

HIGHWAY WORK PROPOSAL

Wisconsin Department of Transportation
06/2017 s.66.0901(7) Wis. Stats

Proposal Number: **029**

| <u>COUNTY</u> | <u>STATE PROJECT</u> | <u>FEDERAL</u> | <u>PROJECT DESCRIPTION</u> | <u>HIGHWAY</u> |
|----------------------|----------------------|----------------|--|----------------|
| Winnebago Calumet | 1517-75-73 | WISC 2018157 | Ush 10 - Ush 10/Sth 441; County Cb - Oneida Street | USH 010 |
| Winnebago Calumet | 1517-75-79 | WISC 2018158 | Ush 10 - Ush 10/Sth 441; County Cb - Oneida Street | USH 010 |

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: \$960,000.00 Payable to: Wisconsin Department of Transportation | Attach Proposal Guaranty on back of this PAGE. |
| Bid Submittal Date: March 13, 2018 Time (Local Time): 9:00 am | Firm Name, Address, City, State, Zip Code |
| Contract Completion Time November 15, 2019 | SAMPLE NOT FOR BIDDING PURPOSES |
| Assigned Disadvantaged Business Enterprise Goal 8% | This contract is subject to federal oversight. |

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

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

Subscribed and sworn to before me this date _____

(Signature, Notary Public, State of Wisconsin)

(Bidder Signature)

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

(Print or Type Bidder Name)

(Date Commission Expires)

(Bidder Title)

Notary Seal

| | |
|--|-------------------------|
| Type of Work: | For Department Use Only |
| Grading, Base, Asphalt Pavement, Concrete Pavement, Bridge Overlays, Retaining Walls, Noise Barrier Walls, Sign Bridges, Overhead Sign Supports, Culvert Pipe, Storm Sewer, Curb and Gutter, Sidewalk, Concrete Driveway, Concrete Barrier, Beam Guard, Signs, Pavement Markings, Fence, Street Lighting, Traffic Signals, ITS | |
| 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 ExpressTM web site.
 2. Use ExpediteTM software to enter a unit price for every item in the schedule of items.
 3. Submit the bid according to the requirements of ExpediteTM software and the Bid ExpressTM 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 ExpressTM 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 ExpediteTM 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 ExpressTM web site to assure that the schedule of items is prepared properly.

- (2) Staple an 8 1/2 by 11 inch printout of the ExpediteTM 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 ExpediteTM 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 ExpediteTM generated schedule of items is the governing contract document and must conform to the requirements of section 102 of the standard specifications. If a printout needs to be altered, cross out the printed information with ink or typewriter and enter the new information and initial it in ink. If there is a discrepancy between the printout and the diskette or CD ROM, the department will analyze the bid using the printout information.

- (5) In addition to the reasons specified in [section 102](#) of the standard specifications, proposals are irregular and the department may reject them for one or more of the following:
1. The check code printed on the bottom of the printout of the ExpediteTM generated schedule of items is not the same on each page.
 2. The check code printed on the printout of the ExpediteTM generated schedule of items is not the same as the check code for that proposal provided on the diskette or CD ROM.
 3. The diskette or CD ROM is not submitted at the time and place the department designates.

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

DT1303 1/2006

Wisconsin Department of Transportation

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

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

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

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

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

PRINCIPAL

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

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

(Company Name)

(Signature and Title)

NOTARY FOR PRINCIPAL

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

(Signature of Attorney-in-Fact)

NOTARY FOR SURETY

(Date)

State of Wisconsin)
) ss.
_____ County)

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

(Signature, Notary Public, State of Wisconsin)

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

(Date Commission Expires)

Notary Seal

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

CERTIFICATE OF ANNUAL BID BOND

DT1305 8/2003

Wisconsin Department of Transportation

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

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

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

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

(Signature of Authorized Contractor Representative)

(Date)

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.

[illegible]

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. Administrative.

1.1 General.

Perform the work under this construction contract for Project 1517-75-73, USH 10 – USH 10/STH 441, County CB - Oneida Street, USH 10, STH 441 Southbound Mainline (Midway Road – East Project Limits) and Project 1517-75-79, USH 10 – USH 10/STH 441, County CB – Oneida Street, USH 10, Oneida Street (USH 10) Interchange, Winnebago and Calumet Counties, 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 (20170615)

1.2 Scope of Work.

The work under this contract consists of grading, breaker run, base aggregate dense, concrete pavement, HMA pavement, concrete barrier, storm sewer, erosion control, pavement marking, permanent signing, traffic signals, landscaping, structure work on B-70-113, B-70-114, B-70-115, B-70-116, B-70-423, B-70-424, construction of retaining wall R-08-002 and R-70-141, construction of noise walls N-70-121, N-70-130, N-70-131, N-70-140, construction of overhead sign Structures S-08-50, S-08-51, S-08-052, S-08-53, S-08-054, S-08-055, S-70-217, S-70-218, S-70-220, S-70-225, S-70-227, S-70-234, S-70-235, S-70-236, S-70-237, S-70-238, S-70-239, S-70-256, S-70-261, S-70-262, and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

1.3 Other Contracts.

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

Project 1517-07-77, USH 41 Interchange Bridges and LLBDM Bridge B-70-61 Redecking, Winnebago County, Wisconsin under a department contract. Work under this contract (LET date of July 12, 2016) is anticipated to be complete in July 2018. The work under this contract consists of common excavation, borrow excavation, construction of Structures

B-70-401, B-70-405, B-70-406, redecking of B-70-61, S-70-206, S-70-209, S-70-254, concrete pavement, HMA pavement, storm sewer and erosion control. The work under this contract is not expected to inhibit any construction on Project 1517-75-73 or 1517-75-79.

