPRENTICESHIPS**

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Section 5204(e) – Surface Transportation Workforce Development Training and Education, provides for 100 percent Federal funding if the core program funds are used for training, education, or workforce development purposes, including "pipeline" activities. The core programs includes: Congestion Mitigation and Air Quality Improvement (CMAQ) Program, Highway Bridge Program (HBP), Interstate Maintenance (IM), National Highway System (NHS), and Surface Transportation Program (STP). These workforce development activities cover surface transportation workers, including OJT/SS programs for women and minorities as authorized in 23 U.S.C. §140(b).

***TrANS*** is an employment program originally established in 1995 in Southeastern Wisconsin. Currently TrANS has expanded to include TrANS program locations to serve contractors in Southeast (Milwaukee and surrounding counties), Southcentral (Dane County and surrounding counties including Rock County), and most Northeastern Wisconsin counties from locations in Keshena, Rhinelander and surrounding far Northern areas. TrANS attempts to meet contractor's needs in other geographic locations as possible. It is an industry driven plan of services to address the outreach, preparation, placement and retention of women, minorities and non-minorities as laborers and apprentices in the highway skilled trades. These candidate preparation and contractor coordination services are provided by community based organizations. For a list of the TrANS Coordinators contact the Disadvantaged Business Enterprise Office at (414) 438-4583 in Milwaukee or (608) 266-6961 in Madison. These services are provided to you at no cost.

## *I. BASIC CONCEPTS*

Training reimbursements to employing contractors for new placements, rehires or promotions to apprentice of TrANS Program graduates will be made as follows:

1) **On-the-Job Training, Item ASP.1T0G, ASP 1 Graduate.** At the rate of $5.00 per hour on federal aid projects when TrANS graduates are initially hired, or seasonally rehired, as unskilled laborers or the equivalent.

   Eligibility and Duration: To the employing contractor, for up to 2000 hours from the point of initial hire as a TrANS program placement.

   Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that __27__ *(number)* TrANS Graduate(s) be utilized on this contract.

2) **On-the-Job Training, Item ASP.1T0A, ASP 1 Apprentice.** At the rate of $5.00 per hour on federal aid projects at the point when an employee who came out of the TrANS Program is subsequently entered into an apprenticeship contract in an underutilized skilled trade (this will include the Skilled Laborer Apprenticeship when that standard is implemented).

Eligibility and Duration: To the employing contractor, for the length of time the TrANS graduate is in apprentice status.

Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that 11 *(number)* TrANS Apprentice(s) be utilized on this contract.

3) The maximum duration of reimbursement is two years as a TrANS graduate plus time in apprentice status.

4) If a TrANS program is not available in the contractor's area and another training program is utilized, payment of On-the-Job Training hours may be approved by the Wisconsin Department of Transportation (WisDOT) if the training program meets the established acceptance criteria. Only On-the-Job Training Hours accumulated after WisDOT approval will be reimbursed as specified under Items ASP.1T0G and ASP.1T0A. For more information, contact the Disadvantaged Business Enterprise Office at the phone numbers listed above.

5) WisDOT reserves the right to deny payments under items ASP.1T0G and ASP.1T0A if the contractor either fails to provide training or there is evidence of a lack of good faith in meeting the requirements of this training special provision.

## *I. RATIONALE AND SPECIAL NOTE*

The $5.00 per hour now being paid for TrANS placements is intended to cover the duration of two years to allow for reaching entry-level laborer status. An additional incentive, the $5.00 rate, would promote movement into the underutilized skilled trades' apprenticeships and applies until the individual completes their apprenticeship. These incentives benefit TrANS candidates by giving them a better opportunity to enter a skilled trade; benefits contractors who will be assisted in meeting their EEO profiles and goals; and benefits the public who will see the program reinforce larger public-private employment reform in Wisconsin. The pool of TrANS graduates was created for the purpose of addressing underutilization in the skilled trades, an objective that is further reinforced by a parallel retention pilot program, known as the Companywide Reporting. *Whether or not reimbursement is involved, the WisDOT reassures contractors who are in the Companywide Program that TrANS placements still contribute toward fulfilling the new hire goal of 50% women and minorities.* Based on data administered by United States Department of Labor (US DOL), the highway skilled trades remain underutilized for women statewide (less than 6.9%); and for minorities in all counties (% varies by county).

*NOTE*: *Unless using other advancement strategies, contractors are encouraged to use some or all of this monetary incentive to offset the cut in hourly wages an individual may incur when entering an apprenticeship if the full general laborer hourly rate has been previously paid. No special accounting measures are required.*

## *II. IMPLEMENTATION*

The implementation of ASP 1 is intended to cover only the amount of time it takes for underutilization to be resolved across the trades. This will be measured annually at the county and/or state levels using data administered by WisDWD in relation to goals set by the USDOL-

OFCCP. With appropriate state and federal approvals, we may also do some measurement at the company level.

It is the contractor's responsibility to note on their Certified Payrolls if their employee is a TrANS graduate or a TrANS apprentice. The District EEO Coordinators utilize the information on the Certified Payrolls to track the hours accumulated by TrANS Graduates and TrANS apprentices on WisDOT contracts. Payment under this ASP 1 is made based on the hours recorded off of the Certified Payrolls. Tracking may eventually include improved linkages with the WisDWD apprentice database, information from company and committee level sources.

TrANS is nondiscriminatory by regulation, and is a tool for optional use by contractors to address the underutilization of women and minorities as laborers and apprentices in our industry's skilled trades.

## IV. *TRANS TRAINING*

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided to employees enrolled in apprenticeship and on-the-job training programs as follows:

The contractor shall provide on-the-job training aimed at developing full journey workers in the type of trade or job classifications involved. In the event the contractor subcontracts a portion of the contract work, the contractor shall determine how many, if any, of the trainees are to be trained by the subcontractor provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract.

Training and upgrading of minorities and women toward journey workers status is a primary objective of this training special provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority trainees and women trainees); to the extent such persons are available within a reasonable area of recruitment. The contractor will be given an opportunity and will be responsible for demonstrating the steps that they have taken in pursuance thereof, prior to determination as to whether the contractor is in compliance with this training special provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journey workers status or in which they have been employed as a journey worker. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the contractor's records should document the findings in each case.

## V. APPRENTICESHIP TRAINING

The Federal Highway Administration's (FHWA) policy is to require full use of all available training and skill improvement opportunities to assure increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The FHWA On-the-Job Training (OJT) Program requires the State transportation agencies (STAs) to establish apprenticeships and training programs targeted to move women, minorities, and disadvantaged individuals into journey-level positions to ensure that a competent workforce is available to meet highway construction hiring needs, and to address the historical under-representation of members of these groups in highway construction skilled crafts.

The OJT Supportive Services (OJT/SS) Program was established in Title 23 Code of Federal Regulations (CFR), Part 230) to supplement the OJT program and support STA training programs by providing services to highway construction contractors and assistance to highway construction apprentices and trainees. The primary objectives of OJT/SS are:

(1) To increase the overall effectiveness of the State highway agencies' approved training programs.
(2) To seek other ways to increase the training opportunities for women, minorities, and disadvantaged individuals.

The STAs are responsible for establishing procedures, subject to the availability of Surface Transportation and Bridge Funds under 23 U.S.C. §140(b*)* (Nondiscrimination), for the provision of supportive services with respect to training programs approved under 23 CFR, Part 230(a*)* (Equal Employment Opportunity on Federal and Federal-aid Construction Contracts – including Supportive Services).

The contractor and subcontractor shall maintain records to demonstrate compliance with these apprenticeship requirements. Reasonable exemptions and modifications to and from any or all of these requirements will be determined by the Wisconsin Department of Transportation-Civil Rights Office. A request for an exemption or modification, with justification, shall be made in writing, addressed to WisDOT Civil Rights Office, 4802 Sheboygan Avenue, P.O. Box 7965, Rm. 451, Madison, WI 53707.

# ADDITIONAL SPECIAL PROVISION 3

## DISADVANTAGED BUSINESS ENTERPRISE [DBE] PROGRAM IMPLEMENTATION

## 1. Description

a. The federal DBE program requirements outlined in the Code of Federal Regulations at 49 CFR Part 26 apply to this Wisconsin Department of Transportation contract. WisDOT is a recipient of federal funds and this contract includes federal funds. United States Department of Transportation Federal DBE Program requires the following provisions:

(1) Pursuant to the federal DBE program regulation at 49 CFR Part 26, a contractor's failure to comply with any provision of the DBE regulations will be considered a material breach of contract. This is non-negotiable. If a contractor fails to carry out the DBE program and Title VI nondiscrimination requirements of its contracts, the following sanctions will be assessed depending upon the facts, reasoning, severity and remedial efforts of the contractor: termination of contract, withholding payment, assessment of monetary sanctions, assessment of liquidated damages and/or suspension/debarment proceedings that may result in the disqualification of the contractor from bidding for a designated period of time.

(2) The contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains the federal fund recipient's [DOT] written consent. Unless [WisDOT] consent is provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

b. The Wisconsin Department of Transportation [WisDOT] is committed to the compliant administration of the DBE Program. Each WisDOT Secretary affirms this commitment with his/her signed assurance. http://wisconsindot.gov/Documents/doing-bus/civil-rights/dbe/policy-statement.pdf

(1) The department encourages the contractor to assist and develop DBE firms to become fully knowledgeable contractors to successfully perform on its contracts. Under the contract, the contractor agrees to provide the assistance to participating DBE's in the following areas:

i. Produce accurate and complete quotes.
ii. Understand highway plans applicable to their work.
iii. Understand specifications and contract requirements applicable to their work.
iv. Understand contracting reporting requirements.

(2) Wisconsin DOT 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, specified contract DBE goal by subcontracting work to a DBE or by procuring services or materials from a DBE. The department calculates the DBE participation as the dollar value of DBE participation included in the bid expressed as a percentage of the total contract bid amount.

(3) For more comprehensive information on the disadvantaged business program, visit the department's Civil Rights and Compliance Section website at: http://wisconsindot.gov/Pages/doing-bus/civil-rights/dbe/default.aspx

## 2. Definitions

Interpret these terms, used throughout this additional special provision, as follows:

a. **Bid Percentage:** The DBE percentage indicated in the bidding proposal at the time of bid.

b. **DBE:** A small business certified as disadvantaged business enterprise (DBE) under the federal DBE program and included on the Wisconsin UCP DBE Directory deemed ready, willing and able.

c. **DBE goal:** The amount of DBE participation expected in the contract as shown on the cover of the Highway Work Proposal.

d. **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.

e. **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.

f. **Voluntary Achievement:** The amount of DBE participation achieved and reported in the contract in excess of the assigned goal.

## 3. DBE Percentage Required at Bid Submission

Indicate the bid percentage (i.e. 0% through 100%) of DBE participation on the completed bidding proposal. For electronic submittals, show the percentage in the miscellaneous data folder, Item 3, DBE Percent. For paper submittals, show the percentage on the sheet included after the schedule of items. By submission of the bid, the bidder contractually commits to DBE participation at or above the bid percentage, or certifies that they have utilized comprehensive good faith efforts to solicit and utilize DBE firms to meet the DBE participation requirements of this contract proposal, and that the bid percentage is reflective of these good faith efforts. The bid percentage should demonstrate the efforts of the prime contractor prior to bid. If the bidder does not indicate the bid percentage of DBE participation on the completed bidding proposal, the department will consider the bid irregular and may reject the bid.

## 4. WisDOT Interpretation of Federal DBE Program Provision

Prime contractors must utilize the specific DBEs listed to perform the work and/or supply the materials for which each is listed on the Commitment to Subcontract to DBE Form [DT1506] and approved by WisDOT's DBE office to execute its contract. The approved Commitment to Subcontract to DBE Form [DT1506] becomes a contract document/record.

a. **Department's DBE Evaluation Process**
WisDOT evaluates DBE using the Commitment to Subcontract to DBE, payments to subcontractors and contract documentation. The prime contractor shall list the specific DBE certified firms and items of work s/he intends to use toward the fulfillment of the assigned DBE contract goal. The prime contractor receives DBE credit for payments made to the DBE firms performing the work listed on the approved Form DT1506.

b. **Documentation Submittal**
The contractor is to identify, by name, the DBE firms whose utilization is intended to satisfy this provision, the items of work of the DBE subcontract or supply agreement and the dollar value of those items of work by completing the Commitment to Subcontract to DBE Form [DT1506]. Effective January 1, 2017, the contractor will be required to submit the documentation within 5 business days after bid opening. All necessary supporting documentation including Attachment 'A' forms and/or Good Faith Efforts Form

[DT1202] must be submitted no later than 2 business days from contractor's initial submission of the DT 1506. The contractor must provide a signed Attachment 'A' form to the DBE office within the time limit in order to receive authorization for contract execution; the DBE office reserves the right accept alternate documentation in lieu of the signed form in extenuating circumstances. Documentation must be submitted to the DBE Office by email at DBE_Alert@dot.wi.gov (DBE_Alert@dot.wi.gov) or by postal mail ATTN: DBE Office, PO Box 7965, Madison, WI 53707-7965.

(1) **Bidder Meets DBE Goal**
If the bidder indicates that the contract DBE goal is met, after award and before execution, the department will evaluate the Commitment to Subcontract to DBE Form DT1506 and attachment A(s) to verify the actual DBE percentage calculation. If the DBE commitment is verified, the contract is eligible for execution with respect to the DBE commitment.

(2) **Bidder Does Not Meet DBE Goal**

i. If the bidder indicates a bid percentage on the Commitment to Subcontract to DBE Form [DT1506] that does not meet the contract DBE goal, the bidder must submit a Good Faith Efforts Form [DT1202] and supporting documentation. After award and before execution, the department will evaluate the bidder's DBE commitment and consider the bidder's good faith efforts submission.

ii. The department will evaluate the bidder's good faith effort request and notify the bidder of one of the following:

(a) If the department grants a good faith efforts, the bid is eligible for contract execution with respect to DBE commitment.

(b) If the department rejects the good faith efforts request, the department may declare the bid ineligible for execution. The department will provide a written explanation of why the good faith efforts request was rejected. The bidder may appeal the department's rejection as allowed under 7 a. & b.

c. **Bidder Fails to Submit Documentation**
If the contractor fails to furnish the Commitment to Subcontract to DBE Form [DT1506] within the specified time, the department may cancel the award. Delay in fulfilling this requirement is not a cause for extension of the contract time and shall not be used as a tool to delay execution.

## 5. Department's Criteria for Good Faith Effort

Appendix A of 49 CFR Part 26, is the guiding regulation concerning good faith efforts. However, the federal regulations do not explicitly define "good faith" but states that bidder must actively and aggressively attempt to meet the goal. The federal regulations are general and do not include every factor or effort that can be considered. As a result, each state must establish its own processes and consider the factors established in its own practices to create a process for making a determination of adequate good faith. WisDOT evaluates good faith on a contract basis just as each contract award is evaluated individually.

The department will only approve a contractor's good faith efforts if the bidder has made the effort, given the relevant circumstances under the contract that a bidder actively and aggressively seeking to meet the goal would make. The department will evaluate the bidder's good faith effort to determine whether a good faith efforts will be granted. The bidder must demonstrate, on the DT1202 that they have aggressively solicited DBE participation in an attempt to meet the contract DBE goal and attaining the stated DBE goal is not feasible.

a. The department, in conjunction with industry stakeholders, has developed the following guidance for contractor good faith effort. 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.

b. Prime Contractors should:

(1) Document all efforts and decisions made toward achieving the DBE goal on the contract. The bidder should use the Civil Rights & Compliance System [CRCS] and related WisDOT- approved DBE outreach tools, including the Bid Express Small Business Network, to foster DBE participation on all applicable contracts.

(2) Prime contractors may 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. Requesting assistance with outreach is not a decisive factor in the review Good faith effort evaluation. Phone numbers are 414-438-4584 and/or 414-659-0487; Fax: 414-438-5392; E-mail: DOTDBESupportServices@dot.wi.gov.

(3) Request quotes by identifying potential items to subcontract and solicit. Prime contractors are strongly encouraged to include in their initial contacts a single page including a 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 A*. 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's 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 you are seeking quotes to DOTDBESupportServices@dot.wi.gov.

ii. SBN is the preferred outreach tool. https://www.bidx.com/wi/main. Other acceptable means include postal mail, email, fax, phone call.

(a) Primes must ask DBE firms for a response in their solicitations. See *Sample Contractors Solicitation Letter* in Appendix. This letter can be included as an attachment to the SBN sub-quote request.

(b) Solicit quotes at least 10 calendar days prior to the letting date, at least two Fridays before the letting, 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) Second solicitation should take place within 5 calendar days. Email and SBN are the preferred delivery of the follow-up 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 Bid Express SBN Record of Subcontractor Outreach Effort.

c. Evaluate DBE quotes Documentation is critical if a prime does not utilize the DBE firm's quote for any reason.

(1) Evaluate DBE firm's capability to perform 'possible items to subcontract' using legitimate reasons, including but not limited to, ***a discussion with the DBE firm*** regarding its capabilities prior to the bid letting. If lack of capacity is your reason for not utilizing the DBE quote, you are 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 and/or NAICS code listed in the UCP directory can be counted toward DBE credit. Documentation of the conversation is required.

(2) In striving to meet an assigned DBE contract goal, prime contractors are expected to use DBE quotes that are responsive and reasonable. This includes DBE quotes that are not the low quote.

(3) **Special Circumstance** - Evaluation of DBE quotes with tied bid items. “Tied quotes are the condition in which a subcontractor submits quotes including multiple areas of expertise across multiple work areas noting that the items and price are tied. Typically this type of quoting represents a cost saving to the prime but is not clearly stated as a discount; tied quotes are usually presented as ‘all or none’ quote to the prime.” When non-DBE subcontractors submit tied bid items in their quotes to the prime, the DBE firms’ quote may seem not 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.

d. Immediately after notification of contract award, the prime submits all **'Commitment to Subcontract'** forms to the DBE Office. Prime contractor has 5 days to submit the completed form for the DBE firms it intends to use on the contract for DBE credit. If the goal is not met in full, the prime contractor must provide the following information along with WisDOT form DT1202: Certificate of Good Faith Efforts.

(1) The names, addresses, e-mail addresses, telephone numbers of DBE's contacted. The dates of both initial and follow-up contact.
(2) A description of information provided to the DBE's regarding the plans, specifications, and estimated quantities for portions of the work to be performed by that DBE.
(3) Photocopies or electronic copies of all written solicitations to DBE's. A printed copy of SBN solicitation is acceptable.
(4) Documentation of each quote received from a DBE and, if rejected, the reason for that rejection.
(5) Bidder attendance at any pre-solicitation or pre-bid meetings the department held to inform DBE's of participation opportunities available on the project.

The prime contractor must obtain written consent from the DBE Office to change or replace any DBE firm listed on the approved Commitment to Subcontract to DBE Form [DT1506]. If the prime contractor utilizes another contractor, including the use of its own workforce, to perform the work assigned to a DBE on the approved DT1506, the prime contractor will not be entitled to payment for that work. Any changes to DBE after the approval of the DT1506 must be reviewed and approved by the DBE office prior to the change.

## 6. 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, a prime contractor and the regular dealer of 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 in cases where the prime has submitted the DBE and material 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 is part of the value of work performed by the DBE to be counted toward the goal. To receive credit, the DBE 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 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 form or 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 supplies.

b. DBE subcontractor is responsible to furnish and/or install the material/work item. The DBE subcontractor shall not be an 'extra participant' in the transaction; the DBE'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 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 contractors negotiated unit price.

## 7. Bidder's Appeal Process

a. A bidder can appeal the department's decision to deny the bidder's good faith effort submission. The bidder must provide written documentation refuting the specific reasons for rejection as stated in the department's rejection notice. The bidder may meet in person with the department if so requested. Failure to appeal within 7 calendar days after receiving the department's written denial notice of a good faith effort evaluation constitutes a forfeiture of the bidder's right of appeal. A contract cannot be executed without documentation that the DBE provisions have been fulfilled.

b. The department will appoint a representative, who did not participate in the original determination, to assess the bidder's appeal. The department will issue a written decision within 5 calendar days after the bidder presents all written and oral testimony. In that written decision, the department will explain the basis for finding that the bidder did or did not meet the contract DBE goal or make an adequate good faith effort to meet the contract DBE goal. The department's decision is final. If the department finds that the bidder did not meet the contract DBE goal or did not make adequate efforts to meet the DBE goal, the department may declare the bid ineligible for execution.

## 8. Department's Criteria for DBE Participation

**Directory of DBE firms**

a. The only resource for DBE certified firms certified in the state of Wisconsin is the Wisconsin Unified Certification Program [UCP] DBE List. Wisconsin Department of Transportation maintains a current list of certified DBE firms titled Wisconsin UCP DBE Directory on the website at:
   http://wisconsindot.gov/Documents/doing-bus/civil-rights/dbe/dbe-ucp-directory.xlsx

b. The DBE office is also available to assist at 414-438-4583 or 608-267-3849.

## 9. Counting DBE Participation

**Assessing DBE Work**

a. 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 unified certification program agencies. If a firm becomes DBE certified before entering into a subcontract, the department may consider that DBE usage towards the contract goal. 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:

b. The department counts work performed by the DBE's own resources. The department includes the cost of materials and supplies the DBE obtains for the work. The department also includes the cost of equipment the DBE leases for the work. The department will not include the cost of materials, supplies, or equipment the DBE purchases or leases from the prime contractor or its affiliate, except the department will count non-project specific leases the DBE has in place before the work is advertised.

c. The department counts fees and commissions the DBE charges for providing a 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 engineer deems reasonable based on experience or prevailing market rates.

d. If a DBE subcontracts work, the department counts the value of the subcontracted work only if the DBE's subcontractor is also a DBE.

e. The contractor shall maintain records and may be required to furnish periodic reports documenting its performance under this item.

f. It is the prime contractor’s responsibility to determine whether the work that is committed and/or contracted to a DBE certified 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.

g. It is the prime contractor’s responsibility to assess the DBE firm’s ability to perform the work for which s/he 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.

## 10. Commercially Useful Function

a. Commercially useful function is evaluated after the contract has been executed, while the DBE certified firm is performing its work items. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved.

b. The department uses Form DT1011: DBE Commercially Useful Function Review and Certification to evaluate whether 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 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 contract work and it 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.

## 11. 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

## 12. 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 provides under the contract for DBE credit based on whether the DBE is a manufacturer, supplier or broker. Generally, DBE crediting measures and evaluates the DBE owner's role, responsibility and contribution to the transaction: maximum DBE credit when the DBE manufactures materials or supplies; DBE credit decreases when the DBE solely supplies material and minimal credit is allotted when the DBE's role is administrative or transactional.

It is the bidder's responsibility to find out if the DBE is considered a supplier or a manufacturer before listing them on Commitment to Subcontract to DBE form DT1506.

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, count **100%** percent of the cost of the materials or supplies 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.

c. Brokers, Transaction Expediters, Packagers, Manufacturers Representatives
   (1) No portion of the cost of the materials, supplies, services themselves will count for DBE credit; however, WisDOT will evaluate the fees or commissions charged when a prime purchases materials, supplies or services from a DBE certified firm which is neither a manufacturer nor a regular dealer, namely: brokers, packagers, manufacturers' representatives or other persons who arrange or expedite transactions.
   (2) Brokerage fees have historically been 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, or fees or transportation charges for the delivery of materials or supplies required on a job site.
   (4) The evaluation will review the contract need for the item/service, review the sub-contract or invoice for the item/service, compare the fees customarily allowed for similar services to determine whether they are reasonable.

When DBE suppliers are contracted, additional documentation must accompany the DT1506 and Attachment 'A' forms. An invoice or bill-of-sale that includes the company names of the bidder and the DBE supplier and 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*. Please respond to the following questions and submit with your DBE Commitment Form.

1. What is the product or material?
2. Is this item in the prime's inventory or was the item purchased when contract was awarded?
3. Which contract line items were referenced to develop this quote?
4. What is the amount of material or product used on the project?

## 13. Credit Evaluation for DBE Primes

Wisconsin DOT calculates DBE credit based on the amount and type of work performed by DBE certified firms. If the prime contractor is a DBE certified firm, the department will only count the work that DBE prime contractor performs with its own forces for DBE credit. We will also calculate DBE credit for the work performed by any other DBE certified subcontractor, DBE certified supplier, DBE certified manufacturer on that contract in that DBE's approved work areas/NAICS code. Crediting for manufacturers and suppliers is calculated consistent with paragraph 12 of this document and 49 CFR Part 26.

## 14. Joint Venture

If a DBE performs as a participant in a joint venture, the department will only count that portion of the total dollar value of the contract equal to that portion of the work that the DBE performs with its own forces for DBE credit.

## 15. Mentor Protégé

a. If a DBE performs as a participant in a mentor protégé agreement, the department will count for credit the portion of the work performed by the DBE protégé firm.

b. DBE credit will be 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.

c. Refer to WisDOT's Mentor Protégé guidelines for guidance on the number of contracts and amount of DBE credit that can be counted on any WisDOT project.

## 16. DBE Replacement or Termination

**Contractual Requirement**

The contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains written consent from the Department's DBE Office. If the Department does not provide consent to replace or terminate a DBE firm, the prime contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

**Contractor Considerations**

a. A prime contractor cannot terminate and/or replace a DBE subcontractor listed on the approved Commitment to Subcontract to DBE Form [DT1506] 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.

b. If a prime contractor feels it is necessary to replace or terminate a DBE firm that has been approved for DBE credit toward its contract, s/he will be required to provide reasons and documentation to support why the prime cannot fulfill the contractual commitment that it made to the Department regarding the DBE utilization.

c. Prime contractor is required to make affirmative efforts to find another DBE subcontractor to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the assigned DBE contract goal.

d. 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 is expected to make affirmative efforts to maintain its commitment to the assigned DBE goal.

e. The DBE firm should communicate with the prime contractor regarding its schedule and capacity in the context of the contract. If the DBE anticipates that it cannot fulfill its subcontract, s/he shall advise the prime contractor and suggest a DBE that may replace their services or provide written consent to be released from its subcontract.

(1) Before the prime contractor can request to terminate or substitute a DBE firm; s/he must:
   i. Make every effort to fulfill the DBE commitment by working with the listed DBE to ensure that they are fully knowledgeable of your expectations for successful performance on the contract. Document these efforts in writing.
   ii. If those efforts fail, provide written notice to the DBE subcontractor of your *intent to* request to terminate and/or replace the firm including the reason(s) you want to pursue this action.
   iii. Copy the DBE Office on all correspondence related to changing a DBE firm who has been approved for DBE credit on a contract including the preparation and coordination efforts with the DBE on the contract.
   iv. Clearly state the amount of time the DBE firm has to remedy and/or respond to your notice of intent to replace/terminate their firm from the contract. The DBE shall be allowed five days 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 manager must verify that waiting 5 days for a DBE performing traffic control work to respond would affect the public safety.
   v. The DBE subcontractor must forward a written response to the prime contractor and copy the DBE Office. The written response must outline why it objects to the proposed termination of its subcontract and list the reasons that WisDOT should not approve the request for their firm to be replaced or removed from the contract.

**The Request to Replace or Terminate a DBE**

The prime contractor must provide a written request to replace or terminate a DBE firm that has been approved for DBE credit on a WisDOT contract. The written request can be an email or printed document delivered by email or fax; at minimum, the request must contain the following:

1. Contract ID number.
2. Wisconsin DOT Contract Project Manager name and contact information.
3. DBE name and work type and/or NAICS code.
4. Contract's progress schedule.
5. Reason(s) for requesting that the DBE be replaced or terminated.
6. Attach/include all communication with the DBE to deploy/address/resolve work completion,

WisDOT will review your request and any supporting documentation that you submit to evaluate whether the circumstance and the reasons constitute a good cause for replacing or terminating the DBE that was approved for DBE credit on that contract.

*Examples of Good Causes to Replace a DBE 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.
- You have determined that the listed DBE subcontractor is not a responsible contractor.
- The listed DBE subcontractor voluntarily withdraws from the project and provides to you written notice of its withdrawal.
- The listed DBE is ineligible to receive DBE credit for the type of work required.
- A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract.

**Evaluation and Response to the Request**
If WisDOT determines that your reasons comply with the good cause standards; the DBE office will send the prime contractor and the WisDOT project manager an email stating that we concur with the reasons and approve the replacement or termination.

If WisDOT determines that your reasons do not comply with the good cause standards of the federal DBE program, the DBE Office will send the prime contractor an email that includes *the requirement* to utilize the committed DBE, *remedial actions* to support the completion of the contractual commitment, a list of available WisDOT support services *and administrative remedies that may be invoked* for failure to comply with federal DBE guidelines for DBE replacement.

The Wisconsin Department of transportation contact for all actions related to replacing a DBE is the DBE Program Chief and/or the DBE Program Engineer which can be reached at DBE_Alert@dot.wi.gov or by calling 608-267-3849.

## 17. DBE Utilization beyond the approved DBE Commitment Form DT1506

If the Prime/subcontractor increases the scope of work for a participating DBE or adds a DBE subcontractor that was not on the approved Form DT1506 at any time after contract award, s/he should follow these steps so that the participation can be accurately credited toward the DBE goal.

a. Send an email to the DBE Engineer at DBE_Alert@dot.wi.gov describing the work to be performed by the new DBE including the proposed schedule or duration, DBE name and contact information. You may also call the DBE Engineer at 414-659-0487 to notify him of the change verbally.
If the scope change added work for a participating DBE; list the date and reason for the scope change.

b. Forward a complete, signed Attachment 'A' form to the DBE Office at DBE_Alert@dot.wi.gov. A complete Attachment A includes DBE contact information, signature, subcontract value and proper description of the work areas to be performed by the DBE.
The DBE office will confirm the DBE participation and revise the DT1506 based on the email/discussion and attach the new/revised Attachment A to the Contract record/documentation.

## 18. Contract Modifications

When additional opportunity is available by contract modifications, the Prime Contractor shall utilize DBE Subcontractors that were committed to equal work items, in the original contract.

## 19. Payment

Costs for conforming to this Additional Special Provision (ASP) and any associated DBE requirements are incidental to the contract.

# APPENDIX A
## Sample Contractor Solicitation Letter Page 1
***This sample is provided as a guide not a requirement***

**GFW SAMPLE MEMORANDUM**

| | |
|---|---|
| **TO:** | DBE FIRMS |
| **FROM:** | POTENTIAL PRIME CONTRACTOR OR MAJOR SUBCONTRACTOR |
| **SUBJECT:** | **REQUEST FOR DBE QUOTES**<br>**LET DATE & TIME** |
| **DATE:** | MONTH DAY YEAR |
| **CC:** | DBE OFFICE ENGINEER |

Our company is considering bidding on the projects indicated on the next page, as a prime and/or a subcontractor for the Wisconsin Department of Transportation Month- date -year Letting. Page 2 lists the projects and work items that we may subcontract for this letting. We are interested in obtaining subcontractor quotes for these projects and work categories. Also note that we are willing to accept quotes in areas we may be planning to perform ourselves as required by federal rules.

Please review page 2, respond whether you plan to quote, highlight the projects and work items you are interested in performing and return it via fax or email within 3 days. Plans, specifications and addenda are available through WisDOT at the DBE Support Services office or at the Highway Construction Contract Information (HCCI) site at http://roadwaystandards.dot.wi.gov/hcci/

Your quote should include all of the costs required to complete the items you propose to perform including labor, equipment, material, and related bonding or insurance. The quote should note items that you are DBE certified to perform, tied items, and any special terms. Page 2, with the indicated projects and items you plan to quote, should be used as a cover sheet for your quote.

Please make every effort to have your quotes into our office by time deadline the prior to the letting date. ***Make sure the correct letting date, project ID and proposal number, unit price and extension are included in your quote.*** We prefer quotes be sent via SBN but prime's alternatives are acceptable. Our office hours are include hours and days. Please call our office as soon as possible prior to the letting if you need information/clarification to prepare your quote at contact number.

If you wish to discuss or evaluate your quote in more detail, contact us after the contract is awarded. Status of the contract can be checked at WisDOT's HCCI site at http://roadwaystandards.dot.wi.gov/hcci/

All questions should be directed to:

Project Manager, John Doe,
Phone: (000) 123-4567
Email: Joe@joetheplumber.com
Fax: (000) 123- 4657

# Sample Contractor Solicitation Letter Page 2

***This sample is provided as a guide not a requirement***

REQUEST FOR QUOTATION

**Prime's Name:** _____

**Letting Date:** _____

**Project ID:** _____

**Please check all that apply**

- ☐ Yes, we will be quoting on the projects and 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 's Contact Person | DBE Contractor Contact Person |
|---|---|
| | |
| Phone: | Phone |
| Fax: | Fax |
| Email: | Email |

**Please circle the jobs and items you will be quoting below**

| Proposal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| County | | | | | | | |

**WORK DESCRIPTION:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Clear and Grub | X | | X | X | | X | X |
| Dump Truck Hauling | X | | X | X | | X | X |
| Curb & Gutter/Sidewalk, Etc. | X | | X | X | | X | X |
| Erosion Control Items | X | | X | X | | X | X |
| Signs and Posts/Markers | X | | X | X | | X | X |
| Traffic Control | | X | X | X | | X | X |
| Electrical Work/Traffic Signals | | X | X | X | | X | |
| Pavement Marking | | X | X | X | X | X | X |
| Sawing Pavement | | X | X | X | X | X | X |
| QMP, Base | X | X | | X | X | X | X |
| Pipe Underdrain | X | | | X | | | |
| Beam Guard | | | | X | X | X | X |
| Concrete Staining | | | | | | | X |
| Trees/Shrubs | X | | | | | | X |

Again please make every effort to have your quotes into our office by time deadline prior to the letting date.

**We prefer quotes be sent via SBN but prime's preferred alternatives are acceptable**.

If there are further questions please direct them to the prime contractor's contact person at phone number.

# APPENDIX B
# BEST PRACTICES FOR PRIME CONTRACTOR & DBE SUBCONTRACTOR GOOD FAITH EFFORT

*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 do as thorough a job as possible 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 C
## Types of Efforts considered in determining GFE
*This list represents concepts being assessed; analysis requires additional steps*

1. Whether the contractor attended any pre-solicitation or pre-bid meetings that were scheduled by WisDOT to inform DBEs of contracting and subcontracting opportunities.
2. Whether the contractor provided written notice to a reasonable number of specific DBEs that their interest in the contract was being solicited, in sufficient time to allow the DBEs to participate effectively.
3. Whether the contractor followed up initial solicitations of interest by contacting DBEs to determine if the DBEs were interested; returned the phone calls of interested DBE firms.
4. Whether the contractor selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goal.
5. Whether the contractor provided interested DBEs with adequate information about the plans, specifications and requirements of the contract.
6. Whether the contractor negotiated in good faith with interested DBEs, not rejected DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities.
7. Whether the contractor made efforts to assist interested DBEs in being more competitive.
8. Whether the contractor effectively used the services of available minority community organizations: minority contractors groups, local, state, and Federal minority business assistance offices, and other organizations that provide assistance to small businesses and DBE firms.
9. Whether Prime used CRCS to identify DBE who specialize in relevant work areas.
10. Whether the contractor used available resources including contacting the DBE office, using WisDOT's website
11. Whether the contractor returned calls of firms expressing interest in a timely manner.

# APPENDIX D
# Good Faith Effort Evaluation Guidance
## *Excerpt from Appendix A of 49 CFR Part 26*

**APPENDIX A TO PART 26 -- GUIDANCE CONCERNING GOOD FAITH EFFORTS**

I. When, as a recipient, you establish a contract goal on a DOT assisted contract, a bidder must, in order to be responsible and/or responsive, make 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, it is up to you 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. 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: meeting quantitative formulas is not required.

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. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The bidder must 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 to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.

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.

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. 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 employee status) are not legitimate causes for the rejection or non solicitation of bids in the contractor's efforts to meet the project goal.

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, you may take into account the performance of other bidders in meeting the contract. 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 reasonable 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.

# Appendix E
# 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 completion at a later time.

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 is a part of the Bid Express® service that was created to ensure that small businesses have a centralized area to access information about upcoming projects. It can help small businesses learn more about opportunities, compete more effectively, network with other contractors and subcontractors, and win more jobs.

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.
    b. DBE firms can request a Bid Express Small Business Network Account at no cost by calling 414-438-4588.

# ADDITIONAL SPECIAL PROVISION 4

**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 may also withhold routine 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.

**Release of Routine Retainage**

After granting substantial completion the department may reduce the routine retainage withheld from the prime contractor to 75 percent of the original total amount retained.

When the Department sends the semi-final estimate the department may reduce the routine retainage withheld from the prime contractor to 10 percent of the original total amount retained.

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 and that no routine retainage is being withheld. The department will pay the prime contractor in full and reduce the routine retainage withheld from the prime contractor to zero when the department approves the final estimate.

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.

# 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 $2.15 per gallon.

**D Computing the Fuel Cost Adjustment**

The engineer will compute the ratio CFI/BFI each month. If the ratio falls between 0.85 and 1.15, inclusive, no fuel adjustment will be made for that month. If the ratio is less than 0.85 a credit to the department will be computed. If the ratio is greater than 1.15 additional payment to the contractor will be computed. Credit or additional payment will be computed as follows:

(1) The engineer will estimate the quantity of work done in that month under each of the contract items categorized in Section B.

(2) The engineer will compute the gallons of fuel used in that month for each of the contract items categorized in Section B by applying the unit fuel usage factors shown in Section B.

(3) The engineer will summarize the total gallons (Q) of fuel used in that month for the items categorized in Section B.

(4) The engineer will determine the Fuel Cost Adjustment credit or payment from the following formula:

$$FA = \left(\frac{CFI}{BFI} - 1\right) x\ Q\ x\ BFI$$

(plus is payment to contractor; minus is credit to the department)

| | | | |
|---|---|---|---|
| Where | FA | = | Fuel Cost Adjustment (plus or minus) |
| | CFI | = | Current Fuel Index |
| | BFI | = | Base Fuel Index |
| | Q | = | Monthly total gallons of fuel |

**E Payment**

A Fuel Cost Adjustment credit to the department will be deducted as a dollar amount each month from any sums due to the contractor. A Fuel Cost Adjustment payment to the contractor will be made as a dollar amount each month.

Upon completion of the work under the contract, any difference between the estimated quantities and the final quantities will be determined. An average CFI, calculated by averaging the CFI for all months that fuel cost adjustment was applied, will be applied to the quantity differences. The average CFI shall be applied in accordance with the procedure set forth in Section D.

# ADDITIONAL SPECIAL PROVISION 6
# ASP 6 - Modifications to the standard specifications

*Make the following revisions to the standard specifications:*

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**104.10.1 General**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Subsection 104.10 specifies a 2-step process for contractors to follow in submitting a cost reduction incentive (CRI) for modifying the contract in order to reduce direct construction costs computed at contract bid prices. The initial submittal is referred to as a CRI concept and the second submittal is a CRI proposal. The contractor and the department will equally share all savings generated to the contract due to a CRI as specified in 104.10.4.2(1). The department encourages the contractor to submit CRI concepts.

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**104.10.4.2 Payment for the CRI Work**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) The department will pay for completed CRI work as specified for progress payments under 109.6. The department will pay for CRI's under the Cost Reduction Incentive administrative item. When all CRI costs are determined, the department will execute a contract change order that does the following:

1. Adjusts the contract time, interim completion dates, or both.
2. Pays the contractor for the unpaid balance of the CRI work.
3. Pays the contractor 50 percent of the net savings resulting from the CRI, calculated as follows:

**NS = CW - CRW - CC - DC**

**Where:**

**NS** = Net Savings

**CW** = The cost of the work required by the original contract that is revised by the CRI. CW is computed at contract bid prices if applicable.[1]

**CRW** = The cost of the revised work, computed at contract bid prices if applicable.[1]

**CC =** The contractor's cost of developing the CRI proposal.

**DC** = The department's cost for investigating, evaluating, and implementing the CRI proposal.

[1] The department may adjust contract bid prices that, in the engineer's judgement, do not represent the fair value of the work deleted or proposed.

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**108.11 Liquidated Damages**

*Replace paragraphs two and three with the following effective with the December 2017 letting:*

(2) This deducted sum is not a penalty but is a fixed, agreed, liquidated damage due the department from the contractor for the added cost of engineering and supervision resulting from the contractor's failure to complete the work within the contract time.

(3) Unless enhanced in the special provisions, the department will assess the following daily liquidated damages

**LIQUIDATED DAMAGES**

| ORIGINAL CONTRACT AMOUNT | | DAILY CHARGE | |
|---|---|---|---|
| FROM MORE THAN | TO AND INCLUDING | CALENDAR DAY | WORKING DAY |
| $0 | $250,000 | $850 | $1700 |
| $250,000 | $500,000 | $815 | $1630 |
| $500,000 | $1,000,000 | $1250 | $2500 |
| $1,000,000 | $2,000,000 | $1540 | $3080 |
| $2,000,000 | ___ | $2070 | $4140 |

**203.3.2.2 Removal Operations**

*Replace the entire text with the following effective with the December 2017 letting:*

**203.3.2.2.1 General**

(1) Except as specified below for closing culverts, remove the entire top slab of box culverts and the entire superstructure of other culverts and bridges designated for removal. Completely remove existing piles, cribs, or other timber construction within the limits of new embankments, or remove these structures to an elevation at least 2 feet below finished ground line. Remove sidewalls or substructure units in water to an elevation no higher than the elevation of the natural stream or lake bed, or, if grading the channel is required under the contract or the plans, to the proposed finished grade of the stream or lake bed. Remove sidewalls or substructure units not in water down to at least 2 feet below natural or finished ground line.

(2) If extending or incorporating existing culverts and bridges in the new work, remove only those parts of the existing structure as necessary to provide a proper connection to the new work. Saw, chip, or trim the connecting edges to the required lines and grades without weakening or damaging the remaining part of the structure. During concrete removal, do not damage reinforcing bars left in place as dowels or ties incorporated into the new work.

(3) Remove pipe culverts designated for salvage in a way that prevents damage to the culverts.

(4) Dismantle steel structures or parts of steel structures designated for salvage in a way that avoids damage to the members. If the contract specifies removing the structure in a way that leaves it in a condition suitable for re-erection, matchmark members with durable white paint before dismantling. Mark pins, bolts, nuts, loose plates, etc., similarly to indicate their proper location. Paint pins, bolts, pinholes, and machined surfaces with a department-approved rust preventative. Securely wire loose parts to adjacent members, or label and pack them in boxes.

(5) Remove timber structures or parts of timber structures designated for salvage in a way that prevents damage to the members.

(6) If the engineer approves, the contractor may temporarily use materials designated for salvage in falsework used to construct new work. Do not damage or reduce the value of those materials through temporary use.

**203.3.2.2.2 Deck Removal**

(1) Protect the work as specified in 107.14 during deck removal. Minimize debris falling onto water surfaces and wetlands as the contract specifies in 107.18 or in the special provisions. Also, minimize debris falling on the ground and roadway.

(2) Do not damage existing bar steel reinforcement, girders, or other components that will be incorporated in new work. Remove decks on prestressed concrete girders using a hydraulic shear or other engineer-approved equipment. Thoroughly clean, realign, and retie reinforcement as necessary.

(3) After deck removal is complete, notify the engineer to request a damage survey. Point out damage to the engineer. Allow one business day for the engineer to complete the damage survey. If damage is identified, the department will determine if repairs or girder restoration will be allowed.

(4) If the department allows girder restoration, have a professional engineer registered in the State of Wisconsin analyze the effect of the damage to the bridge, make recommendations, and prepare signed and sealed computations and structural details required to restore girders to their previous structural capacity. Submit the restoration proposal, including analysis and structural details, to the department and design engineer of record. The department will accept or reject the restoration proposal within 3 business days. Do not begin restoration work until the department allows in writing.

(5) The engineer will not extend contract time to assess or remediate contractor caused damage.

**203.5.1 General**

*Replace paragraph two with the following effective with the December 2017 letting:*

(2) Payment is full compensation for breaking down and removing; costs associated with contractor-caused damage; required salvaging, storing, and disposing of materials; and, unless the contract specifies granular backfill, for backfilling.

**415.2.3 Expansion Joint Filler**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Furnish expansion joint filler conforming to AASHTO M153, AASHTO M213, or ASTM D8139 in lengths equal to the pavement lane width and of the thickness and height the plans show. Where dowel bars are required, use filler with factory-punched holes at the dowel bar locations and with a diameter not greater than 1/8 inch larger than the nominal dowel bar diameter.