Project 1517-07-80, USH 10 – USH 10/STH 441, County CB – Oneida Street, I-41 Interchange Ramps Winnebago County, Wisconsin under a department contract. Work under this contract (LET date of December 13, 2016) is anticipated to be complete in September 2018. The work under this contract shall consist of excavation common, breaker run, base aggregate dense, concrete pavement, HMA pavement, storm sewer, erosion control items, pavement marking, Structures B-70-407, B-70-409, S-70-257 and construction of Structures, R-70-120, N-70-100, N-70-101, and erosion control. The work under this contract has schedule and work zone overlap for 1517-75-73. The work under this contract will not impact 1517-75-79.

Project 1517-75-72, USH 10 – USH 10/STH 441 County CB - Oneida Street, USH 10, Midway Interchange Mainline, Winnebago County, Wisconsin under a department contract. Work under this contract (LET date of July 11, 2017) is anticipated to be completed in November of 2018. The work under this contract consists of common excavation, roadway embankment, prefabricated vertical and horizontal drains, base aggregate, concrete pavement, HMA pavement, storm sewer, demo of bridges B-70-111 and B-70-112, construction of B-70-423 and B-70-424, retaining walls, sign structures, erosion control, signing, pavement marking, and lighting. The work under this contract has schedule and work zone overlap for 1517-75-73 but does not impact Project 1517-75-79.

Project 1517-75-83, USH 10 – USH 10/STH 441, County CB – Oneida Street, Oneida St (Valley Rd and Midway Rd), Winnebago County, Wisconsin under a department contract. Work under this contract (LET date of May 9, 2017) is anticipated to be complete July 1, 2018. The work under this contract consists of common excavation, concrete pavement, concrete curb and gutter, storm sewer, erosion control, pavement marking, removals and signing. The work under this contract has schedule and work zone overlap for Project 1517-75-79, but does not impact Project 1517-75-73.

Project 4984-01-74, Local Street, C Appleton, Oneida Street, Valley Road to Skyline Bridge, Outagamie County, Wisconsin under a City of Appleton contract. Work under this contract (LET date December 12, 2017) is anticipated to be started in spring of 2018. The proposed action would resurface Oneida Street from Valley Road to Skyline Bridge. The work under this contract does have schedule overlap, but does not have work zone overlap.

1.4 Notice to Contractor – Street Sweeping.

All street sweeping due to contractors hauling operations is considered incidental to the contract. The contractor is responsible for keeping all public roadways clean and free from dirt and debris at all times. For this work provide a self-contained mechanical or air conveyance street sweeper and dispose the accumulated material.

Cleaning of the roadway before traffic switches or cleaning of roadways from non-contractor vehicle traffic will be paid for under the contract item Street Sweeping.
(NER441-20150117)

1.5 Notice to Contractor-Wendy's Drive-through.

The contractor shall coordinate with Wendy's to complete this work of off-peak hours and pour fast curing concrete mix to complete the work on off-peak hours and open it back to traffic within 8 hours.
(NER441-20150117)

1.6 Notice to Contractor- Right-of-Way Fencing.

Maintain all existing freeway right-of-way fencing or temporary fencing that is disturbed by your operations. At no time leave a site where the fencing is inadequate to protect the general public.
(NER441-20150117)

2. Prosecution and Progress.

2.1 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. Assure that the time frame is consistent with the contract completion time. Upon approval, the engineer will issue the notice to proceed within ten calendar days before the beginning of the approved time frame.

To revise the time frame, submit a written request to the engineer at least two weeks before the beginning of the intended time frame. 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 may require extraordinary forces and equipment. The schedule accounts for crews operating at the same time in different locations throughout the project limits. Multiple crews are anticipated in stages 4A and 4B east and west of Appleton Road. The proposed schedule of operations indicates that a large force and adequate equipment will be needed to assure that the work will be completed within the established contract time.

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

Anticipate cold weather 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.

When engaged in roadway cleaning operations, use equipment having vacuum or water spray mechanisms to eliminate the dispersion of particulate matter into the atmosphere. If vacuum equipment is employed, it must have suitable self-contained particulate collectors to prevent discharge from the collection bin into the atmosphere.

Excess fill material and cleared and grubbed material shall be stockpiled on upland areas an adequate distance away from wetlands, storm sewer inlets, floodplains, and the waterways. Provide erosion control devices for stockpiled soil to avoid erosion and nuisance dust emissions.

The contractor is advised that there may be multiple mobilizations for such items as erosion control, traffic control, detours, signing items, temporary pavement markings and other incidental items related to the staging. The department will make no additional payment for said mobilizations.

There will be only non-peak lane closures allowed under this contract.

The municipalities agree to waive any noise ordinances/restrictions pertaining to the construction of the WIS 441 Project, for the duration of the WIS 441 Project, with the following exceptions:

- Do not perform pile driving between 10:00 PM and 7:00 AM.
- Do not perform any demolition work with hydraulic excavator mounted hammers between 10:00 PM and 7:00 AM.

Do not begin or continue any work that closes the freeway or ramps, unless otherwise shown in the plans. Work may be performed, provided such work operations do not include ingress and egress of vehicles and equipment which would obstruct the flow of traffic on the freeway, during the two lane requirement hours as per the traffic article.