**415.3.20 Filling Joints**

*Replace paragraph two with the following effective with the December 2017 letting:*

(2) Clean joints of laitance, curing compound, and other contaminants before filling. Saw construction joints at least 3/4 inches deep before filling. Sawing is not required for tooled joints in curb and gutter. Sandblast or waterblast exposed joint faces using multiple passes as required to clean joints surfaces of material that might prevent bonding. Blow clean and dry with oil-free compressed air immediately before filling.

**415.5.1 General**

*Replace paragraph six with the following effective with the December 2017 letting:*

(6) Payment for Concrete Pavement Joint Filling is full compensation for filling concrete pavement joints; filling adjacent curb and gutter joints; and for sawing.

**440.3.4.2 Contractor Testing**

*Replace paragraph two with the following effective with the December 2017 letting:*

(2) Coordinate with the engineer at least 24 hours before making profile runs for acceptance unless the engineer approves otherwise. The department may require testing to accommodate staged construction or if corrective action is required.

**455.5.3 Tack Coat**

*Replace paragraph two with the following effective with the December 2017 letting:*

(2) The department will adjust pay for Tack Coat, under the Nonconforming Tack Coat administrative item, for nonconforming material the engineer allows to remain in place at a maximum of 75 percent of the contract unit price.

### 460.2.7 HMA Mixture Design

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) For each HMA mixture type used under the contract, develop and submit an asphaltic mixture design according to CMM 8-66 and conforming to the requirements of table 460-1 and table 460-2. The values listed are design limits; production values may exceed those limits. The department will review mixture designs and report the results of that review to the designer according to CMM 8-66.

**TABLE 460-2 MIXTURE REQUIREMENTS**

| Mixture type | LT | MT | HT | SMA |
|---|---|---|---|---|
| ESALs x $10^6$ (20 yr design life) | <2.0 | 2 - <8 | >8 | ___ |
| LA Wear (AASHTO T96) | | | | |
| 100 revolutions(max % loss) | 13 | 13 | 13 | 13 |
| 500 revolutions(max % loss) | 50 | 45 | 45 | 40 |
| Soundness (AASHTO T104) (sodium sulfate, max % loss) | 12 | 12 | 12 | 12 |
| Freeze/Thaw (AASHTO T103) (specified counties, max % loss) | 18 | 18 | 18 | 18 |
| Fractured Faces (ASTM D5821) (one face/2 face, % by count) | 65/___ | 75 / 60 | 98 / 90 | 100/90 |
| Flat & Elongated (ASTM D4791) (max %, by weight) | 5 (5:1 ratio) | 5 (5:1 ratio) | 5 (5:1 ratio) | 20 (3:1 ratio) |
| Fine Aggregate Angularity (AASHTO T304, method A, min) | 40 | 43 | 45 | 45 |
| Sand Equivalency (AASHTO T176, min) | 40 | 40 | 45 | 50 |
| Gyratory Compaction | | | | |
| Gyrations for $N_{ini}$ | 6 | 7 | 8 | 8 |
| Gyrations for $N_{des}$ | 40 | 75 | 100 | 65 |
| Gyrations for $N_{max}$ | 60 | 115 | 160 | 160 |
| Air Voids, $\%V_a$ ($\%G_{mm}$ $N_{des}$) | 4.0 (96.0) | 4.0 (96.0) | 4.0 (96.0) | 4.0 (96.0) |
| % $G_{mm}$ $N_{ini}$ | <= 91.5[1] | <= 89.0[1] | <= 89.0 | ___ |
| % $G_{mm}$ $N_{max}$ | <= 98.0 | <= 98.0 | <= 98.0 | ___ |
| Dust to Binder Ratio[2] (% passing 0.075/$P_{be}$) | 0.6 - 1.2 | 0.6 - 1.2 | 0.6 - 1.2 | 1.2 - 2.0 |
| Voids filled with Binder (VFB or VFA, %) | 68 - 80[4] [5] | 65 - 75[3] [5] | 65 - 75[3] [5] | 70 - 80 |
| Tensile Strength Ratio (TSR) (AASHTO T283)[6] [7] | | | | |
| no antistripping additive | 0.75 min | 0.75 min | 0.75 min | 0.75 min |
| with antistripping additive | 0.80 min | 0.80 min | 0.80 min | 0.80 min |
| Draindown (AASHTO T305) (%) | ___ | ___ | ___ | 0.30 |

[1] The percent maximum density at initial compaction is only a guideline.

[2] For a gradation that passes below the boundaries of the caution zone (ref. AASHTO M323), the dust to binder ratio limits are 0.6 - 1.6.

[3] For No. 5 (9.5mm) and No. 4 (12.5 mm) nominal maximum size mixtures, the specified VFB range is 70 - 76 percent.

[4] For No. 2 (25.0mm) nominal maximum size mixes, the specified VFB lower limit is 67 percent.

[5] For No. 1 (37.5mm) nominal maximum size mixes, the specified VFB lower limit is 67 percent.

[6] WisDOT eliminates freeze-thaw conditioning cycles from the TSR test procedure.

[7] Run TSR at asphalt content corresponding to 3.0% air void regressed design using distilled water for testing.

**460.2.8.2.1.3.1 Contracts with 5000 Tons of Mixture or Greater**

*Replace paragraph six with the following:*

(6) Conduct TSR tests during mixture production according to CMM 8-36.6.14. Test each full 50,000 ton production increment, or fraction of an increment, after the first 5000 tons of production. Perform required increment testing in the first week of production of that increment. If production TSR values are below the limit specified in CMM 8-36.6.14, notify the engineer. The engineer and contractor will jointly determine a corrective action.

**502.2.7 Preformed Joint Filler**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Use preformed joint filler conforming to AASHTO M153, AASHTO M213, or ASTM D8139.

**502.3.7.8 Floors**

*Replace paragraph fourteen with the following effective with the December 2017 letting:*

(14) Unless specified otherwise, transversely tine finish the floors of structures with approach pavements designed for speeds of 40 mph or greater as specified in 415.3.8.3, except make the tining 1/8 inch in depth and do not perform tining within 12 inches of gutters. The contractor may apply a broom finish, described below, instead of the artificial turf drag finish required before tining. The contractor may perform tining manually, if it obtains a finish satisfactory to the engineer. Perform tining within 20 degrees of the centerline of bearing of the substructure units on bridge decks having skew angles of 20 degrees or greater.

**505.2.6 Dowel Bars and Tie Bars**

*Replace the entire text with the following effective with the March 2018 letting:*

**505.2.6.1 General**

(1) Furnish bars coated in a plant certified by the Concrete Reinforcing Steel Institute. For dowel bars and straight tie bars, there is no requirement for bend tests. Ensure that the bars are the specified diameter and length the plans show.

(2) The contractor need not coat or patch sawed ends, sheared ends, cut ends, ends left bare during the coating process, or ends with damaged coating.

(3) The contractor need not repair circumferential coating damage from shipping, handling, or installation, if the following conditions are met:

1. The damaged area is 1/4 inch square or smaller.
2. The total damaged area in any one-foot length does not exceed 2 percent of the circumferential area in that length.

(4) Repair areas of damaged circumferential coating larger than 1/4 inch square. Reject bars with total damage greater than 2 percent of the bar's circumferential area.

**505.2.6.2 Dowel Bars**

**505.2.6.2.1 General**

(1) Ensure that the bars are straight, round, smooth, and free from burrs or other deformations detrimental to the free movement of the bar in the concrete.

(2) Saw bars to the required length. For solid bars, the department will allow shearing if no damage occurs to the coating and shearing distortions do not exceed the following:

1. No distorted diameter is more than 0.04 inches greater than the true diameter.
2. No distortion extends more than 0.40 inches from the sheared end.

(3) Apply a surface treatment to loose dowels, or furnish manufacturer-treated bars in dowel bar baskets, capable of preventing bond between the epoxy-coated bars and the concrete. Apply field surface treatments when loading bars in the dowel bar magazine.

**505.2.6.2.2 Solid Dowel Bars**

(1) Furnish coated bars conforming to AASHTO M31 grade 40 or 60. Alternatively the contractor may furnish dowel bars conforming to AASHTO M227 grade 70-80. Coat with a thermosetting epoxy conforming to AASHTO M254, type B.

**505.2.6.2.3 Tubular Dowel Bars**

(1) Furnish welded steel tubular bars conforming to ASTM A513 fabricated from plain carbon steel with a minimum tensile yield strength of 60 ksi and sized as follows:

| SOLID BAR SPECIFIED DIAMETER | MINIMUM REQUIRED OUTSIDE DIAMETER | MINIMUM BASE METAL WALL THICKNESS |
|---|---|---|
| 1 1/4-inch | 1 5/16 inches | 0.120 inch |
| 1 1/2-inch | 1 5/8 inches | 0.120 inch |

(2) Cap bar ends to prevent intrusion of concrete or other materials. Ensure that tubing is galvanized on the exterior and interior according to ASTM A653 with a G40 zinc coating and apply 7-13 mils of epoxy to the galvanized exterior according to AASHTO M254, Type B.

**505.2.6.2.4 High Performance Dowel Bars**

(1) As an alternate the contractor may furnish high performance dowel bars from the department's APL.

**505.2.6.3 Tie Bars**

(1) Furnish coated bars conforming to AASHTO M31 grade 40 or 60. Coat tie bars as specified in 505.2.4 for coated high-strength steel reinforcement. Ensure that the tie bars are the shape the plans show.

(2) Repair, with compatible coating material, the bend location of field-straightened coated tie bars.

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**614.2.1 General**

*Add the following as paragraph ten effective with the December 2017 letting:*

(10) Furnish guardrail reflectors from the department's APL.

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**614.3.2.1 Installing Posts**

*Add the following as paragraph five effective with the December 2017 letting:*

(5) Provide post-mounted reflectors every 100 feet with one at the beginning and end of each run and a minimum of three reflectors per run.

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**614.5 Payment**

*Replace paragraph four with the following effective with the December 2017 letting:*

(4) Payment for the Steel Thrie Beam, Steel Plate Beam Guard, Guardrail Stiffened, MGS Guardrail, Short Radius, and various transition bid items is full compensation for providing guardrail and transitions including post-mounted reflectors; for repairing damaged zinc coatings; and for excavating, backfilling, and disposing of surplus material.

---

**641.2.9 Overhead Sign Supports**

*Replace paragraph three with the following effective with the December 2017 letting:*

(3) Provide steel pole shafts, mast arms or trusses, and luminaire arms zinc coated according to ASTM A123. The contractor may provide either straight or tapered pole and arm shafts unless the plans specify otherwise. Provide bolts and other hardware conforming to 641.2.2.

**642.2.2.1 General**

*Replace the entire text with the following effective with the December 2017 letting:*

(1) Provide each field office with two rooms, separated by an interior door with a padlock. Ensure that each room has a separate exterior door and its own air conditioner. Locate the office where a quality internet connection can be achieved.

(2) Provide long distance telephone service via a land line for exclusive department use that has the following:

- Two programmable touch-tone phones, one of which is cordless. Ensure that phone operations will not interfere with other telecommunications equipment.
- Voice mail service or an answering machine.

(3) Provide high-speed internet service for exclusive department use via cable or DSL connection with a modem/router and capable of supporting cloud enabled file sharing, voice over internet protocol (VoIP), video conferencing, and web based applications. Ensure that system meets the following:

- Includes a wireless network for the field office.
- Can accommodate IPSec based VPN products.
- Has a bandwidth range as follows:

| | |
|---|---|
| Field office with 1-5 staff: | A minimum connection speed of 5 Mbps download and 1 Mbps upload. If a cable or DSL option is not available the contractor may provide a personal hotspot using cell phone tethering or other device able to achieve the specified minimum speeds inside the field office. |
| Field office with 6 or more staff: | A minimum connection speed of 10 Mbps + 1/2 Mbps per user download and 5 Mbps upload. |
| Projects over 500 million dollars: | A minimum connection speed of 20 Mbps + 1/2 Mbps per user download and 10 Mbps upload. Coordinate network setup at the leased office with the WisDOT network team. |

(4) Provide and maintain a Windows 7 and Windows 10 compliant multi-function device with copy, print, and scan capabilities that can accommodate both 8 1/2" x 11" and 11" x 17" paper. Replenish paper, toner cartridges, and other supplies before fully expended. Ensure that department staff can connect to the device either directly or through the field office wireless network.

(5) Equip with a drafting table with a drafter's stool. Except as specified in 642.2.2.4, provide 2 ergonomically correct office chairs in working condition with, at a minimum, the following:

1. Five-legged base with casters.
2. Seat adjustable from 15 to 22 inches from the floor with a seamless waterfall, rounded, front edge.
3. High backrest with no arms or adjustable arms.

**643.3.1 General**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Provide and maintain traffic control devices located where the plans show or engineer directs to maintain a safe work zone throughout the contract duration. Relocate as required to accommodate changing work operations. When not in use, place devices away from traffic outside of paved and gravel shoulder surfaces. Where there is barrier on the shoulder, the contractor may place devices not in use on the shoulder as close as possible to the barrier and delineated with drums. Lay signs and supports flat on the grade with uprights oriented parallel to and downstream from traffic. Do not stack devices or equipment. Promptly remove temporary devices from within the project limits as follows:

- That will not be used within 14 consecutive calendar days.
- Within 5 business days of substantial completion unless the engineer allows otherwise.

**645.2.2.2 Geotextile, Type SAS (Subgrade Aggregate Separation)**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Furnish fabric conforming to the following physical properties:

| TEST | METHOD | VALUE[1] |
|---|---|---|
| Minimum grab tensile strength | ASTM D4632 | 170 lb |
| Minimum puncture strength | ASTM D6241 | 350 lb |
| Maximum apparent opening size | ASTM D4751 | No. 70 |
| Minimum permittivity | ASTM D4491 | 0.35 $s^{-1}$ |

[1] All numerical values represent minimum/maximum average roll values. Average test results from all rolls in a lot must conform to the tabulated values.

**645.2.2.4 Geotextile, Type DF (Drainage Filtration)**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Furnish fabric conforming with the physical requirements of either schedule A, schedule B, or schedule C as the contract specifies.

| SCHEDULE A TEST | METHOD | VALUE[1] |
|---|---|---|
| Minimum grab tensile strength | ASTM D4632 | 110 lb |
| Minimum puncture strength | ASTM D6241 | 200 lb |
| Minimum apparent breaking elongation | ASTM D4632 | 30% |
| Maximum apparent opening size | ASTM D4751 | 300 µm |
| Minimum permittivity | ASTM D4491 | 0.70 $s^{-1}$ |

| SCHEDULE B TEST | METHOD | VALUE[1] |
|---|---|---|
| Minimum grab tensile strength | ASTM D4632 | 180 lb |
| Minimum puncture strength | ASTM D6241 | 350 lb |
| Minimum apparent breaking elongation | ASTM D4632 | 30% |
| Maximum apparent opening size | ASTM D4751 | 300 µm |
| Minimum permittivity | ASTM D4491 | 1.35 $s^{-1}$ |

| SCHEDULE C TEST | METHOD | VALUE[1] |
|---|---|---|
| Minimum grab tensile strength | ASTM D4632 | 180 lb |
| Minimum puncture strength | ASTM D6241 | 350 lb |
| Minimum apparent breaking elongation | ASTM D4632 | 15% |
| Maximum apparent opening size | ASTM D4751 | 600 µm |
| Minimum permittivity | ASTM D4491 | 1.00 $s^{-1}$ |

[1] All numerical values represent minimum/maximum average roll values. Average test results from all rolls in a lot must conform to the tabulated values.

**645.2.2.6 Geotextile, Type R (Riprap)**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Use fabric conforming to the following physical properties:

| TEST | METHOD | VALUE[1] |
|---|---|---|
| Minimum grab tensile strength | ASTM D4632 | 205 lb |
| Minimum puncture strength | ASTM D6241 | 400 lb |
| Minimum apparent breaking elongation | ASTM D4632 | 15% |
| Maximum apparent opening size | ASTM D4751 | No. 30 |
| Minimum permittivity | ASTM D4491 | 0.12 $s^{-1}$ |

[1] All numerical values represent minimum/maximum average roll values. Average test results from all rolls in a lot must conform to the tabulated values.

**645.2.2.7 Geotextile, Type HR (Heavy Riprap)**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Use fabric conforming to the following physical properties:

| TEST | METHOD | VALUE[1] |
|---|---|---|
| Minimum grab tensile strength, lb | ASTM D4632 | 305 lb |
| Minimum puncture strength, lb | ASTM D6241 | 500 lb |
| Minimum apparent breaking elongation, % | ASTM D4632 | 15% |
| Maximum apparent opening size | ASTM D4751 | No. 30 |
| Minimum permittivity | ASTM D4491 | 0.40, $s^{-1}$ |

[1] All numerical values represent minimum/maximum average roll values. Average test results from all rolls in a lot must conform to the tabulated values.

**645.2.2.8 Geotextile, Type C (Modified SAS)**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Use fabric conforming to the following physical properties:

| TEST | METHOD | VALUE[1] |
|---|---|---|
| Grab tensile strength, lb | ASTM D4632 | 205 lb |
| Puncture strength, lb | ASTM D6241 | 350 lb |
| Maximum apparent opening size | ASTM D4751 | No. 50 |
| Minimum permittivity | ASTM D4491 | 0.12 $s^{-1}$ |

[1] All numerical values represent minimum/maximum average roll values. Average test results from all rolls in a lot must conform to the tabulated values.

**646.3.1.1 General Marking**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Prepare the surface and apply marking as the manufacturer specifies. Provide manufacturer specifications as the engineer requests. Do not mark over a marking product with less adherence or over chipped or peeled marking. Do not remove polymer overlay materials in areas receiving pavement marking. Use only epoxy pavement marking where the contract requires marking placed on polymer overlays.

*Replace paragraph five with the following effective with the December 2017 letting:*

(5) After the marking can sustain exposure to traffic, re-apply clear protective surface treatment conforming to 502.2.11 where removed from structures during marking surface preparation. Seal exposed concrete including grooves for tape. Cover marking during resealing with a system that will not degrade the marking's retroreflectivity when removed. Uncover marking before opening to traffic.

**701.3 Contractor Testing**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Perform contract required QC tests for samples randomly located according to CMM 8-30. Also perform other tests as necessary to control production and construction processes, and additional testing enumerated in the contractor's quality control plan or that the engineer directs. Use test methods as follows:

**TABLE 701-2 TESTING STANDARDS**

| TEST | TEST STANDARD |
|---|---|
| Washed P 200 analysis | AASHTO T11[1] |
| Sieve analysis of fine and coarse aggregate | AASHTO T27[1] |
| Aggregate moisture | AASHTO T255[1] |
| Sampling freshly mixed concrete | AASHTO R60 |
| Air content of fresh concrete | AASHTO T152[2] |
| Air void system of fresh concrete | AASHTO Provisional Standard TP118 |
| Concrete slump | AASHTO T119[2] |
| Concrete temperature | ASTM C1064 |
| Concrete compressive strength | AASHTO T22 |
| Making and curing concrete cylinders | AASHTO T23 |
| Standard moist curing for concrete cylinders | AASHTO M201 |

[1] As modified in CMM 8-60.

[2] As modified in CMM 8-70.

**715.2.3.1 Pavements**

*Add the following as paragraph six effective with the December 2017 letting:*

(6) For new lab-qualified mixes, test the air void system of the proposed concrete mix conforming to AASHTO provisional standard TP 118. Include the SAM number as a part of the mix design submittal.

**715.3.1.1 General**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) Provide slump, air content, concrete temperature and compressive 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 sublot. Cast three cylinders for strength evaluation. For pavement concrete, also test the air void system conforming to AASHTO provisional standard TP118 at least once per lot and enter the SAM number in the MRS for information only.

**715.3.1.3 Department Verification Testing**

*Replace paragraph one with the following effective with the December 2017 letting:*

(1) The department will perform verification testing as specified in 701.4.2 with additional testing as required to obtain at least 1 verification test per lot for air content, slump, temperature, and compressive strength.

## Errata

*Make the following corrections to the standard specifications:*

---

**106.3.3.1 General**

*Correct errata by changing "acceptance" to "approval".*

(1) For manufactured products or assemblies, the department may base approval on a product certification or require both a product certification and production plant certification.

---

**205.3.1 General**

*Correct errata by replacing paragraphs three and four with the following to reflect current practice to incorporate suitable materials.*

(3) Replace unsuitable material with satisfactory material. Trim and finish the roadway. Maintain the work done under 205 in a finished condition until acceptance.

---

**305.1 Description**

*Correct errata to clarify that the contractor may use more than one material under a single contract.*

(1) This section describes constructing a dense graded base using one or more of the following aggregates at the contractor's option:

| | |
|---|---|
| Crushed stone | Reclaimed asphalt |
| Crushed gravel | Reprocessed material |
| Crushed concrete | Blended material |

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**521.2 Materials**

*Correct errata by deleting bullet three and including aluminum coated pipe in bullet one.*

(1) Furnish corrugated steel pipe and steel apron end walls as follows:

- Corrugated steel culvert pipe, steel apron endwalls, aluminum coated corrugated steel culvert pipe, and other components conforming to AASHTO M36.
- Polymer coated corrugated steel culvert pipe and pipe arch fabricated from zinc coated sheet steel conforming to AASHTO M218. Before fabrication, coat the sheets on both sides with polymer protective coating grade 250/250 according to AASHTO M246. Fabricate the pipe according to AASHTO M245.

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**614.3.2.2 Installing Rail**

*Correct errata for splice location and allow punching or drilling holes and slots.*

(1) Install rail with lap splices in the direction of traffic. Ensure that the number and dimensions of holes and bolts conforms to the plan details for new splices. Place the round head of bolts on the traffic side.

(2) Cut rails to length by shearing or sawing; do not use cutting torches. Drill or punch bolt holes and slots; ensure that they are burr free. After installation, cut anchor bolts that project more than one inch from the nut to 1/2 inch from the nut; deburr the threaded end of cut bolts.

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**618.1 Description**

*Correct errata by deleting designated detours from the scope of Maintenance and Repair of Haul Roads.*

(1) This section describes maintaining, repairing, and restoring all public roads, streets, drainage facilities, and other components used for hauling by contractor, subcontractor, or supplier to support work for a department contract to its pre-haul condition. Public roads and streets shall be limited to those not a part of the State Trunk Highway System and from now on called haul roads.