An assumed duration of specific traffic control set up and related construction activities have been included for information only. The contractor can elect to complete individual construction stages and traffic phases any time during the project contract, provided the prerequisites have been met and interim and final completion dates are met.

Do not close Oneida Street and the Oneida Street interchange ramps prior to August 1, 2018.

No hauling on Midway Road after July 1, 2019, to eliminate conflict with work under 1517-75-77.

Fence Installation Notification

Notify the department's maintenance section a minimum of two weeks prior to permanent fence installation for final installation location. Contact Matt Haefs, Maintenance Section engineer, at (920) 366-1832.

Opening of Dual Lane Ramps

Sign structures for dual lane ramps need to be placed prior to the opening of the dual lane ramps.

Traffic/Construction Overview

Follow the construction operations as outlined in the staging overview sheets and other plan details. Items listed below are not limited to, but only highlight construction activities, that are subject to interim completion dates, liquidated damages, or penalties.

Stage 1

- Construct storm sewer.
- Construct temporary paving in median and along outside shoulder of USH 10 Eastbound/STH 441 Northbound.
- Complete removals associated with placing storm sewer below USH 10/STH 441 and existing USH 10/STH 441 shoulders in areas of temporary widening.
- Complete partial noise wall removal associated with placing storm sewer crossing from pond 5 to City of Appleton connection, west of USH 10/Oneida Street interchange.

Stage 2

- Construct USH 10 Eastbound/STH 441 Northbound and USH 10 Westbound/STH 441 Southbound French drains, including storm sewer.
- Complete removals associated with the following:
 - French drains construction.
 - Storm sewer construction.

Stage 3A

- Complete construction to base aggregate grade of USH 10 Westbound/STH 441 Southbound roadway, USH 10/Oneida Street northeast and northwest ramps, and Appleton Road northeast ramp.
- Construct retaining wall along USH 10/Oneida Street northeast ramp.
- Construct storm sewer.
- Complete removals associated with the following:
 - Reconstruction of USH 10 Westbound/STH 441 Southbound.
 - Reconstruction of USH 10/Oneida Street northeast and northwest ramps.
 - Reconstruction of Appleton Road northeast ramp.
 - Partial pavement removal and median removal on Oneida Street for storm sewer placement.

- Clearing and grubbing for Pond 5 and storm sewer along USH 10/Oneida Street northwest ramp.
- Noisewall panel removal needed for storm sewer connection to City of Appleton water east of USH 10/Oneida Street interchange.

Stage 3B

- Complete construction of permanent USH 10 Westbound/STH 441 Southbound roadway and the USH 10/Oneida Street northeast, northwest, and southwest ramps.
- Complete removals associated with the reconstruction of USH 10/Oneida Street southeast and southwest ramps.
- Start construction of USH 10/Oneida Street DDI under Project 1517-75-79.

Stage 3C

- Complete construction of permanent USH 10 Westbound/STH 441 Southbound roadway and shoulders that were gapped between Appleton Road and USH 10/Oneida Street due to temporary Appleton Road northeast ramp configuration.
- Construct temporary crossover east of Appleton Road.
- Complete permanent USH 10 Westbound/STH 441 Southbound mainline from Appleton Road northwest ramp to B-70-114. Available after completion of subgrade on 1517-75-72.
- Complete removals associated with removing the temporary Appleton Road northeast ramp.
- Complete construction of USH 10/Oneida Street DDI under Project 1517-75-79.

Stage 3D

- Complete traffic shift of USH 10 Westbound/STH 441 Southbound lanes for winter shutdown.
- Remove crossover at east end of project limits and install new one.

Stage 4A

- Complete construction of USH 10 Eastbound/STH 441 Northbound roadway from USH 10/Oneida Street to the east project limits and USH 10/Oneida Street southeast ramp.
- Complete construction of USH 10 Westbound/STH 441 Southbound from west project limits to Appleton Road and Appleton Road northwest ramp.
- Construct storm sewer.
- Work on Structure N-70-121 shall not begin until April 1, 2019. The existing noise barrier must remain in place until the construction of the new barrier begins.
- Complete removals associated with the following:
 - Reconstruction of USH 10 Eastbound/STH 441 Northbound.
 - Reconstruction of USH 10/Oneida Street southeast ramp.
 - Reconstruction of Appleton Road northwest ramp.

Stage 4B

- Complete construction of USH 10 Eastbound/STH 441 Northbound roadway from Appleton Road to USH 10/Oneida Street.
- Complete construction of USH 10 Eastbound/STH 441 Northbound shoulder from Midway Road southeast ramp gore to Midway Road.
- Complete construction of Appleton Road southeast ramp and USH 10/Oneida Street southwest ramp.
- Complete removals associated with the following:
 - Removal of temporary Appleton Road southeast ramp and USH 10/Oneida Street southwest ramp.
 - Removal of the temporary widened shoulder on USH 10/STH 441 Northbound at Midway Road.

Stage 5

- Complete construction of permanent concrete barrier, sign structures, barrier transitions, pedestrian bridge piers, and lighting.

Interim Liquidated Damages

1517-75-79

Close Oneida Street to mainline traffic for a maximum of 90 consecutive calendar days.

If the contractor fails to open Oneida Street to mainline traffic within 90 consecutive calendar days, the department will assess the contractor \$6,250.00 in interim liquidated damages for each calendar day the work remains incomplete beyond 12:01 AM, after the 90th day. An entire calendar day will be charged for any period of time within a calendar day that Oneida Street and the associated ramps remain closed beyond 12:01 AM for the remainder of the contract.