**643.3.5.2 Cellular Communication**

*Correct errata by changing State Traffic Operations Center to Traffic Management Center.*

(2) A minimum of 14 days before deployment, demonstrate to the department that the cellular modem is capable of communications with the Traffic Management Center. If remote communications are interrupted or temporarily unavailable, the department will notify the contractor to change messages manually. Update messages within 2 hours of receiving notification.

**646.3.1.2 Liquid Marking**

*Correct errata by changing "epoxy overlays" to "polymer overlays".*

(5) Apply liquid marking and glass beads across the line at or exceeding the following:

| LIQUID MARKING | PAVEMENT TYPE | THICKNESS (mils) | BEAD APPLICATION (pounds per gallon) |
|---|---|---|---|
| Paint | all | 16 | 8-10 |
| Epoxy | SMA, seal coats, and polymer overlays | 25 | 25 |
| Epoxy | all other | 20 | 22.5 |

**654.5 Payment**

*Correct errata to clarify that contractor-provided anchor rods and associated hardware are incidental.*

(2) Payment for the Bases bid items is full compensation for providing concrete bases; for embedded conduit and electrical components; for anchor rods, nuts, and washers; for bar steel reinforcement; and for excavating, backfilling, and disposing of surplus materials.

# 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. 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).
6. All agreements made by a contractor shall include the provisions in A(1), (2), (3), (4) and (5), and shall be binding on all first tier subcontractor relationships and all contractors and subcontractors utilizing DBE firms on the project.

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:

http://wisconsindot.gov/Documents/doing-bus/civil-rights/labornwage/crcs-payments-sublets-manual.pdf

**ASP-8** **January 8, 2009**

# I-94 North-South Corridor
# EEO/AA Requirements for Contractors and Subcontractors
## (OFFICE OF FEDERAL CONTRACT COMPLIANCE PROGRAMS, US DEPARTMENT OF LABOR)

**1.** Prime Contractor(s) and subcontractors awarded a construction contract in excess of $10,000 at any tier for construction work under the contract **shall comply** with the requirements of **Executive Order 11246 as amended, Section 503 of The Rehabilitation Act of 1973 as amended and the Vietnam Era Veterans' Readjustment Assistance Act of 1974 as amended (38 U.S.C. 4212).**

**2.** The contractor shall provide written notification to the District Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Dept. of Labor/ESA, 310 West Wisconsin Avenue, Suite 1115, Milwaukee, WI 53202 - phone: (414) 297-3822, fax: (414) 297-4038, within 10 working days of the award of any construction contract (subcontract) in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. This notification shall include name, address and telephone number of the subcontractor, employer identification number (EIN), dollar amount of the contract, and the estimated starting and completion date. This notification provision applies to 2nd and 3rd tier subcontractors, etc. as well as the prime contractor.

**3.** The prime contractor and each subcontractor are required to complete a monthly Utilization Report. The report will include the total number of work hours broken out by construction trade and classification (supervisor, journey or apprentice), race and gender. The report will also include the number of employees within each trade and classification by race and gender. These reports will be entered into the Civil Rights Compliance System(CRCS) in accordance with WisDOT requirements. However, if USDOL is denied access to the CRCS, the contractor will be notified by USDOL. The contractor will submit directly to USDOL at the address above, the Utilization Report and number of employees as described earlier in this paragraph.

**4.** The prime contractor and each subcontractor are to provide a list of employees who worked on this project by name, race, sex, trade, classification (foreman/supervisor, journey, apprentice, trainee), if the person was a TrANS grad, and date of hire into the prime or subcontractor's workforce. This will be sent to the U. S. Department of Labor, OFCCP when the last work hours are reported for the project by each contractor.

**5.** The **Prime Contractor** is required to **appoint an EEO/Affirmative Action (EEO/AA) Manager for the project.** Each **subcontractor is required to appoint an EEO/AA Project Coordinator.** The EEO/AA Manager shall have overall responsibility for the

monitoring of EEO/AA compliance by the prime contractor and by all subcontractors working on this project (for all construction work originated by the Prime Contractor).

**6.** The prime contractor shall establish a **Special Project Affirmative Action Oversight Committee (SPAAOC)** comprised of OFCCP, and other representatives from state/local Civil Rights Enforcement/Development Agencies, labor unions, community constituents representing minority and female groups and other government and non-government agencies as needed. The first meeting will be held as soon as possible prior to the start of the project. Thereafter, the SPAAOC shall meet periodically throughout the course of the contract to discuss EEO/AA issues.

**7.** A designated EEO representative of each contractor on the project must attend a technical assistance seminar sponsored by OFCCP to understand their obligations under Executive Order 11246 as amended, Section 503 of The Rehabilitation Act of 1973 as amended and the Vietnam Era Veterans' Readjustment Assistance Act of 1974 as amended (38 U.S.C. 4212). If the contractor's EEO representative has attended an OFCCP technical assistance seminar during the previous 12 calendar months, they will be exempt from this requirement.

**8.** The EEO/AA goals (good faith effort) for this contract are:

| | |
|---|---|
| Nation wide: | 6.9% for Females of total work hours by trade |
| Milwaukee County: | 8.0% for Minorities of total work hours by trade |
| Racine County: | 8.4% for Minorities of total work hours by trade |
| Kenosha County: | 3.0% for Minorities of total work hours by trade |

# ADDITIONAL SPECIAL PROVISION 9
# Electronic Certified Payroll Submittal

(1) Use the department's Civil Rights Compliance System (CRCS) to submit certified payrolls electronically. Details are available online through the department's highway construction contractor information (HCCI) site on the Labor, Wages, and EEO Information page at:

http://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/default.aspx

(2) Ensure that all tiers of subcontractors, including all trucking firms, submit their weekly certified payrolls electronically through CRCS. These payrolls are due within seven calendar days following the close of the payroll period. Every firm providing physical labor towards completing the project is a subcontractor under this special provision.

(3) Upon receipt of contract execution, promptly make all affected firms aware of the requirements under this special provision and arrange for them to receive CRCS training as they are about to begin payrolls. The department will provide training either in a classroom setting at one of our regional offices or by telephone. Contact Paul Ndon at (414) 438-4584 to schedule the training.

(4) The department will reject all paper submittals of forms DT-1816 and DT-1929 for information required under this special provision. All costs for conforming to this special provision are incidental to the contract.

(5) Firms wishing to export payroll data from their computer system into CRCS should have their payroll coordinator contact Paul Ndon at paul.ndon@dot.wi.gov. Not every contractor's payroll system is capable of producing export files. For details, see Section 4.8 CPR Auto Submit (Data Mapping) on pages 49-50; 66-71 of the CRCS Payroll Manual at:

http://wisconsindot.gov/Documents/doing-bus/civil-rights/labornwage/crcs-payroll-manual.pdf

**REQUIRED CONTRACT PROVISIONS**
**FEDERAL-AID CONSTRUCTION CONTRACTS**

I. General
II. Nondiscrimination
III. Nonsegregated 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. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

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 (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).

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.

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). 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 bid proposal or request for proposal 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).

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.

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. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

## II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 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 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, 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 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, 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 230, 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 (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 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 35 and 29 CFR 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.

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, 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 who 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.

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, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure 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. 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, 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, 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 there under. 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, 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 and 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. Assurance Required by 49 CFR 26.13(b):**

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor 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 contracting agency deems appropriate.

**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 $10,000 or more.

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, 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). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

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**

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

**2. Withholding**

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

**3. Payrolls and basic records**

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee ( e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

**4. Apprentices and trainees**

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

**9. Disputes concerning labor standards.** 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 he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

## V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

**2. Violation; liability for unpaid wages; liquidated damages**. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 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.

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

**VI. SUBLETTING OR ASSIGNING THE CONTRACT**

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

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” 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:

(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.

2. 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. 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.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

**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 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.

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 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).

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 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 1, 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**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

**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.

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.

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.

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.

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 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee 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 grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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

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.

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. 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 Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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. 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) 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;

(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; 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.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **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)

a. By signing and submitting this proposal, the prospective lower tier 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.

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 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 grantee or subgrantee 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 grantee or subgrantee 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.

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.

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 Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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.

* * * * *

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall 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 20).

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.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

# Non-discrimination Provisions

**During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:**

**1. Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

**2. Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

**3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

**4. Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

**5. Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

a. Withholding payments to the contractor under the contract until the contractor complies; and/or
b. Cancelling, terminating, or suspending a contract, in whole or in part.

**6. Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

**During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:**

**Pertinent Non-Discrimination Authorities:**

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

**SEPTEMBER 2002**

## NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Employment Practices" and "Equal Opportunity Clause" set forth in the Required Contract Provisions, FHWA 1273.

2. The goals and timetables for minority and female participation expressed in percentage terms for the contractor's aggregate work force in each trade, on all construction work in the covered area, are as follows:

**Goals for Minority Participation for Each Trade:**

| County | % | County | % | County | % |
|---|---|---|---|---|---|
| Adams | 1.7 | Iowa | 1.7 | Polk | 2.2 |
| Ashland | 1.2 | Iron | 1.2 | Portage | 0.6 |
| Barron | 0.6 | Jackson | 0.6 | Price | 0.6 |
| Bayfield | 1.2 | Jefferson | 7.0 | Racine | 8.4 |
| Brown | 1.3 | Juneau | 0.6 | Richland | 1.7 |
| Buffalo | 0.6 | Kenosha | 3.0 | Rock | 3.1 |
| Burnett | 2.2 | Kewaunee | 1.0 | Rusk | 0.6 |
| Calumet | 0.9 | La Crosse | 0.9 | St. Croix | 2.9 |
| Chippewa | 0.5 | Lafayette | 0.5 | Sauk | 1.7 |
| Clark | 0.6 | Langlade | 0.6 | Sawyer | 0.6 |
| Columbia | 1.7 | Lincoln | 0.6 | Shawano | 1.0 |
| Crawford | 0.5 | Manitowoc | 1.0 | Sheboygan | 7.0 |
| Dane | 2.2 | Marathon | 0.6 | Taylor | 0.6 |
| Dodge | 7.0 | Marinette | 1.0 | Trempealeau | 0.6 |
| Door | 1.0 | Marquette | 1.7 | Vernon | 0.6 |
| Douglas | 1.0 | Menominee | 1.0 | Vilas | 0.6 |
| Dunn | 0.6 | Milwaukee | 8.0 | Walworth | 7.0 |
| Eau Claire | 0.5 | Monroe | 0.6 | Washburn | 0.6 |
| Florence | 1.0 | Oconto | 1.0 | Washington | 8.0 |
| Fond du Lac | 1.0 | Oneida | 0.6 | Waukesha | 8.0 |
| Forest | 1.0 | Outagamie | 0.9 | Waupaca | 1.0 |
| Grant | 0.5 | Ozaukee | 8.0 | Waushara | 1.0 |
| Green | 1.7 | Pepin | 0.6 | Winnebago | 0.9 |
| Green Lake | 1.0 | Pierce | 2.2 | Wood | 0.6 |

**Goals for female participation for each trade: 6.9%**

These goals are applicable to all the contractor's construction work, (whether or not it is federal or federally assisted), performed in the covered area. If the contractor performs construction work in the geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The contractor's compliance with the Executive Order and the Regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the Regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

   As referred to in this section, the Director means:

   Director
   Office of Federal Contract Compliance Programs
   Ruess Federal Plaza
   310 W. Wisconsin Ave., Suite 1115
   Milwaukee, WI 53202

   The "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

4. As used in this notice, and in the contract resulting from solicitation, the "covered area" is the county(ies) in Wisconsin to which this proposal applies.

**APRIL 2013**

## ADDITIONAL FEDERAL-AID PROVISIONS

NOTICE TO ALL BIDDERS

To report bid rigging activities call:

**1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bidding collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

**Effective August 2015 letting**

## BUY AMERICA PROVISION

All steel and iron materials permanently incorporated in this project shall be domestic products and all manufacturing and coating processes for these materials from smelting forward in the manufacturing process must have occurred within the United States. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to the requirements of Buy America. The exemption of this requirement is the minimal use of foreign materials if the total cost of such material permanently incorporated in the product does not exceed one-tenth of one percent (1/10 of 1%) of the total contract cost or $2,500.00, whichever is greater. For purposes of this paragraph, the cost is that shown to be the value of the subject products as they are delivered to the project. The contractor shall take actions and provide documentation conforming to CMM 2-28.5 to ensure compliance with this “Buy America” provision.

http://wisconsindot.gov/rdwy/cmm/cm-02-28.pdf

Upon completion of the project certify to the engineer, in writing using department form WS4567, that all steel, iron, and coating processes for steel or iron incorporated into the contract work conform to these "Buy America" provisions. Attach a list of exemptions and their associated costs to the certification form. Department form WS4567 is available at:

http://wisconsindot.gov/hcciDocs/contracting-info/ws4567.doc

Effective February 2016 letting

# Cargo Preference Act Requirement

All Federal-aid projects shall comply with 46 CFR 381.7 (a) – (b) as follows:

(a) *Agreement Clauses.* "Use of United States-flag vessels:"

(1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590."

(b) *Contractor and Subcontractor Clauses.* "Use of United States-flag vessels: The contractor agrees—"

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

**Effective with December 2017 Letting**

# WISCONSIN DEPARTMENT OF TRANSPORTATION
# DIVISION OF TRANSPORTATION AND SYSTEM DEVELOPMENT

## SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS FOR PROJECTS WITH FEDERAL AID

## I. PREVAILING WAGE RATES

The attached U.S. Department of Labor (Davis-Bacon Minimum Wage Rates) furnishes the minimum prevailing wage rates pursuant to the Davis-Bacon and Related Acts. The wage rates shown are the minimum rates required by the contract to be paid during its life, however this is not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price will be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

## II. COVERAGE OF TRUCK DRIVERS

Truck drivers are covered by Davis-Bacon Minimum Wage Rates in the following circumstances:

- Drivers of a contractor or subcontractor for time spent working on the site of the work.
- Drivers of a contractor or subcontractor for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimis. https://www.dol.gov/whd/FOH/FOH_Ch15.pdf
- Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the work and the actual construction site.
- Truck drivers transporting portions of the building or work between a site established specifically for the performance of the contract where a significant portion of such building or work is constructed and the physical place where the building or work called for in the contract will remain.

Truck drivers are not covered by Davis-Bacon Minimum Wage Rates in the following circumstances:

- Material delivery truck drivers while off the site of the work.
- Drivers of a contractor or subcontractor traveling between a Davis-Bacon job and a commercial supply facility while they are off the site of the work."
- Truck drivers whose time spent on the site of the work is de minimis, such as only a few minutes at a time merely to pick up or drop off materials or supplies.

Details are available online at:
https://www.dol.gov/whd/recovery/pwrb/Tab9.pdf
http://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/trckng.aspx

## III. POSTINGS AT THE SITE OF THE WORK

In addition to the required postings furnished by the department, the contractor shall post the following in at least one conspicuous and accessible place at the site of work:

a. A copy of the contractor's Equal Employment Opportunity Policy.

All required documents shall be posted by the first day of work and be accurate and complete. Postings must be readable, in an area where they will be noticed, and maintained until the last day of work.

## IV. RESOURCES

Required information regarding compliance with federal provisions is found in the following resources:

- FHWA-1273 included in this contract
- U.S. Department of Labor Prevailing Wage Resource Book
- U.S. Department of Labor Field Operations Handbook
- U.S. Code of Federal Regulations
- Any applicable law, Act, or Executive Order enacted by the federal government at the time of the letting of this contract

General Decision Number: WI180010 01/05/2018  WI10

Superseded General Decision Number: WI20170010

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: Under Executive Order (EO) 13658, an hourly minimum wage of $10.35 for calendar year 2018 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, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.35 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 calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

| Modification Number | Publication Date |
|---|---|
| 0 | 01/05/2018 |

BRWI0001-002 06/01/2016

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 31.84 | 20.95 |

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BRWI0002-002 06/01/2016

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 37.04 | 19.70 |

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BRWI0002-005 06/01/2016

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 | $ 35.07 | 20.51 |

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BRWI0003-002 06/01/2016

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 32.22 | 20.57 |

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BRWI0004-002 06/01/2016

KENOSHA, RACINE, AND WALWORTH COUNTIES

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 36.59 | 21.49 |

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BRWI0006-002 06/01/2016

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 33.04 | 19.75 |

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BRWI0007-002 06/01/2016

GREEN, LAFAYETTE, AND ROCK COUNTIES

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 33.53 | 20.95 |

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BRWI0008-002 06/01/2016

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 36.98 | 20.62 |

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BRWI0011-002 06/01/2016

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 32.22 | 20.57 |

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BRWI0019-002 06/01/2016

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 31.98 | 20.81 |

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BRWI0034-002 06/01/2015

COLUMBIA AND SAUK COUNTIES

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 32.86 | 17.22 |

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CARP0087-001 05/01/2016

BURNETT (W. of Hwy 48), PIERCE (W. of Hwy 29), POLK (W. of Hwys 35, 48 & 65), AND ST. CROIX (W. of Hwy 65) COUNTIES

| | Rates | Fringes |
|---|---|---|
| Carpenter & Piledrivermen | $ 36.85 | 18.39 |

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CARP0252-002 06/01/2016

ADAMS, BARRON, BAYFIELD (Eastern 2/3), BROWN, BUFFALO, BURNETT (E. of Hwy 48), CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE (except area bordering Michigan State Line), FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE (except N.E. corner), MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwys 29 & 65), POLK (E. of Hwys 35, 48 & 65), PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST CROIX (E. of Hwy 65), TAYLOR, TREMPEALEAU, VERNON, VILAS,

WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

| | Rates | Fringes |
|---|---|---|
| CARPENTER | | |
| CARPENTER | $ 33.56 | 18.00 |
| MILLWRIGHT | $ 35.08 | 18.35 |
| PILEDRIVER | $ 34.12 | 18.00 |

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CARP0252-010 06/01/2016

ASHLAND COUNTY

| | Rates | Fringes |
|---|---|---|
| Carpenters | | |
| Carpenter | $ 33.56 | 18.00 |
| Millwright | $ 35.08 | 18.35 |
| Pile Driver | $ 34.12 | 18.00 |

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CARP0264-003 06/01/2016

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WAUKESHA, AND WASHINGTON COUNTIES

| | Rates | Fringes |
|---|---|---|
| CARPENTER | $ 35.78 | 22.11 |

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CARP0361-004 05/01/2016

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

| | Rates | Fringes |
|---|---|---|
| CARPENTER | $ 34.57 | 18.16 |

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CARP2337-001 06/01/2016

ZONE A: MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON

ZONE B: KENOSHA & RACINE

| | Rates | Fringes |
|---|---|---|
| PILEDRIVERMAN | | |
| Zone A | $ 31.03 | 22.69 |
| Zone B | $ 31.03 | 22.69 |

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* ELEC0014-002 12/01/2017

ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (except Maryville, Colby, Unity, Sherman, Fremont, Lynn & Sherwood), CRAWFORD, DUNN, EAU CLAIRE, GRANT, IRON, JACKSON, LA CROSSE, MONROE, PEPIN, PIERCE, POLK, PRICE, RICHLAND, RUSK, ST CROIX, SAWYER, TAYLOR, TREMPEALEAU, VERNON, AND WASHBURN COUNTIES

| | Rates | Fringes |
|---|---|---|
| Electricians: | $ 33.21 | 19.75 |

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ELEC0014-007 06/05/2017

REMAINING COUNTIES

| | Rates | Fringes |
|---|---|---|
| Teledata System Installer | | |
| Installer/Technician | $ 25.81 | 14.01 |

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).

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ELEC0127-002 06/01/2017

KENOSHA COUNTY

| | Rates | Fringes |
|---|---|---|
| Electricians: | $ 38.50 | 30%+10.57 |

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ELEC0158-002 06/05/2017

BROWN, DOOR, KEWAUNEE, MANITOWOC (except Schleswig), MARINETTE(Wausuakee and area South thereof), OCONTO, MENOMINEE (East of a ine 6 miles West of the West boundary of Oconto County), SHAWANO (Except Area North of Townships of Aniwa and Hutchins) COUNTIES

| | Rates | Fringes |
|---|---|---|
| Electricians: | $ 31.48 | 19.18 |

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ELEC0159-003 06/05/2017

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 |
|---|---|---|
| Electricians: | $ 37.75 | 20.96 |

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ELEC0219-004 06/01/2016

FLORENCE COUNTY (Townships of Aurora, Commonwealth, Fern, Florence and Homestead) AND MARINETTE COUNTY (Township of Niagara)

| | Rates | Fringes |
|---|---|---|
| Electricians: | | |
| Electrical contracts over $180,000 | $ 32.38 | 18.63 |
| Electrical contracts under $180,000 | $ 30.18 | 18.42 |

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ELEC0242-005 06/04/2017

DOUGLAS COUNTY

| | Rates | Fringes |
|---|---|---|
| Electricians: | $ 35.90 | 25.64 |

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ELEC0388-002 05/30/2016

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: | $ 30.69 | 26.00% +10.05 |

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ELEC0430-002 06/01/2017

RACINE COUNTY (Except Burlington Township)

| | Rates | Fringes |
|---|---|---|

Electricians:.....$ 37.32 21.07

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ELEC0494-005 06/01/2017

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

| | Rates | Fringes |
|---|---|---|
| Electricians:..... | $ 37.51 | 24.42 |

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ELEC0494-006 06/01/2017

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

| | Rates | Fringes |
|---|---|---|
| Electricians:..... | $ 32.06 | 21.88 |

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ELEC0494-013 06/01/2015

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..... | $ 16.47 | 14.84 |
| Technician..... | $ 26.00 | 17.70 |

Installation, testing, maintenance, operation and servicing of all sound, intercom, telephone interconnect, closed circuit TV systems, radio systems, background music systems, language laboratories, electronic carillion, antenna distribution systems, clock and program systems and low-voltage systems such as visual nurse call, audio/visual nurse call systems, doctors entrance register systems. Includes all wire and cable carrying audio, visual, data, light and radio frequency signals. Includes the installation of conduit, wiremold, or raceways in existing structures that have been occupied for six months or more where required for the protection of the wire or cable, but does not mean a complete conduit or raceway system. work covered does not include the installation of conduit, wiremold or any raceways in any new construction, or the installation of power supply outlets by means of which external electric power is supplied to any of the foregoing equipment or products

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ELEC0577-003 06/01/2017

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:..... | $ 31.15 | 18.22 |

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ELEC0890-003 06/01/2017

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

| | Rates | Fringes |
|---|---|---|
| Electricians:..... | $ 33.25 | 19.34 |

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ELEC0953-001 07/01/2015

| | Rates | Fringes |
|---|---|---|

Line Construction:

| | | |
|---|---|---|
| (1) Lineman | $ 42.14 | 32% + 5.00 |
| (2) Heavy Equipment Operator | $ 40.03 | 32% + 5.00 |
| (3) Equipment Operator | $ 33.71 | 32% + 5.00 |
| (4) Heavy Groundman Driver | $ 26.78 | 14.11 |
| (5) Light Groundman Driver | $ 24.86 | 13.45 |
| (6) Groundsman | $ 23.18 | 32% + 5.00 |

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ENGI0139-005 06/05/2017

| | Rates | Fringes |
|---|---|---|
| Power Equipment Operator | | |
| Group 1 | $ 39.27 | 22.05 |
| Group 2 | $ 38.77 | 22.05 |
| Group 3 | $ 38.27 | 22.05 |
| Group 4 | $ 38.01 | 22.05 |
| Group 5 | $ 37.72 | 22.05 |
| Group 6 | $ 31.82 | 22.05 |

HAZARDOUS WASTE PREMIUMS:
EPA Level "A" protection - $3.00 per hour
EPA Level "B" protection - $2.00 per hour
EPA Level "C" protection - $1.00 per hour

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, tower cranes, and derricks with or without attachments with a lifting capacity of over 100 tons; or cranes, tower cranes, and derricks with boom, leads and/or jib lengths measuring 176 feet or longer.