1517-75-73

If the contractor fails to open USH 10/Oneida Street ramps to mainline traffic when 1517-75-79 Oneida Street interchange opens, the department will assess the contractor \$6,250.00 in interim liquidated damages for each calendar day the work remains incomplete beyond 12:01AM, after the Oneida Street interchange is open. This damage will be assessed under the administrative item Failing to Open Road to Traffic.

Close USH 10 WB/STH 441SB exit ramp at the Racine Street interchange to mainline traffic for a maximum of 28 consecutive calendar days.

If the contractor fails to open the USH 10 Westbound/STH 441 Southbound exit ramp at the Racine Street interchange within 28 consecutive calendar days, the department will assess the contractor \$2,070.00 in interim liquidated damages for each calendar day that work remains incomplete beyond 12:01 AM, after the 28th day. 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 for the remainder of the contract.

The department will not grant time extensions to the interim completion dates specified above 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.

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

2.2 Lane Rental Fee Assessment.

A General

The contract designates some lane closures to perform the work. No Lane Rental Fee Assessments will be charged for closing lanes during the allowable lane closure times. If a lane is closed outside of the allowable lane closure times, the contractor will be subject to Lane Rental Fee Assessments. If a lane is obstructed at any time due to contractor operations, it is considered a closure. The purpose of lane rental is to enforce compliance of lane restrictions and discourage unnecessary closures.

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

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

A.1 Lane Rental Fee Assessment

The Lane Rental Fee Assessment incurred for each USH 10/STH 441 lane closure, ramp closure, and full closure of a roadway, per direction of travel, is as follows:

\$2,500 per lane per 15 minutes

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

Lane Rental Fee Assessments will be made based on the applicable rate for any and all closures whether work is being performed or not. 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.

B (Vacant)

C (Vacant)

D Measurement

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.

E (Vacant)

2.3 CPM Baseline Schedule, Item SPV.0060.001; CPM Schedule Monthly Updates, Item SPV.0060.002.

Replace standard spec 108.4 with the following:

108.4 Critical Path Method Progress Schedule

108.4.1 Definitions

The department defines terms as follows:

Activity

A task, event or other project element on a schedule that contributes to completing the project. Activities have a description, start date, finish date, duration and one or more logic ties.

Contract Completion Date

The current extended date for completion of the contract.

Critical Path

The longest continuous path of activities through the project that has the least amount of total float. In general, a delay on the critical path will extend the scheduled completion date.

Critical Path Method (CPM)

A network based planning technique using activity durations and the relationships between activities to mathematically calculate a schedule for the entire project.

Data Date

The earliest work period after the date through which a schedule is current. Everything occurring earlier than the data date is "as-built" and everything on or after the data date is "as-planned."

Department's Preliminary Design Schedule

The department's schedule for the contract work, developed during design, and provided to the contractor for informational purposes only.

Float

The difference between the earliest and latest allowable start or finish times for an activity.

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.

Milestone

An event activity that has zero duration and is typically used to represent the beginning or end of a certain stage of the project.

Scheduled Completion Date

The planned project finish date shown on the current accepted schedule.

Total Float

The amount of time that an activity or chain of activities can be delayed before extending the scheduled completion date. It is the most critical total float if the start float and finish float differ.

108.4.2 Department's Preliminary Design Schedule

The department's Preliminary Design Schedule was developed during the design phase of the Contract. Its purpose was to illustrate work areas per Stage/Phase of construction. Durations and resource availability are department estimates only. Contractor is solely responsible for its use of means and methods and as such is fully responsible for determining durations based on own estimate of production and available resources. The suggested use of the department's Preliminary Design Schedule is ease of identification of work availability during each Stage/Phase and the logical relationship between the Stages/Phases. Any reliance on the department's Preliminary Design Schedule is at the sole risk of the contractor.

108.4.3 Contractor's Scheduling Responsibilities

The CPM Schedule shall be a tool capable of forward planning and monitoring the Project. The schedule will further be used as a communication tool between the contractor and the department. It will be used to illustrate the plan, develop what-if scenarios, and analyze impacts. The accuracy and completeness of the CPM Schedule will benefit both the contractor and the department.

The contractor shall submit to the department initial and monthly update schedules, each consistent in all respects with the time and order of work requirements of the contract. The project work shall be executed in the sequence indicated on the current accepted schedule. Schedules shall show the order in which the contractor proposes to carry out the work with logical links between activities, and calculations made using the critical path method to determine the controlling operation or operations. The contractor is responsible for assuring that each schedule shows a coordinated plan for complete performance of the work.

Contractor project management personnel shall actively participate in the schedule development. Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate schedule.

The schedules shall be computer produced using the latest version of Primavera Project Planner, by Oracle, Inc., Bala Cynwyd, PA or compatible software. The contractor shall designate a Project Scheduler who will be responsible for scheduling the work and submit for approval a professional resume describing their experience.

108.4.4 Submittals

108.4.4.1 Initial Work Plan

At least ten business days before the Preconstruction Meeting, as scheduled in section 103.10 as defined in article 4.1 Contract Award and Execution, submit an Initial Work Plan consisting of the following:

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 21 calendar days (15 business days), unless the department accepts requested exceptions.