GROUP 2: Cranes, tower cranes and derricks with or without attachments with a lifting capacity of 100 tons or less; or cranes, tower cranes, and derricks with boom, leads, and/or jibs lengths measuring 175 feet or under and Backhoes (excavators) weighing 130,000 lbs and over; caisson rigs; pile driver; dredge operator; dredge engineer; Boat Pilot.

GROUP 3: Mechanic or welder - Heavy duty equipment; cranes with a lifting capacity of 25 tons or under; concrete breaker (manual or remote); vibratory/sonic concrete breaker; concrete laser screed; concrete slipform paver; concrete batch plant operator; concrete pvt. spreader - heavy duty (rubber tired); concrete spreader & distributor; automatic subgrader (concrete); concrete grinder & planing machine; concrete slipform curb & gutter machine; slipform concrete placer; tube finisher; hydro blaster (10,000 psi & over); bridge paver; concrete conveyor system; concrete pump; Rotec type Conveyor; stabilizing mixer (self-propelled); shoulder widener; asphalt plant engineer; bituminious paver; bump cutter & grooving machine; milling machine; screed (bituminous paver); asphalt heater, planer & scarifier; Backhoes (excavators) weighing under 130,000 lbs; grader or motor patrol; tractor (scraper, dozer, pusher, loader); scraper - rubber tired (single or twin engine); endloader; hydraulic backhoe (tractor type); trenching machine; skid rigs; tractor, side boom (heavy); drilling or boring machine (mechanical heavy); roller over 5 tons; percussion or rotary drilling machine; air track; blaster; loading machine (conveyor); tugger; boatmen; winches & A-frames; post driver; material hoist.

GROUP 4: Greaser, roller steel (5 tons or less); roller (pneumatic tired) - self propelled; tractor (mounted or towed compactors & light equipment); shouldering machine; self- propelled chip spreader; concrete spreader; finishing machine; mechanical float; curing machine; power subgrader; joint sawer (multiple blade) belting machine; burlap machine; texturing machine; tractor endloader (rubber tired) - light; jeep digger; forklift; mulcher; launch operator; fireman, environmental burner

GROUP 5: Air compressor; power pack; vibrator hammer and extractor; heavy equipment, leadman; tank car heaters; stump chipper; curb machine operator; Concrete proportioning plants; generators; mudjack operator; rock breaker; crusher or screening plant; screed (milling machine); automatic belt conveyor and surge bin; pug mill operator; Oiler, pump (over 3 inches); Drilling Machine

Tender.

GROUP 6: Off-road material hauler with or without ejector.

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IRON0008-002 06/01/2017

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:

| | Rates | Fringes |
|---|---|---|
| IRONWORKER | $ 31.24 | 26.97 |

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

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IRON0008-003 06/01/2017

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES

| | Rates | Fringes |
|---|---|---|
| IRONWORKER | $ 33.19 | 26.97 |

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

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IRON0383-001 06/01/2017

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 | $ 34.50 | 23.82 |

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IRON0498-005 06/01/2016

GREEN (S.E. 1/3), ROCK (South of Edgerton and Milton), and WALWORTH (S.W. 1/3) COUNTIES:

| | Rates | Fringes |
|---|---|---|
| IRONWORKER | $ 36.29 | 30.77 |

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IRON0512-008 05/01/2017

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES

| | Rates | Fringes |
|---|---|---|
| IRONWORKER | $ 36.50 | 26.45 |

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IRON0512-021 05/01/2017

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA, PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

| | Rates | Fringes |
|---|---|---|
| IRONWORKER | $ 32.04 | 26.45 |

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LABO0113-002 06/05/2017

MILWAUKEE AND WAUKESHA COUNTIES

| | Rates | Fringes |
|---|---|---|
| LABORER | | |
| Group 1 | $ 26.80 | 21.34 |
| Group 2 | $ 26.95 | 21.34 |
| Group 3 | $ 27.15 | 21.34 |
| Group 4 | $ 27.30 | 21.34 |
| Group 5 | $ 27.45 | 21.34 |
| Group 6 | $ 23.29 | 21.34 |

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagperson; traffic control person

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LABO0113-003 06/05/2017

OZAUKEE AND WASHINGTON COUNTIES

| | Rates | Fringes |
|---|---|---|
| LABORER | | |
| Group 1 | $ 26.05 | 21.34 |
| Group 2 | $ 26.15 | 21.34 |
| Group 3 | $ 26.20 | 21.34 |
| Group 4 | $ 26.40 | 21.34 |
| Group 5 | $ 26.25 | 21.34 |
| Group 6 | $ 23.14 | 21.34 |

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated);

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson and Traffic Control Person

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LABO0113-011 06/05/2017

KENOSHA AND RACINE COUNTIES

| | Rates | Fringes |
|---|---|---|

LABORER

| | | |
|---|---|---|
| Group 1 | $ 25.86 | 21.34 |
| Group 2 | $ 26.01 | 21.34 |
| Group 3 | $ 26.21 | 21.34 |
| Group 4 | $ 26.18 | 21.34 |
| Group 5 | $ 26.51 | 21.34 |
| Group 6 | $ 23.00 | 21.34 |

LABORERS CLASSIFICATIONS:

GROUP 1: General laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagman; traffic control person

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LABO0140-002 06/05/2017

ADAMS, ASHLAND, BARRON, BAYFIELD, BROWN, BUFFALO, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DOUGLAS, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IRON, JACKSON, JUNEAU, IOWA, JEFFERSON, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST. CROIX, TAYLOR, TREMPEALEAU, VERNON, VILLAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

| | Rates | Fringes |
|---|---|---|
| LABORER | | |
| Group 1 | $ 30.71 | 16.79 |
| Group 2 | $ 30.81 | 16.79 |
| Group 3 | $ 30.86 | 16.79 |
| Group 4 | $ 31.06 | 16.79 |
| Group 5 | $ 30.91 | 16.79 |
| Group 6 | $ 27.34 | 16.79 |

LABORER CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bitminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator, Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk and Pavement); Strike Off Man

GROUP 4: Line and Grade Secialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson; Traffic Control

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LABO0464-003 06/05/2017

DANE COUNTY

| | Rates | Fringes |
|---|---|---|
| LABORER | | |
| Group 1 | $ 30.99 | 16.79 |
| Group 2 | $ 31.09 | 16.79 |
| Group 3 | $ 31.14 | 16.79 |
| Group 4 | $ 31.34 | 16.79 |
| Group 5 | $ 31.19 | 16.79 |
| Group 6 | $ 27.34 | 16.79 |

LABORERS CLASSIFICATIONS:

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminious Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; Powderman

GROUP 6: Flagperson and Traffic Control Person

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* PAIN0106-008 05/01/2017

ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES

| | Rates | Fringes |
|---|---|---|
| Painters: | | |
| New: | | |
| Brush, Roller | $ 30.33 | 17.27 |
| Spray, Sandblast, Steel | $ 30.93 | 17.27 |
| Repaint: | | |
| Brush, Roller | $ 28.83 | 17.27 |
| Spray, Sandblast, Steel | $ 29.43 | 17.27 |

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PAIN0108-002 06/01/2017

RACINE COUNTY

| | Rates | Fringes |
|---|---|---|
| Painters: | | |
| Brush, Roller | $ 33.74 | 18.95 |
| Spray & Sandblast | $ 34.74 | 18.95 |

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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 |

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PAIN0259-004 05/01/2015

BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES

| | Rates | Fringes |
|---|---|---|

PAINTER.....$ 22.03 12.45

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PAIN0781-002 06/01/2017

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

| | Rates | Fringes |
|---|---|---|
| Painters: | | |
| Bridge | $ 30.60 | 22.80 |
| Brush | $ 30.25 | 22.80 |
| Spray & Sandblast | $ 31.00 | 22.80 |

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PAIN0802-002 06/01/2017

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND, ROCK, AND SAUK COUNTIES

| | Rates | Fringes |
|---|---|---|
| PAINTER | | |
| Brush | $ 28.25 | 17.72 |

PREMIUM PAY:
Structural Steel, Spray, Bridges = $1.00 additional per hour.

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PAIN0802-003 06/01/2017

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 | $ 24.89 | 12.05 |

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PAIN0934-001 06/01/2017

KENOSHA AND WALWORTH COUNTIES

| | Rates | Fringes |
|---|---|---|
| Painters: | | |
| Brush | $ 33.74 | 18.95 |
| Spray | $ 34.74 | 18.95 |
| Structural Steel | $ 33.89 | 18.95 |

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PAIN1011-002 06/01/2017

FLORENCE COUNTY

| | Rates | Fringes |
|---|---|---|
| Painters: | $ 24.86 | 12.23 |

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PLAS0599-010 06/01/2017

| | Rates | Fringes |
|---|---|---|
| CEMENT MASON/CONCRETE FINISHER | | |
| Area 1 | $ 39.46 | 17.17 |
| Area 2 (BAC) | $ 35.07 | 19.75 |
| Area 3 | $ 35.61 | 19.40 |
| Area 4 | $ 34.70 | 20.51 |
| Area 5 | $ 36.27 | 18.73 |
| Area 6 | $ 32.02 | 22.99 |

AREA DESCRIPTIONS

AREA 1: BAYFIELD, DOUGLAS, PRICE, SAWYER, AND WASHBURN COUNTIES

AREA 2: ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE,

FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

AREA 3: BUFFALO, CRAWFORD, EAU CLAIRE, JACKSON, JUNEAU, LA CROSSE MONROE, PEPIN, PIERCE, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES

AREA 4: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA 5: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA 6: KENOSHA AND RACINE COUNTIES

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TEAM0039-001 06/01/2017

| | Rates | Fringes |
|---|---|---|
| TRUCK DRIVER | | |
| 1 & 2 Axles | $ 27.40 | 20.48 |
| 3 or more Axles; Euclids Dumptor & Articulated, Truck Mechanic | $ 27.55 | 20.48 |
| WELL DRILLER | $ 16.52 | 3.70 |

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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 www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of

the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.

Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

**March 2017**

# 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.

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0002 | 108.3100.S<br>Incentive/Disincentive for Interim Completion of Work | 1.000<br>CD | 25,000.00000 | 25,000.00 |
| 0004 | 201.0105<br>Clearing | 3.000<br>STA | _____._____ | _____._____ |
| 0006 | 201.0120<br>Clearing | 6.000<br>ID | _____._____ | _____._____ |
| 0008 | 201.0205<br>Grubbing | 3.000<br>STA | _____._____ | _____._____ |
| 0010 | 201.0220<br>Grubbing | 6.000<br>ID | _____._____ | _____._____ |
| 0012 | 203.0100<br>Removing Small Pipe Culverts | 10.000<br>EACH | _____._____ | _____._____ |
| 0014 | 203.0200<br>Removing Old Structure (station) 001. 1130+68.00 | LS | LUMP SUM | _____._____ |
| 0016 | 203.0200<br>Removing Old Structure (station) 002. 1003+00, 15' LT | LS | LUMP SUM | _____._____ |
| 0018 | 203.0200<br>Removing Old Structure (station) 003. 1003+00 15' RT | LS | LUMP SUM | _____._____ |
| 0020 | 203.0200<br>Removing Old Structure (station) 006. 923+00.00 LT | LS | LUMP SUM | _____._____ |
| 0022 | 203.0200<br>Removing Old Structure (station) 007. 923+00.00 RT | LS | LUMP SUM | _____._____ |
| 0024 | 203.0200<br>Removing Old Structure (station) 045. 1104+26.00 | LS | LUMP SUM | _____._____ |
| 0026 | 203.0200<br>Removing Old Structure (station) 051. 1055+75 | LS | LUMP SUM | _____._____ |
| 0028 | 203.0200<br>Removing Old Structure (station) 052. 1055+75 | LS | LUMP SUM | _____._____ |

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0030 | 203.0210.S<br>Abatement of Asbestos Containing Material (structure) 001. B-51-27 | LS | LUMP SUM | _____.____ |
| 0032 | 203.0210.S<br>Abatement of Asbestos Containing Material (structure) 002. B-51-28 | LS | LUMP SUM | _____.____ |
| 0034 | 203.0210.S<br>Abatement of Asbestos Containing Material (structure) 003. B-51-29 | LS | LUMP SUM | _____.____ |
| 0036 | 203.0210.S<br>Abatement of Asbestos Containing Material (structure) 004. B-51-30 | LS | LUMP SUM | _____.____ |
| 0038 | 203.0210.S<br>Abatement of Asbestos Containing Material (structure) 009. B-51-25 | LS | LUMP SUM | _____.____ |
| 0040 | 203.0210.S<br>Abatement of Asbestos Containing Material (structure) 010. B-51-26 | LS | LUMP SUM | _____.____ |
| 0042 | 204.0100<br>Removing Pavement **P** | 252,117.000<br>SY | _____.____ | _____.____ |
| 0044 | 204.0115<br>Removing Asphaltic Surface Butt Joints | 1,520.000<br>SY | _____.____ | _____.____ |
| 0046 | 204.0120<br>Removing Asphaltic Surface Milling **P** | 44,223.000<br>SY | _____.____ | _____.____ |
| 0048 | 204.0150<br>Removing Curb & Gutter **P** | 1,095.000<br>LF | _____.____ | _____.____ |
| 0050 | 204.0157<br>Removing Concrete Barrier **P** | 27,669.000<br>LF | _____.____ | _____.____ |
| 0052 | 204.0170<br>Removing Fence **P** | 44,536.000<br>LF | _____.____ | _____.____ |
| 0054 | 204.0180<br>Removing Delineators and Markers | 164.000<br>EACH | _____.____ | _____.____ |
| 0056 | 204.0195<br>Removing Concrete Bases | 3.000<br>EACH | _____.____ | _____.____ |
| 0058 | 204.0210<br>Removing Manholes | 3.000<br>EACH | _____.____ | _____.____ |

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0060 | 204.0220<br>Removing Inlets | 245.000<br>EACH | _____.____ | _____.____ |
| 0062 | 204.0245<br>Removing Storm Sewer (size) 002. 6-Inch | 4,698.000<br>LF | _____.____ | _____.____ |
| 0064 | 204.0245<br>Removing Storm Sewer (size) 004. 12-Inch | 3,369.000<br>LF | _____.____ | _____.____ |
| 0066 | 204.0245<br>Removing Storm Sewer (size) 006. 15-Inch | 3,716.000<br>LF | _____.____ | _____.____ |
| 0068 | 204.0245<br>Removing Storm Sewer (size) 008. 18-Inch | 1,609.000<br>LF | _____.____ | _____.____ |
| 0070 | 204.0245<br>Removing Storm Sewer (size) 010. 24-Inch | 695.000<br>LF | _____.____ | _____.____ |
| 0072 | 204.0245<br>Removing Storm Sewer (size) 011. 19 X 30-Inch | 72.000<br>LF | _____.____ | _____.____ |
| 0074 | 204.0245<br>Removing Storm Sewer (size) 012. 30-Inch | 375.000<br>LF | _____.____ | _____.____ |
| 0076 | 204.0245<br>Removing Storm Sewer (size) 018. 48-Inch | 890.000<br>LF | _____.____ | _____.____ |
| 0078 | 204.0245<br>Removing Storm Sewer (size) 019. 54-Inch | 300.000<br>LF | _____.____ | _____.____ |
| 0080 | 204.0245<br>Removing Storm Sewer (size) 020. 42-Inch | 554.000<br>LF | _____.____ | _____.____ |
| 0082 | 204.0245<br>Removing Storm Sewer (size) 022. 29 X 45-Inch | 28.000<br>LF | _____.____ | _____.____ |
| 0084 | 204.0245<br>Removing Storm Sewer (size) 023. 34 X 53-Inch | 30.000<br>LF | _____.____ | _____.____ |

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0086 | 204.0250<br>Abandoning Manholes | 1.000<br>EACH | _____.____ | _____.____ |
| 0088 | 204.0260<br>Abandoning Inlets | 20.000<br>EACH | _____.____ | _____.____ |
| 0090 | 204.0280<br>Sealing Pipes | 58.000<br>EACH | _____.____ | _____.____ |
| 0092 | 204.0291.S<br>Abandoning Sewer | 390.700<br>CY | _____.____ | _____.____ |
| 0094 | 204.9060.S<br>Removing (item description) 003. Slotted Vane Drain | 16.000<br>EACH | _____.____ | _____.____ |
| 0096 | 204.9060.S<br>Removing (item description) 006. Traffic Control Barricades Permanent Type III | 6.000<br>EACH | _____.____ | _____.____ |
| 0098 | 204.9060.S<br>Removing (item description) 100. Luminaires | 8.000<br>EACH | _____.____ | _____.____ |
| 0100 | 204.9060.S<br>Removing (item description) 101. Lighting Units | 7.000<br>EACH | _____.____ | _____.____ |
| 0102 | 204.9060.S<br>Removing (item description) 201. Controller Cabinet | 1.000<br>EACH | _____.____ | _____.____ |
| 0104 | 204.9060.S<br>Removing (item description) 202. Controller Cabinet Base | 1.000<br>EACH | _____.____ | _____.____ |
| 0106 | 204.9060.S<br>Removing (item description) 203. On-Ramp Closure Gate | 2.000<br>EACH | _____.____ | _____.____ |
| 0108 | 204.9060.S<br>Removing (item description) 204. Electrical Service Meter Breaker Pedestal | 1.000<br>EACH | _____.____ | _____.____ |
| 0110 | 204.9060.S<br>Removing (item description) 205. Temporary Vehicle Detector Assembly | 2.000<br>EACH | _____.____ | _____.____ |

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0112 | 204.9060.S<br>Removing (item description) 207. Temporary Traffic Camera Assembly | 1.000<br>EACH | _____._____ | _____._____ |
| 0114 | 204.9060.S<br>Removing (item description) 209. Concrete Apron Endwalls | 1.000<br>EACH | _____._____ | _____._____ |
| 0116 | 204.9090.S<br>Removing (item description) 001. Underdrain | 38,542.000<br>LF | _____._____ | _____._____ |
| 0118 | 204.9090.S<br>Removing (item description) 002. Draintile | 882.000<br>LF | _____._____ | _____._____ |
| 0120 | 204.9090.S<br>Removing (item description) 003. Concrete Barrier Temporary | 49,880.000<br>LF | _____._____ | _____._____ |
| 0122 | 204.9165.S<br>Removing (item description) 002. Shoring | 1,000.000<br>SF | _____._____ | _____._____ |
| 0124 | 205.0100<br>Excavation Common **P** | 263,619.000<br>CY | _____._____ | _____._____ |
| 0126 | 205.0501.S<br>Excavation, Hauling, and Disposal of Petroleum Contaminated Soil | 1,400.000<br>TON | _____._____ | _____._____ |
| 0128 | 205.3000.S<br>Temporary Emergency Pullouts | 8.000<br>EACH | _____._____ | _____._____ |
| 0130 | 206.1000<br>Excavation for Structures Bridges (structure) 001. B-51-134 | LS | LUMP SUM | _____._____ |
| 0132 | 206.1000<br>Excavation for Structures Bridges (structure) 002. B-51-135 | LS | LUMP SUM | _____._____ |
| 0134 | 206.1000<br>Excavation for Structures Bridges (structure) 003. B-51-136 | LS | LUMP SUM | _____._____ |
| 0136 | 206.1000<br>Excavation for Structures Bridges (structure) 004. B-51-137 | LS | LUMP SUM | _____._____ |

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0138 | 206.1000<br>Excavation for Structures Bridges (structure) 015. B-51-132 | LS | LUMP SUM | _____.____ |
| 0140 | 206.1000<br>Excavation for Structures Bridges (structure) 016. B-51-133 | LS | LUMP SUM | _____.____ |
| 0142 | 209.0200.S<br>Backfill Controlled Low Strength | 240.000<br>CY | _____.____ | _____.____ |
| 0144 | 209.2500<br>Backfill Granular Grade 2 | 1,450.000<br>TON | _____.____ | _____.____ |
| 0146 | 210.1500<br>Backfill Structure Type A **P** | 3,363.000<br>TON | _____.____ | _____.____ |
| 0148 | 210.2100<br>Backfill Structure Type B | 50.000<br>CY | _____.____ | _____.____ |
| 0150 | 213.0100<br>Finishing Roadway (project) 004. 1030-11-72 | 1.000<br>EACH | _____.____ | _____.____ |
| 0152 | 213.0100<br>Finishing Roadway (project) 006. 1030-11-79 | 1.000<br>EACH | _____.____ | _____.____ |
| 0154 | 213.0100<br>Finishing Roadway (project) 008. 1030-25-79 | 1.000<br>EACH | _____.____ | _____.____ |
| 0156 | 213.0100<br>Finishing Roadway (project) 010. 1030-11-80 | 1.000<br>EACH | _____.____ | _____.____ |
| 0158 | 305.0115<br>Base Aggregate Dense 3/4-Inch **P** | 4,394.000<br>CY | _____.____ | _____.____ |
| 0160 | 305.0125<br>Base Aggregate Dense 1 1/4-Inch **P** | 116,291.000<br>CY | _____.____ | _____.____ |
| 0162 | 311.0110<br>Breaker Run | 3,700.000<br>TON | _____.____ | _____.____ |
| 0164 | 312.0115<br>Select Crushed Material **P** | 172,253.000<br>CY | _____.____ | _____.____ |
| 0166 | 335.0100<br>Rubblizing **P** | 33,600.000<br>SY | _____.____ | _____.____ |

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0168 | 390.0203<br>Base Patching Asphaltic | 3,345.000<br>SY | _____.____ | _____.____ |
| 0170 | 415.0090<br>Concrete Pavement 9-Inch **P** | 78.000<br>SY | _____.____ | _____.____ |
| 0172 | 415.0095<br>Concrete Pavement 9 1/2-Inch **P** | 16,380.000<br>SY | _____.____ | _____.____ |
| 0174 | 415.0105<br>Concrete Pavement 10 1/2-Inch **P** | 9,300.000<br>SY | _____.____ | _____.____ |
| 0176 | 415.0110<br>Concrete Pavement 11-Inch **P** | 1,280.000<br>SY | _____.____ | _____.____ |
| 0178 | 415.0410<br>Concrete Pavement Approach Slab **P** | 1,393.000<br>SY | _____.____ | _____.____ |
| 0180 | 415.5110.S<br>Concrete Pavement Joint Layout 002. 1030-11-72 | 1.000<br>LS | _____.____ | _____.____ |
| 0182 | 415.5110.S<br>Concrete Pavement Joint Layout 004. 1030-11-79 | 1.000<br>LS | _____.____ | _____.____ |
| 0184 | 415.5110.S<br>Concrete Pavement Joint Layout 006. 1030-11-80 | 1.000<br>LS | _____.____ | _____.____ |
| 0186 | 415.5110.S<br>Concrete Pavement Joint Layout 008. 1030-25-79 | 1.000<br>LS | _____.____ | _____.____ |
| 0188 | 416.0610<br>Drilled Tie Bars | 1,130.000<br>EACH | _____.____ | _____.____ |
| 0190 | 416.0620<br>Drilled Dowel Bars | 474.000<br>EACH | _____.____ | _____.____ |
| 0192 | 416.1010<br>Concrete Surface Drains | 38.000<br>CY | _____.____ | _____.____ |
| 0194 | 416.1110<br>Concrete Shoulder Rumble Strips **P** | 89,288.000<br>LF | _____.____ | _____.____ |
| 0196 | 440.4410<br>Incentive IRI Ride | 139,890.000<br>DOL | 1.00000 | 139,890.00 |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0198 | 450.1100.S<br>Asphaltic Mixture For Extreme Conditions | 500.000<br>TON | _____.____ | _____.____ |
| 0200 | 450.4000<br>HMA Cold Weather Paving | 1,604.000<br>TON | _____.____ | _____.____ |
| 0202 | 455.0605<br>Tack Coat | 6,850.000<br>GAL | _____.____ | _____.____ |
| 0204 | 460.2000<br>Incentive Density HMA Pavement | 790.000<br>DOL | 1.00000 | 790.00 |
| 0206 | 460.5223<br>HMA Pavement 3 LT 58-28 S | 601.000<br>TON | _____.____ | _____.____ |
| 0208 | 460.5224<br>HMA Pavement 4 LT 58-28 S | 423.000<br>TON | _____.____ | _____.____ |
| 0210 | 460.6223<br>HMA Pavement 3 MT 58-28 S | 530.000<br>TON | _____.____ | _____.____ |
| 0212 | 460.6224<br>HMA Pavement 4 MT 58-28 S | 20.000<br>TON | _____.____ | _____.____ |
| 0214 | 465.0125<br>Asphaltic Surface Temporary | 15,024.000<br>TON | _____.____ | _____.____ |
| 0216 | 465.0310<br>Asphaltic Curb | 135.000<br>LF | _____.____ | _____.____ |
| 0218 | 495.1000.S<br>Cold patch | 160.000<br>TON | _____.____ | _____.____ |
| 0220 | 501.1000.S<br>Ice Hot Weather Concreting | 62,847.000<br>LB | _____.____ | _____.____ |
| 0222 | 502.0100<br>Concrete Masonry Bridges **P** | 1,297.000<br>CY | _____.____ | _____.____ |
| 0224 | 502.3200<br>Protective Surface Treatment **P** | 10,401.000<br>SY | _____.____ | _____.____ |
| 0226 | 502.3210<br>Pigmented Surface Sealer | 4,712.000<br>SY | _____.____ | _____.____ |
| 0228 | 503.0146<br>Prestressed Girder Type I 45W-Inch **P** | 8,880.000<br>LF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0230 | 504.0500<br>Concrete Masonry Retaining Walls **P** | 4,121.000<br>CY | _____.____ | _____.____ |
| 0232 | 505.0400<br>Bar Steel Reinforcement HS Structures | 3,920.000<br>LB | _____.____ | _____.____ |
| 0234 | 505.0600<br>Bar Steel Reinforcement HS Coated Structures | 1,187,080.000<br>LB | _____.____ | _____.____ |
| 0236 | 505.0800.S<br>Bar Steel Reinforcement HS Stainless Structures | 15,520.000<br>LB | _____.____ | _____.____ |
| 0238 | 506.2605<br>Bearing Pads Elastomeric Non-Laminated **P** | 168.000<br>EACH | _____.____ | _____.____ |
| 0240 | 506.4000<br>Steel Diaphragms (structure) 006. B-51-134 **P** | 24.000<br>EACH | _____.____ | _____.____ |
| 0242 | 506.4000<br>Steel Diaphragms (structure) 008. B-51-135 **P** | 24.000<br>EACH | _____.____ | _____.____ |
| 0244 | 506.4000<br>Steel Diaphragms (structure) 009. B-51-136 **P** | 28.000<br>EACH | _____.____ | _____.____ |
| 0246 | 506.4000<br>Steel Diaphragms (structure) 010. B-51-137 **P** | 28.000<br>EACH | _____.____ | _____.____ |
| 0248 | 506.4000<br>Steel Diaphragms (structure) 030. B-51-132 **P** | 24.000<br>EACH | _____.____ | _____.____ |
| 0250 | 506.4000<br>Steel Diaphragms (structure) 032. B-51-133 **P** | 24.000<br>EACH | _____.____ | _____.____ |
| 0252 | 511.1100<br>Temporary Shoring | 21,330.000<br>SF | _____.____ | _____.____ |
| 0254 | 511.1200<br>Temporary Shoring (structure) 009. B-51-135 | 1,100.000<br>SF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0256 | 511.1200<br>Temporary Shoring (structure) 010. B-51-136 | 138.000<br>SF | _____.____ | _____.____ |
| 0258 | 511.1200<br>Temporary Shoring (structure) 011. B-51-137 | 3,498.000<br>SF | _____.____ | _____.____ |
| 0260 | 511.1200<br>Temporary Shoring (structure) 012. B-51-133 | 280.000<br>SF | _____.____ | _____.____ |
| 0262 | 513.4091<br>Railing Tubular Screening (structure) 402. R-51-55 | 27.000<br>LF | _____.____ | _____.____ |
| 0264 | 513.4091<br>Railing Tubular Screening (structure) 403. R-51-56 | 43.000<br>LF | _____.____ | _____.____ |
| 0266 | 516.0500<br>Rubberized Membrane Waterproofing **P** | 778.000<br>SY | _____.____ | _____.____ |
| 0268 | 517.1010.S<br>Concrete Staining (structure) 405. B-51-134 **P** | 2,400.000<br>SF | _____.____ | _____.____ |
| 0270 | 517.1010.S<br>Concrete Staining (structure) 406. B-51-135 **P** | 2,486.000<br>SF | _____.____ | _____.____ |
| 0272 | 517.1010.S<br>Concrete Staining (structure) 407. B-51-136 **P** | 4,906.000<br>SF | _____.____ | _____.____ |
| 0274 | 517.1010.S<br>Concrete Staining (structure) 408. B-51-137 **P** | 4,931.000<br>SF | _____.____ | _____.____ |
| 0276 | 517.1010.S<br>Concrete Staining (structure) 419. B-51-132 **P** | 2,370.000<br>SF | _____.____ | _____.____ |
| 0278 | 517.1010.S<br>Concrete Staining (structure) 420. B-51-133 **P** | 2,370.000<br>SF | _____.____ | _____.____ |
| 0280 | 517.1010.S<br>Concrete Staining (structure) 430. R-51-57 **P** | 18,370.000<br>SF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0282 | 517.1010.S<br>Concrete Staining (structure) 431. R-51-58 **P** | 4,960.000<br>SF | _____.____ | _____.____ |
| 0284 | 517.1010.S<br>Concrete Staining (structure) 440. R-51-53 **P** | 15,920.000<br>SF | _____.____ | _____.____ |
| 0286 | 517.1010.S<br>Concrete Staining (structure) 441. R-51-54 **P** | 12,610.000<br>SF | _____.____ | _____.____ |
| 0288 | 517.1010.S<br>Concrete Staining (structure) 442. R-51-55 **P** | 25,679.000<br>SF | _____.____ | _____.____ |
| 0290 | 517.1010.S<br>Concrete Staining (structure) 443. R-51-56 **P** | 16,502.000<br>SF | _____.____ | _____.____ |
| 0292 | 517.1010.S<br>Concrete Staining (structure) 449. S-51-222 **P** | 180.000<br>SF | _____.____ | _____.____ |
| 0294 | 517.1010.S<br>Concrete Staining (structure) 450. S-51-223 **P** | 180.000<br>SF | _____.____ | _____.____ |
| 0296 | 517.1050.S<br>Architectural Surface Treatment (structure) 406. B-51-135 **P** | 32.000<br>SF | _____.____ | _____.____ |
| 0298 | 517.1050.S<br>Architectural Surface Treatment (structure) 407. B-51-136 **P** | 32.000<br>SF | _____.____ | _____.____ |
| 0300 | 517.1050.S<br>Architectural Surface Treatment (structure) 408. B-51-137 **P** | 32.000<br>SF | _____.____ | _____.____ |
| 0302 | 517.1050.S<br>Architectural Surface Treatment (structure) 430. R-51-57 **P** | 1,700.000<br>SF | _____.____ | _____.____ |
| 0304 | 517.1050.S<br>Architectural Surface Treatment (structure) 440. R-51-53 **P** | 1,100.000<br>SF | _____.____ | _____.____ |
| 0306 | 517.1050.S<br>Architectural Surface Treatment (structure) 441. R-51-54 **P** | 900.000<br>SF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0308 | 517.1050.S<br>Architectural Surface Treatment (structure) 442. R-51-55 **P** | 1,200.000<br>SF | _____.____ | _____.____ |
| 0310 | 517.1050.S<br>Architectural Surface Treatment (structure) 443. R-51-56 **P** | 900.000<br>SF | _____.____ | _____.____ |
| 0312 | 520.8000<br>Concrete Collars for Pipe | 4.000<br>EACH | _____.____ | _____.____ |
| 0314 | 520.8700<br>Cleaning Culvert Pipes | 4.000<br>EACH | _____.____ | _____.____ |
| 0316 | 521.1012<br>Apron Endwalls for Culvert Pipe Steel 12-Inch | 2.000<br>EACH | _____.____ | _____.____ |
| 0318 | 522.1012<br>Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch | 2.000<br>EACH | _____.____ | _____.____ |
| 0320 | 522.1015<br>Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch | 1.000<br>EACH | _____.____ | _____.____ |
| 0322 | 522.1024<br>Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch | 30.000<br>EACH | _____.____ | _____.____ |
| 0324 | 522.1030<br>Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch | 5.000<br>EACH | _____.____ | _____.____ |
| 0326 | 522.1036<br>Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch | 3.000<br>EACH | _____.____ | _____.____ |
| 0328 | 522.2619<br>Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch | 4.000<br>EACH | _____.____ | _____.____ |
| 0330 | 524.0624<br>Apron Endwalls for Culvert Pipe Salvaged 24-Inch | 3.000<br>EACH | _____.____ | _____.____ |
| 0332 | 550.0500<br>Pile Points **P** | 98.000<br>EACH | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

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| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0334 | 550.0600<br>Pile Redriving | 36.000<br>EACH | _____.____ | _____.____ |
| 0336 | 550.2126<br>Piling CIP Concrete 12 3/4 X 0.375-Inch | 19,810.000<br>LF | _____.____ | _____.____ |
| 0338 | 601.0409<br>Concrete Curb & Gutter 30-Inch Type A **P** | 3,845.000<br>LF | _____.____ | _____.____ |
| 0340 | 601.0553<br>Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D **P** | 1,313.000<br>LF | _____.____ | _____.____ |
| 0342 | 601.0555<br>Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type A **P** | 860.000<br>LF | _____.____ | _____.____ |
| 0344 | 602.0410<br>Concrete Sidewalk 5-Inch **P** | 3,475.000<br>SF | _____.____ | _____.____ |
| 0346 | 602.2400<br>Concrete Safety Islands **P** | 4,105.000<br>SF | _____.____ | _____.____ |
| 0348 | 603.1142<br>Concrete Barrier Type S42 **P** | 74,801.000<br>LF | _____.____ | _____.____ |
| 0350 | 603.1156<br>Concrete Barrier Type S56 **P** | 256.000<br>LF | _____.____ | _____.____ |
| 0352 | 603.1442<br>Concrete Barrier Type S42C **P** | 1,600.000<br>LF | _____.____ | _____.____ |
| 0354 | 603.1456<br>Concrete Barrier Type S56C **P** | 75.000<br>LF | _____.____ | _____.____ |
| 0356 | 603.2156<br>Concrete Barrier Fixed Object Protection Type S56 **P** | 44.000<br>LF | _____.____ | _____.____ |
| 0358 | 603.3559<br>Concrete Barrier Transition Type S42 to S56 | 13.000<br>EACH | _____.____ | _____.____ |
| 0360 | 603.8000<br>Concrete Barrier Temporary Precast Delivered | 43,797.000<br>LF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0362 | 603.8125<br>Concrete Barrier Temporary Precast Installed | 144,526.000<br>LF | _____.____ | _____.____ |
| 0364 | 606.0100<br>Riprap Light | 240.000<br>CY | _____.____ | _____.____ |
| 0366 | 606.0200<br>Riprap Medium | 980.000<br>CY | _____.____ | _____.____ |
| 0368 | 606.0300<br>Riprap Heavy | 27.000<br>CY | _____.____ | _____.____ |
| 0370 | 608.0312<br>Storm Sewer Pipe Reinforced Concrete Class III 12-Inch | 867.000<br>LF | _____.____ | _____.____ |
| 0372 | 608.0315<br>Storm Sewer Pipe Reinforced Concrete Class III 15-Inch | 47.000<br>LF | _____.____ | _____.____ |
| 0374 | 608.0318<br>Storm Sewer Pipe Reinforced Concrete Class III 18-Inch | 387.000<br>LF | _____.____ | _____.____ |
| 0376 | 608.0324<br>Storm Sewer Pipe Reinforced Concrete Class III 24-Inch | 2,396.000<br>LF | _____.____ | _____.____ |
| 0378 | 608.0330<br>Storm Sewer Pipe Reinforced Concrete Class III 30-Inch | 759.000<br>LF | _____.____ | _____.____ |
| 0380 | 608.0336<br>Storm Sewer Pipe Reinforced Concrete Class III 36-Inch | 160.000<br>LF | _____.____ | _____.____ |
| 0382 | 608.0342<br>Storm Sewer Pipe Reinforced Concrete Class III 42-Inch | 179.000<br>LF | _____.____ | _____.____ |
| 0384 | 608.0412<br>Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch | 1,419.000<br>LF | _____.____ | _____.____ |
| 0386 | 608.0415<br>Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch | 1,230.000<br>LF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0388 | 608.0418<br>Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch | 821.000<br>LF | _____.____ | _____.____ |
| 0390 | 608.0424<br>Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch | 12,931.000<br>LF | _____.____ | _____.____ |
| 0392 | 608.0430<br>Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch | 1,733.000<br>LF | _____.____ | _____.____ |
| 0394 | 608.0436<br>Storm Sewer Pipe Reinforced Concrete Class IV 36-Inch | 1,052.000<br>LF | _____.____ | _____.____ |
| 0396 | 608.0442<br>Storm Sewer Pipe Reinforced Concrete Class IV 42-Inch | 3,405.000<br>LF | _____.____ | _____.____ |
| 0398 | 608.0448<br>Storm Sewer Pipe Reinforced Concrete Class IV 48-Inch | 162.000<br>LF | _____.____ | _____.____ |
| 0400 | 608.0512<br>Storm Sewer Pipe Reinforced Concrete Class V 12-Inch | 1,200.000<br>LF | _____.____ | _____.____ |
| 0402 | 608.2319<br>Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 19x30-Inch | 378.000<br>LF | _____.____ | _____.____ |
| 0404 | 608.2329<br>Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 29x45-Inch | 1,410.000<br>LF | _____.____ | _____.____ |
| 0406 | 608.2334<br>Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 34x53-Inch | 799.000<br>LF | _____.____ | _____.____ |
| 0408 | 608.2338<br>Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 38x60-Inch | 303.000<br>LF | _____.____ | _____.____ |
| 0410 | 608.2414<br>Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 14x23-Inch | 86.000<br>LF | _____.____ | _____.____ |

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SECTION: 0001 Contract Items

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| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0412 | 608.2419<br>Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch | 1,293.000<br>LF | _____.____ | _____.____ |
| 0414 | 608.2434<br>Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 34x53-Inch | 11.000<br>LF | _____.____ | _____.____ |
| 0416 | 611.0420<br>Reconstructing Manholes | 35.000<br>EACH | _____.____ | _____.____ |
| 0418 | 611.0430<br>Reconstructing Inlets | 6.000<br>EACH | _____.____ | _____.____ |
| 0420 | 611.0535<br>Manhole Covers Type J-Special | 38.000<br>EACH | _____.____ | _____.____ |
| 0422 | 611.0606<br>Inlet Covers Type B | 10.000<br>EACH | _____.____ | _____.____ |
| 0424 | 611.0610<br>Inlet Covers Type BW | 335.000<br>EACH | _____.____ | _____.____ |
| 0426 | 611.0624<br>Inlet Covers Type H | 32.000<br>EACH | _____.____ | _____.____ |
| 0428 | 611.0627<br>Inlet Covers Type HM | 11.000<br>EACH | _____.____ | _____.____ |
| 0430 | 611.0642<br>Inlet Covers Type MS | 53.000<br>EACH | _____.____ | _____.____ |
| 0432 | 611.0651<br>Inlet Covers Type S | 60.000<br>EACH | _____.____ | _____.____ |
| 0434 | 611.0654<br>Inlet Covers Type V | 4.000<br>EACH | _____.____ | _____.____ |
| 0436 | 611.2004<br>Manholes 4-FT Diameter | 13.000<br>EACH | _____.____ | _____.____ |
| 0438 | 611.2005<br>Manholes 5-FT Diameter | 98.000<br>EACH | _____.____ | _____.____ |
| 0440 | 611.2006<br>Manholes 6-FT Diameter | 34.000<br>EACH | _____.____ | _____.____ |