- 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. Activities other than construction activities may have durations greater than 21 calendar days (15 business days). Allow 21 calendar days (15 business days) for department review of submittals.
- Provide summary activities for the balance of the project. Summary activities may have durations greater than 21 calendar days (15 business days).
- Submit/email an electronic schedule data file and a PDF plot file of the Initial Work Plan to the department.
- The department 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 within five business days. The department will use the initial work plan to monitor the progress of the work until the CPM Baseline Schedule is accepted.
- Submit an updated version of the Initial Work Plan on a bi – weekly (every other week) basis until the department accepts the CPM Baseline 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.

108.4.4.2 CPM Baseline Schedule (Initial Schedule)

Within 60 calendar days after the notice to proceed submit a CPM Baseline Schedule and written narrative consisting of the following:

1. The CPM Baseline Schedule shall include the following:
 - 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 21 calendar days (15 business days), unless the department accepts requested exceptions.
 - 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 21 calendar days (15 business days). Allow 21 calendar days (15 business days) for department review of submittals.
 - Provide activities as necessary to depict third party work related to the contract.
 - Make allowance for specified work restrictions, non-working days, time constraints, calendars, and weather.
 - 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. Use of Start-to-Finish relationships, Finish-to-Start relationships with a lag, and negative lags will not be accepted unless the department accepts requested exceptions.
 - Schedule all intermediate Contract required milestones (Incentive/Disincentive target dates are not considered Contract requirements) in the proper sequence and input as either a “Start-no-Earlier-Than” or “Finish-no-Later-Than” date (mandatory dates will not be permitted.). Provide predecessors and successors for each intermediate milestone as necessary to model each Stage of the Work. Unless the department accepts a requested exception, the schedule shall encompass all the time in the contract period between the starting date and the specified completion date.
 - Schedules shall have not less than 150 and not more than 400 activities unless otherwise authorized by the department. The number of activities shall be sufficient to assure adequate planning of the project, to permit monitoring and evaluation of progress, and to do an analysis of time impacts. Schedule activities shall include the following:

A clear and legible description
Required constraints
Codes for responsibility, stage and area

2. Provide a written narrative with the CPM Baseline Schedule 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:
 - 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
 - Use of constraints
 - Use of calendars
 - Estimated number of adverse weather days on a monthly-basis
 - Scheduling of permit and environmental constraints, and coordination of the schedule with other contractors, utilities, and public entities
3. Submit/email an electronic schedule data file and a PDF plot file of the CPM Baseline Schedule to the department.

Within ten business days of receiving the CPM Baseline Schedule, the department will provide comments and schedule a meeting for the contractor to present its CPM Baseline Schedule within fifteen business days of receiving the CPM Baseline Schedule.

At the meeting scheduled by the department, provide a presentation of the CPM Baseline Schedule. 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 department's review.

Within five business days after the meeting, the department will accept the contractor's CPM Baseline Schedule or provide additional comments. Address the department's comments and resubmit a revised CPM Baseline Schedule within ten business days after the department's request. If the department requests justification for activity durations, provide information that may include estimated labor, equipment, unit quantities, and production rates used to determine the activity duration.

The department accepts the CPM Baseline Schedule based solely on whether the schedule is complete as specified in this section. Errors or omissions on schedules shall not relieve the contractor from finishing all work within the time limit specified for completion of the contract. If, after a schedule has been accepted by the department, either the contractor or the department discovers that any aspect of the schedule has an error or omission, it shall be corrected by the contractor on the next update schedule.

The department will not consider requests for contract time extensions as specified in 108.10 or additional compensation for delay specified in 109.4.7 until the department accepts the CPM Baseline Schedule.

108.4.4.3 CPM Schedule Monthly Updates

Submit CPM Schedule Monthly Updates on a monthly basis after acceptance of the CPM Baseline Schedule. With each CPM Schedule Monthly Update include the following:

- Actual start dates, completion percentages, and remaining durations for activities started but not completed, and actual finish dates for completed activities.
- 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. Changes that result in a change to the current Critical Path will be subject to the provisions in CPM Schedule Revisions.
- A narrative report that shall be organized in the following sequence with all applicable documents included:
 - a. Contractor's transmittal letter.
 - b. Work completed during the period.
 - c. Identification of unusual conditions or restrictions regarding labor, equipment or material; including multiple shifts, 6-day work weeks, specified overtime or work at times other than regular days or hours.
 - d. Description of the current critical path.
 - e. Changes to the critical path and scheduled completion date since the last schedule submittal.
 - f. Description of problem areas including: current and anticipated delays; cause of delay; impact of delay on other activities, milestones and completion dates; corrective action and schedule adjustments to correct the delay.
 - g. Pending items and status thereof, including: Permits, Change orders and Time adjustments
 - h. Work planned for the next 30 calendar days, and
 - i. Changes to the CPM Baseline Schedule including: the addition or deletion of activities; changes to activity descriptions, original durations, relationships, constraints, calendars, or previously recorded actual dates. Justify changes to the CPM Baseline Schedule in the narrative by describing associated changes in the planned methods or manner of performing the work or changes in the work itself.

Submit/email and electronic schedule data file and a PDF plot file of the CPM Schedule Monthly Update to the department.

If additions or changes were made to the CPM Baseline Schedule since the previous update, submit an updated hard copy of the revised logic diagram as described above.

Within five business days of receiving each CPM Schedule Monthly Update, the department will provide comments and schedule a meeting as necessary to address comments raised in the department's review. Address the department's comments and resubmit a revised CPM Schedule Monthly Update within five business days after the department's request.