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0442 | 611.2008<br>Manholes 8-FT Diameter | 16.000<br>EACH | _____.____ | _____.____ |
| 0444 | 611.3003<br>Inlets 3-FT Diameter | 61.000<br>EACH | _____.____ | _____.____ |
| 0446 | 611.3004<br>Inlets 4-FT Diameter | 223.000<br>EACH | _____.____ | _____.____ |
| 0448 | 611.3220<br>Inlets 2x2-FT | 2.000<br>EACH | _____.____ | _____.____ |
| 0450 | 611.3225<br>Inlets 2x2.5-FT | 7.000<br>EACH | _____.____ | _____.____ |
| 0452 | 611.3230<br>Inlets 2x3-FT | 18.000<br>EACH | _____.____ | _____.____ |
| 0454 | 611.3901<br>Inlets Median 1 Grate | 16.000<br>EACH | _____.____ | _____.____ |
| 0456 | 611.3902<br>Inlets Median 2 Grate | 10.000<br>EACH | _____.____ | _____.____ |
| 0458 | 611.3903<br>Inlets Median 3 Grate | 4.000<br>EACH | _____.____ | _____.____ |
| 0460 | 611.3904<br>Inlets Median 4 Grate | 2.000<br>EACH | _____.____ | _____.____ |
| 0462 | 611.8110<br>Adjusting Manhole Covers | 1.000<br>EACH | _____.____ | _____.____ |
| 0464 | 611.8115<br>Adjusting Inlet Covers | 7.000<br>EACH | _____.____ | _____.____ |
| 0466 | 611.8120.S<br>Cover Plates Temporary | 14.000<br>EACH | _____.____ | _____.____ |
| 0468 | 611.9710<br>Salvaged Inlet Covers | 5.000<br>EACH | _____.____ | _____.____ |
| 0470 | 612.0106<br>Pipe Underdrain 6-Inch | 53,424.000<br>LF | _____.____ | _____.____ |
| 0472 | 612.0206<br>Pipe Underdrain Unperforated 6-Inch | 1,142.000<br>LF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0474 | 612.0406<br>Pipe Underdrain Wrapped 6-Inch | 8,248.000<br>LF | _____.____ | _____.____ |
| 0476 | 612.0700<br>Drain Tile Exploration | 2,450.000<br>LF | _____.____ | _____.____ |
| 0478 | 612.0806<br>Apron Endwalls for Underdrain Reinforced Concrete 6-Inch | 25.000<br>EACH | _____.____ | _____.____ |
| 0480 | 614.0010<br>Barrier System Grading Shaping Finishing | 8.000<br>EACH | _____.____ | _____.____ |
| 0482 | 614.0150<br>Anchor Assemblies for Steel Plate Beam Guard | 2.000<br>EACH | _____.____ | _____.____ |
| 0484 | 614.0396<br>Guardrail Mow Strip Asphalt | 443.000<br>SY | _____.____ | _____.____ |
| 0486 | 614.0805<br>Crash Cushions Permanent Low Maintenance | 3.000<br>EACH | _____.____ | _____.____ |
| 0488 | 614.0905<br>Crash Cushions Temporary | 35.000<br>EACH | _____.____ | _____.____ |
| 0490 | 614.0920<br>Salvaged Rail **P** | 524.000<br>LF | _____.____ | _____.____ |
| 0492 | 614.0925<br>Salvaged Guardrail End Treatments | 6.000<br>EACH | _____.____ | _____.____ |
| 0494 | 614.0930<br>Salvaged Crash Cushions | 6.000<br>EACH | _____.____ | _____.____ |
| 0496 | 614.2300<br>MGS Guardrail 3 | 439.000<br>LF | _____.____ | _____.____ |
| 0498 | 614.2500<br>MGS Thrie Beam Transition | 280.000<br>LF | _____.____ | _____.____ |
| 0500 | 614.2610<br>MGS Guardrail Terminal EAT | 10.000<br>EACH | _____.____ | _____.____ |
| 0502 | 614.2620<br>MGS Guardrail Terminal Type 2 | 3.000<br>EACH | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0504 | 616.0100<br>Fence Woven Wire (height) 001. 4-FT | 42,572.000<br>LF | _____.____ | _____.____ |
| 0506 | 616.0700.S<br>Fence Safety | 7,352.000<br>LF | _____.____ | _____.____ |
| 0508 | 618.0100<br>Maintenance And Repair of Haul Roads (project) 004. 1030-11-80 | 1.000<br>EACH | _____.____ | _____.____ |
| 0510 | 618.0100<br>Maintenance And Repair of Haul Roads (project) 005. 1030-11-79 | 1.000<br>EACH | _____.____ | _____.____ |
| 0512 | 618.0100<br>Maintenance And Repair of Haul Roads (project) 020. 1030-11-72 | 1.000<br>EACH | _____.____ | _____.____ |
| 0514 | 618.0100<br>Maintenance And Repair of Haul Roads (project) 021. 1030-25-79 | 1.000<br>EACH | _____.____ | _____.____ |
| 0516 | 619.1000<br>Mobilization | 1.000<br>EACH | _____.____ | _____.____ |
| 0518 | 620.0300<br>Concrete Median Sloped Nose **P** | 865.000<br>SF | _____.____ | _____.____ |
| 0520 | 623.0200<br>Dust Control Surface Treatment | 520,750.000<br>SY | _____.____ | _____.____ |
| 0522 | 624.0100<br>Water | 6,820.000<br>MGAL | _____.____ | _____.____ |
| 0524 | 625.0100<br>Topsoil | 45,820.000<br>SY | _____.____ | _____.____ |
| 0526 | 625.0500<br>Salvaged Topsoil | 179,725.000<br>SY | _____.____ | _____.____ |
| 0528 | 627.0200<br>Mulching | 78,244.000<br>SY | _____.____ | _____.____ |
| 0530 | 628.1104<br>Erosion Bales | 346.000<br>EACH | _____.____ | _____.____ |
| 0532 | 628.1504<br>Silt Fence | 8,948.000<br>LF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0534 | 628.1520<br>Silt Fence Maintenance | 8,948.000<br>LF | _____.____ | _____.____ |
| 0536 | 628.1905<br>Mobilizations Erosion Control | 60.000<br>EACH | _____.____ | _____.____ |
| 0538 | 628.1910<br>Mobilizations Emergency Erosion Control | 74.000<br>EACH | _____.____ | _____.____ |
| 0540 | 628.2004<br>Erosion Mat Class I Type B | 144,887.000<br>SY | _____.____ | _____.____ |
| 0542 | 628.2008<br>Erosion Mat Urban Class I Type B | 10,341.000<br>SY | _____.____ | _____.____ |
| 0544 | 628.2027<br>Erosion Mat Class II Type C | 6,740.000<br>SY | _____.____ | _____.____ |
| 0546 | 628.5505<br>Polyethylene Sheeting | 2,000.000<br>SY | _____.____ | _____.____ |
| 0548 | 628.6505<br>Soil Stabilizer Type A | 4.790<br>ACRE | _____.____ | _____.____ |
| 0550 | 628.6510<br>Soil Stabilizer Type B | 18.400<br>ACRE | _____.____ | _____.____ |
| 0552 | 628.7005<br>Inlet Protection Type A | 542.000<br>EACH | _____.____ | _____.____ |
| 0554 | 628.7010<br>Inlet Protection Type B | 337.000<br>EACH | _____.____ | _____.____ |
| 0556 | 628.7015<br>Inlet Protection Type C | 24.000<br>EACH | _____.____ | _____.____ |
| 0558 | 628.7020<br>Inlet Protection Type D | 164.000<br>EACH | _____.____ | _____.____ |
| 0560 | 628.7504<br>Temporary Ditch Checks | 3,442.000<br>LF | _____.____ | _____.____ |
| 0562 | 628.7555<br>Culvert Pipe Checks | 178.000<br>EACH | _____.____ | _____.____ |
| 0564 | 628.7560<br>Tracking Pads | 40.000<br>EACH | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0566 | 628.7570<br>Rock Bags | 973.000<br>EACH | _____.____ | _____.____ |
| 0568 | 630.0160<br>Seeding Mixture No. 60 | 85.000<br>LB | _____.____ | _____.____ |
| 0570 | 630.0200<br>Seeding Temporary | 3,847.000<br>LB | _____.____ | _____.____ |
| 0572 | 633.0100<br>Delineator Posts Steel | 86.000<br>EACH | _____.____ | _____.____ |
| 0574 | 633.0500<br>Delineator Reflectors | 288.000<br>EACH | _____.____ | _____.____ |
| 0576 | 633.1000<br>Delineator Brackets | 776.000<br>EACH | _____.____ | _____.____ |
| 0578 | 633.5200<br>Markers Culvert End | 41.000<br>EACH | _____.____ | _____.____ |
| 0580 | 634.0618<br>Posts Wood 4x6-Inch X 18-FT | 141.000<br>EACH | _____.____ | _____.____ |
| 0582 | 634.0622<br>Posts Wood 4x6-Inch X 22-FT | 25.000<br>EACH | _____.____ | _____.____ |
| 0584 | 634.0816<br>Posts Tubular Steel 2x2-Inch X 16-FT | 8.000<br>EACH | _____.____ | _____.____ |
| 0586 | 634.0885<br>Posts Tubular Steel 2x2-Inch X 8.5-FT | 13.000<br>EACH | _____.____ | _____.____ |
| 0588 | 635.0200<br>Sign Supports Structural Steel HS | 13,400.000<br>LB | _____.____ | _____.____ |
| 0590 | 635.0300<br>Sign Supports Replacing Base Connection Bolts | 2.000<br>EACH | _____.____ | _____.____ |
| 0592 | 636.0100<br>Sign Supports Concrete Masonry **P** | 83.000<br>CY | _____.____ | _____.____ |
| 0594 | 636.0500<br>Sign Supports Steel Reinforcement **P** | 1,360.000<br>LB | _____.____ | _____.____ |
| 0596 | 636.1500<br>Sign Supports Steel Coated Reinforcement HS **P** | 11,920.000<br>LB | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0598 | 637.1220<br>Signs Type I Reflective SH | 1,892.500<br>SF | _____.____ | _____.____ |
| 0600 | 637.1230<br>Signs Type I Reflective F | 18.500<br>SF | _____.____ | _____.____ |
| 0602 | 637.2210<br>Signs Type II Reflective H | 1,547.070<br>SF | _____.____ | _____.____ |
| 0604 | 637.2215<br>Signs Type II Reflective H Folding | 84.760<br>SF | _____.____ | _____.____ |
| 0606 | 637.2230<br>Signs Type II Reflective F | 249.500<br>SF | _____.____ | _____.____ |
| 0608 | 637.5453<br>Barricades Permanent Type III | 8.000<br>EACH | _____.____ | _____.____ |
| 0610 | 638.2101<br>Moving Signs Type I | 11.000<br>EACH | _____.____ | _____.____ |
| 0612 | 638.2102<br>Moving Signs Type II | 164.000<br>EACH | _____.____ | _____.____ |
| 0614 | 638.2601<br>Removing Signs Type I | 8.000<br>EACH | _____.____ | _____.____ |
| 0616 | 638.2602<br>Removing Signs Type II | 176.000<br>EACH | _____.____ | _____.____ |
| 0618 | 638.3000<br>Removing Small Sign Supports | 147.000<br>EACH | _____.____ | _____.____ |
| 0620 | 638.3100<br>Removing Structural Steel Sign Supports | 32.000<br>EACH | _____.____ | _____.____ |
| 0622 | 638.4000<br>Moving Small Sign Supports | 147.000<br>EACH | _____.____ | _____.____ |
| 0624 | 640.1303.S<br>Pond Liner Clay | 1,500.000<br>CY | _____.____ | _____.____ |
| 0626 | 641.0600<br>Sign Bridge Single Pole Sign Support Two Signs (structure) 006. S-51-222 | LS | LUMP SUM | _____.____ |
| 0628 | 641.0600<br>Sign Bridge Single Pole Sign Support Two Signs (structure) 008. S-51-223 | LS | LUMP SUM | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0630 | 641.1200<br>Sign Bridge Cantilevered (structure) 001. S-51-20 | LS | LUMP SUM | _____.____ |
| 0632 | 641.1200<br>Sign Bridge Cantilevered (structure) 002. S-51-21 | LS | LUMP SUM | _____.____ |
| 0634 | 641.8100<br>Overhead Sign Support (structure) 001. S-51-223 @ STA 950+75 | LS | LUMP SUM | _____.____ |
| 0636 | 641.8100<br>Overhead Sign Support (structure) 003. S-51-218 | LS | LUMP SUM | _____.____ |
| 0638 | 641.8100<br>Overhead Sign Support (structure) 004. S-51-234 | LS | LUMP SUM | _____.____ |
| 0640 | 643.0300<br>Traffic Control Drums | 391,621.000<br>DAY | _____.____ | _____.____ |
| 0642 | 643.0420<br>Traffic Control Barricades Type III | 62,931.000<br>DAY | _____.____ | _____.____ |
| 0644 | 643.0500<br>Traffic Control Flexible Tubular Marker Posts | 194.000<br>EACH | _____.____ | _____.____ |
| 0646 | 643.0600<br>Traffic Control Flexible Tubular Marker Bases | 194.000<br>EACH | _____.____ | _____.____ |
| 0648 | 643.0705<br>Traffic Control Warning Lights Type A | 118,188.000<br>DAY | _____.____ | _____.____ |
| 0650 | 643.0715<br>Traffic Control Warning Lights Type C | 67,811.000<br>DAY | _____.____ | _____.____ |
| 0652 | 643.0800<br>Traffic Control Arrow Boards | 1,528.000<br>DAY | _____.____ | _____.____ |
| 0654 | 643.0900<br>Traffic Control Signs | 503,134.000<br>DAY | _____.____ | _____.____ |
| 0656 | 643.0910<br>Traffic Control Covering Signs Type I | 52.000<br>EACH | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0658 | 643.0920<br>Traffic Control Covering Signs Type II | 184.000<br>EACH | _____.____ | _____.____ |
| 0660 | 643.1000<br>Traffic Control Signs Fixed Message | 2,229.500<br>SF | _____.____ | _____.____ |
| 0662 | 643.1050<br>Traffic Control Signs PCMS | 5,380.000<br>DAY | _____.____ | _____.____ |
| 0664 | 643.1051<br>Traffic Control Signs PCMS with Cellular Communications | 2,400.000<br>DAY | _____.____ | _____.____ |
| 0666 | 643.1055.S<br>Truck or Trailer Mounted Attenuator | 215.000<br>DAY | _____.____ | _____.____ |
| 0668 | 643.4100.S<br>Traffic Control Interim Lane Closure 001. IH 94 | 400.000<br>EACH | _____.____ | _____.____ |
| 0670 | 643.5000<br>Traffic Control | 1.000<br>EACH | _____.____ | _____.____ |
| 0672 | 645.0111<br>Geotextile Type DF Schedule A **P** | 30,605.000<br>SY | _____.____ | _____.____ |
| 0674 | 645.0120<br>Geotextile Type HR | 2,125.000<br>SY | _____.____ | _____.____ |
| 0676 | 645.0130<br>Geotextile Type R | 1,035.000<br>SY | _____.____ | _____.____ |
| 0678 | 645.0220<br>Geogrid Type SR | 19,000.000<br>SY | _____.____ | _____.____ |
| 0680 | 646.1020<br>Marking Line Epoxy 4-Inch **P** | 6,136.000<br>LF | _____.____ | _____.____ |
| 0682 | 646.1040<br>Marking Line Grooved Wet Ref Epoxy 4-Inch **P** | 133,733.000<br>LF | _____.____ | _____.____ |
| 0684 | 646.1545<br>Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch **P** | 1,215.000<br>LF | _____.____ | _____.____ |
| 0686 | 646.1555<br>Marking Line Grooved Contrast Permanent Tape 4-Inch **P** | 46,370.000<br>LF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0688 | 646.3545<br>Marking Line Grooved Wet Ref Contrast Epoxy 8-Inch **P** | 1,670.000<br>LF | _____.____ | _____.____ |
| 0690 | 646.3555<br>Marking Line Grooved Contrast Permanent Tape 8-Inch **P** | 15,148.000<br>LF | _____.____ | _____.____ |
| 0692 | 646.5020<br>Marking Arrow Epoxy | 2.000<br>EACH | _____.____ | _____.____ |
| 0694 | 646.5520<br>Marking Outfall Epoxy | 168.000<br>EACH | _____.____ | _____.____ |
| 0696 | 646.6120<br>Marking Stop Line Epoxy 18-Inch **P** | 222.000<br>LF | _____.____ | _____.____ |
| 0698 | 646.6464.S<br>Cold Weather Marking Epoxy 4-Inch | 13,200.000<br>LF | _____.____ | _____.____ |
| 0700 | 646.6468.S<br>Cold Weather Marking Epoxy 8-Inch | 1,850.000<br>LF | _____.____ | _____.____ |
| 0702 | 646.7220<br>Marking Chevron Epoxy 24-Inch **P** | 758.000<br>LF | _____.____ | _____.____ |
| 0704 | 646.8120<br>Marking Curb Epoxy **P** | 40.000<br>LF | _____.____ | _____.____ |
| 0706 | 646.8220<br>Marking Island Nose Epoxy | 4.000<br>EACH | _____.____ | _____.____ |
| 0708 | 646.9000<br>Marking Removal Line 4-Inch | 31,570.000<br>LF | _____.____ | _____.____ |
| 0710 | 646.9010<br>Marking Removal Line Water Blasting 4-Inch | 85,079.000<br>LF | _____.____ | _____.____ |
| 0712 | 646.9110<br>Marking Removal Line Water Blasting 8-Inch | 10,344.000<br>LF | _____.____ | _____.____ |
| 0714 | 649.0105<br>Temporary Marking Line Paint 4-Inch | 98,269.000<br>LF | _____.____ | _____.____ |
| 0716 | 649.0120<br>Temporary Marking Line Epoxy 4-Inch | 121,729.000<br>LF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0718 | 649.0150<br>Temporary Marking Line Removable Tape 4-Inch | 73,225.000<br>LF | _____.____ | _____.____ |
| 0720 | 649.0205<br>Temporary Marking Line Paint 8-Inch | 1,449.000<br>LF | _____.____ | _____.____ |
| 0722 | 649.0220<br>Temporary Marking Line Epoxy 8-Inch | 4,566.000<br>LF | _____.____ | _____.____ |
| 0724 | 649.0250<br>Temporary Marking Line Removable Tape 8-Inch | 8,754.000<br>LF | _____.____ | _____.____ |
| 0726 | 649.0520<br>Temporary Marking Arrow Epoxy | 2.000<br>EACH | _____.____ | _____.____ |
| 0728 | 649.0760<br>Temporary Marking Raised Pavement Marker Type I | 990.000<br>EACH | _____.____ | _____.____ |
| 0730 | 649.0820<br>Temporary Marking Stop Line Epoxy 18-Inch | 40.000<br>LF | _____.____ | _____.____ |
| 0732 | 652.0125<br>Conduit Rigid Metallic 2-Inch | 30.000<br>LF | _____.____ | _____.____ |
| 0734 | 652.0225<br>Conduit Rigid Nonmetallic Schedule 40 2-Inch | 11,527.000<br>LF | _____.____ | _____.____ |
| 0736 | 652.0235<br>Conduit Rigid Nonmetallic Schedule 40 3-Inch | 1,348.000<br>LF | _____.____ | _____.____ |
| 0738 | 652.0700.S<br>Install Conduit into Existing Item | 4.000<br>EACH | _____.____ | _____.____ |
| 0740 | 652.0800<br>Conduit Loop Detector | 703.000<br>LF | _____.____ | _____.____ |
| 0742 | 653.0135<br>Pull Boxes Steel 24x36-Inch | 4.000<br>EACH | _____.____ | _____.____ |
| 0744 | 653.0140<br>Pull Boxes Steel 24x42-Inch | 44.000<br>EACH | _____.____ | _____.____ |
| 0746 | 653.0905<br>Removing Pull Boxes | 27.000<br>EACH | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0748 | 654.0102<br>Concrete Bases Type 2 | 1.000<br>EACH | _____.____ | _____.____ |
| 0750 | 654.0105<br>Concrete Bases Type 5 | 5.000<br>EACH | _____.____ | _____.____ |
| 0752 | 654.0106<br>Concrete Bases Type 6 | 2.000<br>EACH | _____.____ | _____.____ |
| 0754 | 654.0107<br>Concrete Bases Type 7 | 10.000<br>EACH | _____.____ | _____.____ |
| 0756 | 654.0110<br>Concrete Bases Type 10 | 1.000<br>EACH | _____.____ | _____.____ |
| 0758 | 654.0113<br>Concrete Bases Type 13 | 2.000<br>EACH | _____.____ | _____.____ |
| 0760 | 654.0217<br>Concrete Control Cabinet Bases Type 9 Special | 1.000<br>EACH | _____.____ | _____.____ |
| 0762 | 654.1150<br>Concrete Bases Camera Pole 50-FT | 1.000<br>EACH | _____.____ | _____.____ |
| 0764 | 655.0230<br>Cable Traffic Signal 5-14 AWG | 308.000<br>LF | _____.____ | _____.____ |
| 0766 | 655.0240<br>Cable Traffic Signal 7-14 AWG | 577.000<br>LF | _____.____ | _____.____ |
| 0768 | 655.0270<br>Cable Traffic Signal 15-14 AWG | 335.000<br>LF | _____.____ | _____.____ |
| 0770 | 655.0320<br>Cable Type UF 2-10 AWG Grounded | 537.000<br>LF | _____.____ | _____.____ |
| 0772 | 655.0510<br>Electrical Wire Traffic Signals 12 AWG | 31,900.000<br>LF | _____.____ | _____.____ |
| 0774 | 655.0515<br>Electrical Wire Traffic Signals 10 AWG | 1,460.000<br>LF | _____.____ | _____.____ |
| 0776 | 655.0525<br>Electrical Wire Traffic Signals 6 AWG | 27,375.000<br>LF | _____.____ | _____.____ |
| 0778 | 655.0610<br>Electrical Wire Lighting 12 AWG | 3,399.000<br>LF | _____.____ | _____.____ |

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0780 | 655.0620<br>Electrical Wire Lighting 8 AWG | 5,189.000<br>LF | _____.____ | _____.____ |
| 0782 | 655.0630<br>Electrical Wire Lighting 4 AWG | 498.000<br>LF | _____.____ | _____.____ |
| 0784 | 655.0700<br>Loop Detector Lead In Cable | 3,934.000<br>LF | _____.____ | _____.____ |
| 0786 | 655.0800<br>Loop Detector Wire | 2,006.000<br>LF | _____.____ | _____.____ |
| 0788 | 656.0200<br>Electrical Service Meter Breaker Pedestal (location) 002. MB-SDS-51-0016 | LS | LUMP SUM | _____.____ |
| 0790 | 656.0200<br>Electrical Service Meter Breaker Pedestal (location) 006. IH 94 EB - CTH K | LS | LUMP SUM | _____.____ |
| 0792 | 656.0200<br>Electrical Service Meter Breaker Pedestal (location) 008. MBDP968 | LS | LUMP SUM | _____.____ |
| 0794 | 656.0200<br>Electrical Service Meter Breaker Pedestal (location) 010. MB-CCTV-51-0064 | LS | LUMP SUM | _____.____ |
| 0796 | 656.0500<br>Electrical Service Breaker Disconnect Box (location) 001. SDS-51-0016 | LS | LUMP SUM | _____.____ |
| 0798 | 656.0500<br>Electrical Service Breaker Disconnect Box (location) 008. DP968 | LS | LUMP SUM | _____.____ |
| 0800 | 656.0500<br>Electrical Service Breaker Disconnect Box (location) 010. CCTV-51-0064 | LS | LUMP SUM | _____.____ |
| 0802 | 657.0100<br>Pedestal Bases | 1.000<br>EACH | _____.____ | _____.____ |
| 0804 | 657.0210<br>Transformer Bases Breakaway 15-17 Inch Bolt Circle | 10.000<br>EACH | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0806 | 657.0255<br>Transformer Bases Breakaway 11 1/2-Inch Bolt Circle | 7.000<br>EACH | _____.____ | _____.____ |
| 0808 | 657.0310<br>Poles Type 3 | 1.000<br>EACH | _____.____ | _____.____ |
| 0810 | 657.0322<br>Poles Type 5-Aluminum | 7.000<br>EACH | _____.____ | _____.____ |
| 0812 | 657.0327<br>Poles Type 6-Aluminum | 2.000<br>EACH | _____.____ | _____.____ |
| 0814 | 657.0330<br>Poles Type 7 | 8.000<br>EACH | _____.____ | _____.____ |
| 0816 | 657.0605<br>Luminaire Arms Single Member 4 1/2-Inch Clamp 4-FT | 3.000<br>EACH | _____.____ | _____.____ |
| 0818 | 657.0640<br>Luminaire Arms Single Member 6-Inch Clamp 15-FT | 8.000<br>EACH | _____.____ | _____.____ |
| 0820 | 657.0720<br>Luminaire Arms Truss Type 6-Inch Clamp 20-FT | 4.000<br>EACH | _____.____ | _____.____ |
| 0822 | 657.1350<br>Install Poles Type 10 | 1.000<br>EACH | _____.____ | _____.____ |
| 0824 | 657.1355<br>Install Poles Type 12 | 1.000<br>EACH | _____.____ | _____.____ |
| 0826 | 657.1360<br>Install Poles Type 13 | 1.000<br>EACH | _____.____ | _____.____ |
| 0828 | 657.1530<br>Install Monotube Arms 30-FT | 1.000<br>EACH | _____.____ | _____.____ |
| 0830 | 657.1535<br>Install Monotube Arms 35-FT | 1.000<br>EACH | _____.____ | _____.____ |
| 0832 | 657.1550<br>Install Monotube Arms 50-FT | 1.000<br>EACH | _____.____ | _____.____ |
| 0834 | 657.1815<br>Install Luminaire Arms Steel 15-FT | 3.000<br>EACH | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0836 | 658.0173<br>Traffic Signal Face 3S 12-Inch | 9.000<br>EACH | _____.____ | _____.____ |
| 0838 | 658.0174<br>Traffic Signal Face 4S 12-Inch | 3.000<br>EACH | _____.____ | _____.____ |
| 0840 | 658.5069<br>Signal Mounting Hardware (location) 302. IH 94 EB - CTH K | LS | LUMP SUM | _____.____ |
| 0842 | 659.1125<br>Luminaires Utility LED C | 15.000<br>EACH | _____.____ | _____.____ |
| 0844 | 659.1130<br>Luminaires Utility LED D | 11.000<br>EACH | _____.____ | _____.____ |
| 0846 | 670.0100<br>Field System Integrator 002. 1030-11-72 Signals | LS | LUMP SUM | _____.____ |
| 0848 | 670.0100<br>Field System Integrator 003. 1030-11-72 FTMS | LS | LUMP SUM | _____.____ |
| 0850 | 670.0100<br>Field System Integrator 004. 1030-11-79 | LS | LUMP SUM | _____.____ |
| 0852 | 670.0100<br>Field System Integrator 006. 1030-11-80 | LS | LUMP SUM | _____.____ |
| 0854 | 670.0100<br>Field System Integrator 008. 1030-25-79 | LS | LUMP SUM | _____.____ |
| 0856 | 670.0200<br>ITS Documentation 002. 1030-11-72 Signals | LS | LUMP SUM | _____.____ |
| 0858 | 670.0200<br>ITS Documentation 003. 1030-11-72 FTMS | LS | LUMP SUM | _____.____ |
| 0860 | 670.0200<br>ITS Documentation 004. 1030-11-79 | LS | LUMP SUM | _____.____ |
| 0862 | 670.0200<br>ITS Documentation 006. 1030-11-80 | LS | LUMP SUM | _____.____ |
| 0864 | 670.0200<br>ITS Documentation 008. 1030-25-79 | LS | LUMP SUM | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0866 | 671.0132<br>Conduit HDPE 3-Duct 2-Inch | 23,405.000<br>LF | _____.____ | _____.____ |
| 0868 | 671.0232<br>Conduit HDPE Directional Bore 3-Duct 2-Inch | 245.000<br>LF | _____.____ | _____.____ |
| 0870 | 671.0300<br>Fiber Optic Cable Marker | 41.000<br>EACH | _____.____ | _____.____ |
| 0872 | 673.0105<br>Communication Vault Type 1 | 21.000<br>EACH | _____.____ | _____.____ |
| 0874 | 673.0200<br>Tracer Wire Marker Posts | 3.000<br>EACH | _____.____ | _____.____ |
| 0876 | 673.0225.S<br>Install Pole Mounted Cabinet | 3.000<br>EACH | _____.____ | _____.____ |
| 0878 | 674.0200<br>Cable Microwave Detector | 5,880.000<br>LF | _____.____ | _____.____ |
| 0880 | 674.0300<br>Remove Cable | 8,405.000<br>LF | _____.____ | _____.____ |
| 0882 | 675.0300<br>Install Mounted Controller Microwave Detector Assembly | 10.000<br>EACH | _____.____ | _____.____ |
| 0884 | 677.0150<br>Install Camera Pole 50-FT | 1.000<br>EACH | _____.____ | _____.____ |
| 0886 | 677.0200<br>Install Camera Assembly | 1.000<br>EACH | _____.____ | _____.____ |
| 0888 | 677.9051.S<br>Removing 50-FT Camera Pole | 1.000<br>EACH | _____.____ | _____.____ |
| 0890 | 677.9200.S<br>Removing CCTV Camera | 1.000<br>EACH | _____.____ | _____.____ |
| 0892 | 678.0006<br>Install Fiber Optic Cable Outdoor Plant 6-CT | 1,420.000<br>LF | _____.____ | _____.____ |
| 0894 | 678.0024<br>Install Fiber Optic Cable Outdoor Plant 24-CT | 30,020.000<br>LF | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0896 | 678.0072<br>Install Fiber Optic Cable Outdoor Plant 72-CT | 30,020.000<br>LF | _____._____ | _____._____ |
| 0898 | 678.0300<br>Fiber Optic Splice | 312.000<br>EACH | _____._____ | _____._____ |
| 0900 | 678.0400<br>Fiber Optic Termination | 28.000<br>EACH | _____._____ | _____._____ |
| 0902 | 678.0500<br>Communication System Testing 002. 1030-11-72 Signals | LS | LUMP SUM | _____._____ |
| 0904 | 678.0500<br>Communication System Testing 003. 1030-11-72 FTMS | LS | LUMP SUM | _____._____ |
| 0906 | 678.0500<br>Communication System Testing 004. 1030-11-79 | LS | LUMP SUM | _____._____ |
| 0908 | 678.0500<br>Communication System Testing 006. 1030-11-80 | LS | LUMP SUM | _____._____ |
| 0910 | 678.0500<br>Communication System Testing 008. 1030-25-79 | LS | LUMP SUM | _____._____ |
| 0912 | 678.0600<br>Install Ethernet Switches | 5.000<br>EACH | _____._____ | _____._____ |
| 0914 | 690.0150<br>Sawing Asphalt | 2,337.000<br>LF | _____._____ | _____._____ |
| 0916 | 690.0250<br>Sawing Concrete | 47,883.000<br>LF | _____._____ | _____._____ |
| 0918 | 715.0710<br>Optimized Aggregate Gradation Incentive | 342,917.000<br>DOL | 1.00000 | 342,917.00 |
| 0920 | ASP.1T0A<br>On-the-Job Training Apprentice at $5.00/HR | 7,560.000<br>HRS | 5.00000 | 37,800.00 |
| 0922 | ASP.1T0G<br>On-the-Job Training Graduate at $5.00/HR | 16,200.000<br>HRS | 5.00000 | 81,000.00 |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0924 | SPV.0030<br>Special 001. Fertilizer Type B Special | 226.000<br>CWT | _____.____ | _____.____ |
| 0926 | SPV.0035<br>Special 005. Backfill Slurry | 1,020.000<br>CY | _____.____ | _____.____ |
| 0928 | SPV.0035<br>Special 006. Roadway Embankment **P** | 289,510.000<br>CY | _____.____ | _____.____ |
| 0930 | SPV.0035<br>Special 007. Excavation, Hauling, and Potential Reuse of Solid Waste Soil | 820.000<br>CY | _____.____ | _____.____ |
| 0932 | SPV.0035<br>Special 008. EBS Excavation | 73,577.000<br>CY | _____.____ | _____.____ |
| 0934 | SPV.0035<br>Special 009. EBS Backfill | 73,577.000<br>CY | _____.____ | _____.____ |
| 0936 | SPV.0035<br>Special 400. HPC Masonry Structures **P** | 2,956.000<br>CY | _____.____ | _____.____ |
| 0938 | SPV.0045<br>Special 001. Portable Speed Trailer | 788.000<br>DAY | _____.____ | _____.____ |
| 0940 | SPV.0045<br>Special 002. Dynamic Late Merge System | 153.000<br>DAY | _____.____ | _____.____ |
| 0942 | SPV.0055<br>Special 002. Dispute Resolution Board | 20,000.000<br>DOL | 1.00000 | 20,000.00 |
| 0944 | SPV.0060<br>Special 001. Box Spillway 5' X 5' | 1.000<br>EACH | _____.____ | _____.____ |
| 0946 | SPV.0060<br>Special 002. Rootstock Vegetation | 510.000<br>EACH | _____.____ | _____.____ |
| 0948 | SPV.0060<br>Special 004. Salvaging Existing Barricade Rack | 2.000<br>EACH | _____.____ | _____.____ |
| 0950 | SPV.0060<br>Special 012. Temporary Stone Ditch Checks | 20.000<br>EACH | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0952 | SPV.0060<br>Special 013. Fixed Message Sign Portable Support Special | 22.000<br>EACH | _____.____ | _____.____ |
| 0954 | SPV.0060<br>Special 016. Mobilizations Emergency Pavement Repair | 13.000<br>EACH | _____.____ | _____.____ |
| 0956 | SPV.0060<br>Special 018. Barricade Rack | 2.000<br>EACH | _____.____ | _____.____ |
| 0958 | SPV.0060<br>Special 027. Manhole 10-Feet | 1.000<br>EACH | _____.____ | _____.____ |
| 0960 | SPV.0060<br>Special 028. Sign Support Galvanized Posts, 8.5-FT | 4.000<br>EACH | _____.____ | _____.____ |
| 0962 | SPV.0060<br>Special 030. Exposing Existing Infrastructure Unpaved Area | 3.000<br>EACH | _____.____ | _____.____ |
| 0964 | SPV.0060<br>Special 031. Exposing Existing Infrastructure Paved Area | 3.000<br>EACH | _____.____ | _____.____ |
| 0966 | SPV.0060<br>Special 032. Sand Bags | 363.000<br>EACH | _____.____ | _____.____ |
| 0968 | SPV.0060<br>Special 042. Traffic Control Local Road Lane Closures | 3.000<br>EACH | _____.____ | _____.____ |
| 0970 | SPV.0060<br>Special 043. Traffic Control Close-Open Freeway Entrance Ramp | 120.000<br>EACH | _____.____ | _____.____ |
| 0972 | SPV.0060<br>Special 052. Fastening Sewer Access Covers | 120.000<br>EACH | _____.____ | _____.____ |
| 0974 | SPV.0060<br>Special 060. Surface Settlement Markers | 3.000<br>EACH | _____.____ | _____.____ |
| 0976 | SPV.0060<br>Special 062. Abandonment of Geotechnical Instrumentation | 1.000<br>EACH | _____.____ | _____.____ |
| 0978 | SPV.0060<br>Special 063. Apron Endwalls for Culvert Pipe HE Salvaged 19x30-Inch | 4.000<br>EACH | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 0980 | SPV.0060<br>Special 070. Baseline CPM Progress Schedule | 1.900<br>EACH | _____.____ | _____.____ |
| 0982 | SPV.0060<br>Special 071. Monthly CPM Progress Schedule Updates | 84.000<br>EACH | _____.____ | _____.____ |
| 0984 | SPV.0060<br>Special 077. Pavement Marking Contrast Epoxy Special Marking Words | 16.000<br>EACH | _____.____ | _____.____ |
| 0986 | SPV.0060<br>Special 081. Pavement Marking Contrast Epoxy Special Marking Arrows Type 2 | 18.000<br>EACH | _____.____ | _____.____ |
| 0988 | SPV.0060<br>Special 082. Pavement Marking Contrast Epoxy Special Marking Arrows Type 3 | 5.000<br>EACH | _____.____ | _____.____ |
| 0990 | SPV.0060<br>Special 085. Pavement Marking Contrast Epoxy Special Marking Arrows Type 4 | 2.000<br>EACH | _____.____ | _____.____ |
| 0992 | SPV.0060<br>Special 086. Pavement Marking Contrast Epoxy Special Marking Arrows Type 5 | 6.000<br>EACH | _____.____ | _____.____ |
| 0994 | SPV.0060<br>Special 091. Section Corner Monuments | 9.000<br>EACH | _____.____ | _____.____ |
| 0996 | SPV.0060<br>Special 092. Reconnect Storm Sewer | 172.000<br>EACH | _____.____ | _____.____ |
| 0998 | SPV.0060<br>Special 093. Concrete Barrier Transition Type G1 | 1.000<br>EACH | _____.____ | _____.____ |
| 1000 | SPV.0060<br>Special 094. Concrete Barrier Transition Type M1 | 1.000<br>EACH | _____.____ | _____.____ |
| 1002 | SPV.0060<br>Special 095. Concrete Barrier Transition Type M2 | 1.000<br>EACH | _____.____ | _____.____ |
| 1004 | SPV.0060<br>Special 096. Temporary Sediment Traps | 25.000<br>EACH | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 1006 | SPV.0060<br>Special 098. Maintain Crash Cushions Temporary Left In Place | 5.000<br>EACH | _____.____ | _____.____ |
| 1008 | SPV.0060<br>Special 235. 40-Foot Temporary Wood Post | 3.000<br>EACH | _____.____ | _____.____ |
| 1010 | SPV.0060<br>Special 236. Temporary Vehicle Detector Assembly | 2.000<br>EACH | _____.____ | _____.____ |
| 1012 | SPV.0060<br>Special 237. Refocusing Vehicle Detector Assembly | 13.000<br>EACH | _____.____ | _____.____ |
| 1014 | SPV.0060<br>Special 240. Install Temporary Traffic Camera Assembly | 1.000<br>EACH | _____.____ | _____.____ |
| 1016 | SPV.0060<br>Special 251. Ground Rod | 5.000<br>EACH | _____.____ | _____.____ |
| 1018 | SPV.0060<br>Special 254. Relocating Temporary Traffic Camera Assembly | 2.000<br>EACH | _____.____ | _____.____ |
| 1020 | SPV.0060<br>Special 255. Install Terminal Server | 1.000<br>EACH | _____.____ | _____.____ |
| 1022 | SPV.0075<br>Special 002. Boulder Obstructions | 5.000<br>HRS | _____.____ | _____.____ |
| 1024 | SPV.0075<br>Special 005. Pavement Cleanup Project 1030-11-72 | 500.000<br>HRS | _____.____ | _____.____ |
| 1026 | SPV.0075<br>Special 007. Pavement Cleanup Project 1030-11-79 | 300.000<br>HRS | _____.____ | _____.____ |
| 1028 | SPV.0075<br>Special 009. Pavement Cleanup Project 1030-25-79 | 400.000<br>HRS | _____.____ | _____.____ |
| 1030 | SPV.0075<br>Special 011. Pavement Cleanup Project 1030-11-80 | 300.000<br>HRS | _____.____ | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 1032 | SPV.0075<br>Special 401. Obstructions Sign Supports Concrete Masonry | 4.000<br>HRS | _____.____ | _____.____ |
| 1034 | SPV.0085<br>Special 002. Seeding Mixture No. 30 Special | 9,032.000<br>LB | _____.____ | _____.____ |
| 1036 | SPV.0090<br>Special 018. Maintain Concrete Barrier Temporary Precast | 49,880.000<br>LF | _____.____ | _____.____ |
| 1038 | SPV.0090<br>Special 023. Temporary Glare Screen | 27,800.000<br>LF | _____.____ | _____.____ |
| 1040 | SPV.0090<br>Special 037. Concrete Barrier Temporary Precast Anchored On Asphaltic Bridge Overlay | 110.000<br>LF | _____.____ | _____.____ |
| 1042 | SPV.0090<br>Special 052. Drain Slotted Vane Longitudinal | 4,019.000<br>LF | _____.____ | _____.____ |
| 1044 | SPV.0090<br>Special 074. Micro Tunneling Storm Sewer Reinforced Concrete Pipe Class V 36-Inch | 219.000<br>LF | _____.____ | _____.____ |
| 1046 | SPV.0090<br>Special 084. Heavy Duty Silt Fence | 9,080.000<br>LF | _____.____ | _____.____ |
| 1048 | SPV.0090<br>Special 101. Removing Overhead Lighting Cable | 173.000<br>LF | _____.____ | _____.____ |
| 1050 | SPV.0090<br>Special 403. Coring Timber Piles | 180.000<br>LF | _____.____ | _____.____ |
| 1052 | SPV.0105<br>Special 004. Survey Project 1030-11-72 | <br>LS | LUMP SUM | _____.____ |
| 1054 | SPV.0105<br>Special 006. Survey Project 1030-11-79 | <br>LS | LUMP SUM | _____.____ |
| 1056 | SPV.0105<br>Special 008. Survey Project 1030-25-79 | <br>LS | LUMP SUM | _____.____ |
| 1058 | SPV.0105<br>Special 010. Survey Project 1030-11-80 | <br>LS | LUMP SUM | _____.____ |

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Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 1060 | SPV.0105<br>Special 103. Underdeck Lighting Special Cth K | LS | LUMP SUM | _____.____ |
| 1062 | SPV.0105<br>Special 114. Freeway Lighting Integrator ID 1030-11-72 | LS | LUMP SUM | _____.____ |
| 1064 | SPV.0105<br>Special 120. Lighting System Survey | LS | LUMP SUM | _____.____ |
| 1066 | SPV.0105<br>Special 121. Maintenance of Lighting Systems | LS | LUMP SUM | _____.____ |
| 1068 | SPV.0105<br>Special 301. Install State Furnished Traffic Signal Cabinet, IH 94 EB Ramps - CTH K | LS | LUMP SUM | _____.____ |
| 1070 | SPV.0105<br>Special 310. Transport Traffic Signal and Intersection Ltg Mtrls, IH 94 EB-CT | LS | LUMP SUM | _____.____ |
| 1072 | SPV.0105<br>Special 311. Install State Furnished Traffic Signal Equipment, IH 94 EB - CTH K | LS | LUMP SUM | _____.____ |
| 1074 | SPV.0105<br>Special 354. Transport and Install State Furnished FO Cable Pigtail 8-Ct, CB1 S51-1285 | LS | LUMP SUM | _____.____ |
| 1076 | SPV.0105<br>Special 355. Transport and Install State Furnished FO Cable Pigtail 8-Ct, CB1 S51-1438 | LS | LUMP SUM | _____.____ |
| 1078 | SPV.0135<br>Special 001. Vibration Monitoring | 6.000<br>MON | _____.____ | _____.____ |
| 1080 | SPV.0135<br>Special 002. Field Office Special | 22.000<br>MON | _____.____ | _____.____ |
| 1082 | SPV.0165<br>Special 401. Longitudinal Grooving Bridge Deck **P** | 77,556.000<br>SF | _____.____ | _____.____ |

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SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 1084 | SPV.0165<br>Special 453. Wall Concrete Panel Mechanically Stabilized Earth R-51-53 **P** | 12,234.000<br>SF | _____.____ | _____.____ |
| 1086 | SPV.0165<br>Special 454. Wall Concrete Panel Mechanically Stabilized Earth R-51-54 **P** | 9,468.000<br>SF | _____.____ | _____.____ |
| 1088 | SPV.0165<br>Special 455. Wall Concrete Panel Mechanically Stabilized Earth R-51-55 **P** | 19,477.000<br>SF | _____.____ | _____.____ |
| 1090 | SPV.0165<br>Special 456. Wall Concrete Panel Mechanically Stabilized Earth R-51-56 **P** | 12,604.000<br>SF | _____.____ | _____.____ |
| 1092 | SPV.0165<br>Special 457. Wall Concrete Panel Mechanically Stabilized Earth R-51-57 **P** | 13,515.000<br>SF | _____.____ | _____.____ |
| 1094 | SPV.0165<br>Special 458. Wall Concrete Panel Mechanically Stabilized Earth R-51-58 **P** | 3,562.000<br>SF | _____.____ | _____.____ |
| 1096 | SPV.0165<br>Special 473. Partial Depth Precast Prestressed Concrete Deck Panel B-51-132 | 4,840.000<br>SF | _____.____ | _____.____ |
| 1098 | SPV.0165<br>Special 474. Partial Depth Precast Prestressed Concrete Deck Panel B-51-133 | 4,840.000<br>SF | _____.____ | _____.____ |
| 1100 | SPV.0165<br>Special 475. Partial Depth Precast Prestressed Concrete Deck Panel B-51-134 | 4,829.000<br>SF | _____.____ | _____.____ |
| 1102 | SPV.0165<br>Special 476. Partial Depth Precast Prestressed Concrete Deck Panels B-51-135 | 4,829.000<br>SF | _____.____ | _____.____ |

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

SECTION: 0001 Contract Items

Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID<br>Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|---|---|---|---|---|
| 1104 | SPV.0165<br>Special 477. Partial Depth Precast Prestressed Concrete Deck Panels B-51-136 | 10,111.000<br>SF | _____.____ | _____.____ |
| 1106 | SPV.0165<br>Special 478. Partial Depth Precast Prestressed Concrete Deck Panels B-51-137 | 10,111.000<br>SF | _____.____ | _____.____ |
| 1108 | SPV.0170<br>Special 002. Removal and Disposal of Invasive Plant Species | 81.000<br>STA | _____.____ | _____.____ |
| 1110 | SPV.0180<br>Special 005. Rootstock Protection | 1,100.000<br>SY | _____.____ | _____.____ |
| 1112 | SPV.0180<br>Special 012. Concrete Pavement 12-Inch Special **P** | 404,472.000<br>SY | _____.____ | _____.____ |
| 1114 | SPV.0180<br>Special 400. Slope Paving Crushed Aggregate Special | 3,868.000<br>SY | _____.____ | _____.____ |
| 1116 | SPV.0195<br>Special 004. HMA Longitudinal Joint Repair | 1,990.000<br>TON | _____.____ | _____.____ |
| 1118 | SPV.0195<br>Special 006. Select Subbase | 1,704.000<br>TON | _____.____ | _____.____ |
| 1120 | SPV.0195<br>Special 009. Excavation, Hauling, and Disposal of Creosote Contaminated Soil | 4,215.000<br>TON | _____.____ | _____.____ |
| 1122 | SPV.0195<br>Special 011. Soil Drying Treatment | 3,657.000<br>TON | _____.____ | _____.____ |
| 1124 | SPV.0195<br>Special 012. Subgrade Strengthening Treatment | 2,330.000<br>TON | _____.____ | _____.____ |
| 1126 | SPV.0195<br>Special 015. HMA Transverse Joint Repair | 820.000<br>TON | _____.____ | _____.____ |
| 1128 | SPV.0200<br>Special 002. Manholes 4-FT Diameter Special | 82.000<br>VF | _____.____ | _____.____ |

Proposal ID: 20180522002 Project(s): 1030-11-72, 1030-11-79, 1030-11-80, 1030-25-79

Federal ID(s): WISC 2018335, WISC 2018327, WISC 2018328, WISC 2018329

Section: 0001 Total: _____.____

Total Bid: _____.____

# PLEASE ATTACH SCHEDULE OF ITEMS HERE