108.4.4.4 Three-Week Look-Ahead Schedules

Submit Three-Week Look-Ahead Schedules on a weekly basis, at the weekly construction meeting, after notice to proceed (NTP). The schedule can be hand drawn or generated by computer; however, the schedule activities must conform to the latest approved update. With each Three-Week Look-Ahead include:

- Activities underway and as-built dates for the past week.
- Planned work for the upcoming two-week period including lane closures and traffic switches.
- The activities of the Three-Week Look-Ahead schedule shall include the activities underway and critical RFIs and submittals, based on the CPM Progress Schedule. The Three-Week Look-Ahead may also include details on other activities not individually represented in the CPM Progress Schedule. Indicate the controlling items of work.
- 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 any disagreements. Use the as-built dates from the Three-Week Look-Ahead schedules for the month when updating the CPM Progress Schedule.

108.4.4.5 Weekly Production Data

Provide estimated and actual weekly production curves for items of work on a weekly basis for applicable items of work as determined by the department as follows:

1. Provide data on the following items by area or station:
 - Retaining Walls—SF per week
 - MSE Walls
 - Other Wall Types
 - Bridge Construction
 - Foundation Pile—each per week
 - Foundation/Substructure Concrete—CY per week
 - Structural Steel Girders – Each per week
 - Prestressed Concrete Girders—Each per week
 - Deck Formwork—SF per week
 - Roadway Excavation—CY per week
 - Roadway Embankment—CY per week
 - Roadway Structural Section
 - Grading/Subgrade Preparation—SY per week
 - Base Material Placement—Ton per week
 - Base Material Subgrade Preparation—SY per week
 - Asphaltic Base—Ton per week
 - Asphaltic and HMA Pavements—Ton per week
 - Concrete Pavement – SY per week
 - Concrete Pavement – CY per week

Note: Base material shall include all breaker run, base aggregate, subbase items or other base items included in the contract. Provide production information for each individual base material item.

2. For each item, indicate the actual daily production for the past week and the anticipated weekly production for the next week. Also include cumulative production curves showing the production information for each item to-date.
3. 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 any disagreements.

108.4.5 Progress Review Meetings

108.4.5.1 Weekly Progress Review Meetings

After completing the weekly submittal of the Three-Week Look-Ahead and production data, attend a weekly meeting to review the submittals with the department. At the meeting, address comments as necessary, and document agreement or disagreement with the department.

108.4.5.2 Monthly Update Review Meetings

After submitting the monthly update and receiving the department's comments, attend a job-site meeting, as scheduled by the department, 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 Schedule Revisions

108.4.6.1 Revision by the Contractor

If necessary, due to changes in the work or project conditions, and authorized by the department, the contractor may submit a revised CPM Schedule Monthly Update and/or CPM Baseline Schedule. Prepare the revised schedule(s) in the same format as required for the CPM Schedule Monthly Update and/or CPM Baseline Schedule. Include an updated written narrative, detailing all schedule modifications and justification for the changes. The process for comment and acceptance of the CPM schedule(s) revision will be the same as for a CPM Schedule Monthly Update and/or CPM Baseline Schedule. If the revised schedule(s) is accepted, prepare the next monthly update based on the revised CPM Schedule Monthly Update and/or CPM Baseline Schedule. If the revised schedule(s) is rejected, prepare the next monthly update based on the previous month's update.

108.4.6.2 Department's Right to Request Revisions

The department will monitor the progress of the work and may request revisions to the CPM Schedule Monthly Update and/or the CPM Baseline Schedule. Revise the schedule(s) as requested by the department, and submit a CPM Schedule Monthly Update and/or CPM Baseline Schedule revision within ten business days of the request. The process for comment and acceptance of the revised schedule(s) will be the same as for the CPM Schedule Monthly Updates and/or the CPM Baseline Schedule. The department may request schedule revisions for one or more of the following reasons:

- The project scheduled completion date(s) and/or interim completion date(s) are scheduled to occur more than 14 calendar days after the contract completion date.
- The department determines that the current schedule(s) is not an accurate record of the as-built work and/or is not an accurate forecast of the remaining work.
- 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.
- Changes to the current update result in changes to the critical path.

108.4.7 Requests for Time Extension

In the event the contractor believes it is entitled to an extension of the contract completion date, or any interim milestone date, furnish the following for a determination by the department: justification, project schedule data, and supporting evidence as the department may deem necessary. Submission of proof of excusable delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is a condition precedent to any approvals by the department.

Justification of Delay

The project schedule shall clearly display that the contractor has used, in full, all the float time available for the work involved with this request. The department's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. Actual delays that are found to be caused by the contractor's own actions, which result in a calculated schedule delay, will not be a cause for an extension to contract completion date, or any interim milestone date.

Submission Requirements

Submit a justification for each request for a change in the contract completion date of less than 2 weeks based upon the most recent schedule update at the time of the NTP or constructive direction issued for the change. Such a request shall be according to the requirements of other appropriate Schedule Provisions and shall include, as a minimum:

- A list of affected activities, with their associated project schedule activity number.
- A brief explanation of the causes of the change.
- An analysis of the overall impact of the changes proposed.
- A sub-network of the affected area.

Identify activities impacted in each justification for change by a unique activity code.

Additional Submission Requirements

The department may request an interim update with revised activities for any requested time extension of over 2 weeks. Provide this data within 5 days of the department's request.

Not Considered Delays

The department will not grant time extensions to the interim completion dates as specified for the following:

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

108.4.8 Payment for CPM Baseline Schedule and CPM Schedule Monthly Updates

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.0060.001 | CPM Baseline Schedule | EACH |
| SPV.0060.002 | CPM Schedule Monthly Updates | EACH |

The department will only make progress payments for the value of materials, as specified in standard spec 109.6.3.2.1, until the contractor has submitted the CPM Baseline Schedule. The department will retain ten percent of each estimate until the department accepts the CPM Baseline Schedule. Payment is full compensation for all work required under these bid items, including the three week look ahead. The department will pay the contract unit price for the CPM Baseline Schedule after the department accepts the schedule.

Thereafter, the department will pay the contract unit price for each CPM Schedule Monthly Updates that is accepted by the department. The department may, at its sole discretion, choose to suspend the requirement for one or more monthly updates. Should the requirement be suspended, the department shall give the contractor a minimum 5 work-day notice prior to the next scheduled update.
(NER441-20141017)

3. Meetings.

3.1 Non-Mandatory Pre-Bid Meeting.

Supplement standard spec 102.3.1 with the following:

Prospective bidders are invited to attend a pre-bid meeting on Tuesday, February 20, 2018 at 10:00 AM – 12:00 PM at W6214 Aerotech Drive, Appleton, WI 54914.

The meeting is not mandatory. No meeting minutes will be prepared. Issues discovered at the meeting which may impact the contract will be handled by addendum.
(NER41-20110414)

3.2 Timely Decision Making Manual.

Use the Timely Decision Making Manual (TDM) on this contract. Coordinate with the department to modify the various published tools as necessary to meet the particular project needs and determine how to implement those tools under the contract. Ensure the full participation of the contractor and its principal subcontractors throughout the term of the contract.

Forms and associated guidance are published in the TDM available at the department's Highway Construction Contract Information (HCCI) web site at:

[Timely Decision Making Manual \(TDM\)](#)

stp-105-005 (20151210)

3.3 Traffic Meetings and Traffic Control Scheduling.

Every Wednesday by 10:00 AM, submit a detailed proposed 2-week look-ahead traffic closure schedule to the engineer. Type the detailed proposed 2-week look-ahead closure schedule into an excel spreadsheet provided by the engineer. Enter information such as closure dates, duration, work causing the closure and detours to be used. Also enter information such as ongoing long-term closures, emergency contacts and general 2-month look-ahead closure information into the excel spreadsheet.

As scheduled by the engineer, attend a 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.
(NER441-20141017)

3.4 Coordination with Businesses.

The contractor shall arrange and conduct meetings between the department, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations. The first meeting shall be held prior to the start of work under this contract and as needed or directed by the engineer.
(NER441-20141017)

4. Alternative Dispute Resolution (Vacant).

5. Insurance.

5.1 Railroad Insurance and Coordination - Wisconsin Central Ltd (CN).

A Description

Comply with standard spec 107.17 for all work affecting Wisconsin Central Ltd (CN) property and any existing tracks.

A.1 Railroad Insurance Requirements

In addition to standard spec 107.26, provide railroad protective liability insurance coverage as specified in standard spec 107.17.3.

Insurance is filed in the name of Wisconsin Central Ltd and Its Parents (CN).

Notify evidence of the required coverage, and duration to:

Jackie Macewicz, Manager Public Works; 1625 Depot Street, Stevens Point, WI 54481; Telephone (715) 345-2503; E-mail: Jackie.macewicz@cn.ca.

Also send a copy to the following:

Jared Kinziger, NE Region Railroad Coordinator; 944 Vanderperren Way, Green Bay, WI 54304; Telephone (920) 492-7713; E-mail: jared.kinziger@dot.wi.gov.

Include the following information on the insurance document:

Project: 1517-75-73

Project Location: City of Menasha, Wisconsin

Route Name: Midway Road Interchange

Railroad Subdivision: Manitowoc Subdivision, Banta Spur

Crossing ID: None

Railroad Milepost: Near MP 187.54

Work Performed: Continued construction of the STH 441 and Midway Road interchange.

A.2 Train Operation

Approximately 6 through freight trains operate weekly at up to 10 mph.

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

Construction Contact

Jackie Macewicz, Manager Public Works; 1625 Depot St., Stevens Point, WI 54481; Telephone (715) 345-2503; E-mail jackie.macewicz@cn.ca for consultation on railroad requirements during construction.

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

Flagging Contact

Submit by US Mail a “Request for Flagging Services and Cable Location” form with prepayment to: Mary Ellen Carmody, CN, 24002 Vreeland Road, Flat Rock, MI 48134; Telephone (734) 783-4533. The form can be obtained at:

<http://www.cn.ca/en/delivering-responsibly/safety/erailsafe/utility-installations>

Requests for flagging and cable locates can take up to five business days after the railroad receives the paperwork. Reference the Wisconsin Milepost and Subdivision located in A.1.

Advise Ms. Carmody that the flagging services are to be billed at the rate for a public highway project.

Cable Locate Contact

In addition to contacting Diggers Hotline, follow the procedure listed under Flagging Contact.

Wisconsin Central Ltd (CN) will only locate railroad owned facilities buried in the railroad right-of-way. The railroad does not locate any other utilities.

A.4 Work by Railroad

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

A.5 Temporary Grade Crossing

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

stp 107-026 (20170615)

6. Environmental.

6.1 Environmental Protection.

Supplement standard spec 107.18 as follows:

Wetlands

Do not disturb nor store materials or topsoil within the nearby wetlands as shown on the erosion control sheets unless areas are designated to be filled or impacted as permitted in the project's U.S. Army Corps of Engineers Section 404 Permit. The work area shall be separated from the wetlands by silt fence, as shown on the plans, to avoid siltation and inadvertent fill into the wetland areas.

Invasive Plant Species

Phragmites and Loosestrife, invasive species plants, exist within the USH 41/USH 10 corridor. All soils outside of the median areas along USH 41/USH 10 containing plant or root fragments that will be disturbed as part of the work within the contract shall be incorporated into the salvaged topsoil within the immediate area of the work. Excavation and waste of Phragmites and Loosestrife infested soil from the median areas, other areas shown on the plans, and any other areas that may be approved by the engineer will be paid for under the Common Excavation item. Waste material shall be placed in upland locations in the general area where the plant currently exists. All other areas where Phragmites and Loosestrife soil is left on site will be paid for as Salvaged Topsoil.

For all equipment that comes into contact with Phragmites and Loosestrife infested areas, follow the guidelines established under the Environmental Protection, Aquatic Exotic

Species Control section of this special provision for inspection and cleaning of equipment prior to leaving the project site. Additional information on this plant can be found at the following website: www.dnr.wi.gov/invasives/plants.asp.
(NER441-20150117)

6.2 Notice to Contractor – Archaeological Survey Coordination.

The department will conduct archaeological surveys for borrow sites, batch plants, waste sites, and staging areas to be used for the project. If significant discoveries of non-burial related archaeological properties are discovered, Section 106 procedures pursuant to 36 CFR 800 will be followed or another area shall be obtained for borrow, batch plants, waste sites, and staging areas.

Notify the department as soon as possible to allow time for archaeological surveys to be completed in advance of your work.
(NER441-20141017)

6.3 Environmental Protection, Dewatering.

Supplement standard spec 107.18 as follows:

If dewatering is required, treat the water to remove suspended sediments by filtration, settlement or other appropriate best management practice prior to discharge. The means and methods proposed to be used during construction shall be submitted for approval as part of the Erosion Control Implementation Plan for dewatering at each location it is required. The submittal shall also include the details of how the intake will be managed to not cause an increase in the background level turbidity prior to treatment and any additional erosion controls necessary to prevent sediments from reaching the project limits or wetlands and waterways. Guidance on dewatering can be found on the Wisconsin Department of Natural Resources website located in the Storm Water Construction Technical Standards, Dewatering Code #1061, "Dewatering". This document can be found at the WisDNR website: http://dnr.wi.gov/topic/stormwater/standards/const_standards.html

The cost of all work and materials associated with water treatment and/or dewatering is incidental to the bid items the work is associated.
(NER12-1010)

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

The department obtained the U.S. Army Corps of Engineers Section 404 Permit. Comply with the requirements of the permit in addition to requirements of the special provisions. A copy of the permit is available from the regional office by contacting Scott Ebel at (920) 492-5676.

7. Traffic and Restrictions to Work.

7.1 Traffic.

Traffic Overview

Stage 1

- All lanes of USH 10/STH 441 to remain open during daytime hours.
- Full nighttime closures allowed for USH 10/STH 441 to place storm sewer. When USH 10 Eastbound/STH 441 Northbound is closed, USH 10 Westbound/STH 441 Southbound to remain open and when USH 10 Westbound/STH 441 Southbound is closed, USH 10 Eastbound/STH 441 Northbound to remain open.
- Nighttime single lane closures allowed for USH 10/STH 441 to complete temporary paving.
- All ramps open at Appleton Road.
- All ramps open at USH 10/Oneida Street except that the southeast ramp may be closed for five consecutive days to complete storm sewer along the ramp.

Stage 2

- USH 10/STH 441 traffic same as previous stage from west project limits to USH 10/Oneida Street.
- USH 10 Westbound/STH 441 Southbound traffic same as previous stage from USH 10/Oneida Street to east project limits.
- Shift USH 10 Eastbound/STH 441 Northbound traffic onto temporary widening and part of inside lane from USH 10/Oneida Street to east project limits.
- Nighttime single lane closures allowed for USH 10 Westbound/STH 441 Southbound to construct French drains.
- All ramps open at Appleton Road.

Stage 3A

- Shift both directions of USH 10/STH 441 traffic onto USH 10 Eastbound/STH 441 Northbound. Perform traffic switch simultaneously with traffic switch under 1517-75-72.
- All ramps open at Appleton Road except the northeast ramp may be closed for one weekend to construct the temporary ramp.
- USH 10/Oneida Street northeast and northwest ramps are closed.
- USH 10/Oneida Street southeast and southwest ramps are open.
- Lane closures allowed on USH 10/Oneida Street to construct storm sewer.

Stage 3B

- USH 10/STH 441 mainline traffic same as previous stage.
- All ramps open at Appleton Road.
- All ramps closed at Oneida Street.
- USH 10/Oneida Street will be closed under Project 1517-75-79 for Diverging Diamond Interchange (DDI) construction.

Stage 3C

- Shift westbound/southbound Appleton Road exit traffic onto extended exit ramp.
- USH 10/STH 441 mainline traffic same as previous stage.
- All ramps open at Appleton Road.
- All ramps closed at Oneida Street.
- USH 10/Oneida Street will be closed under Project 1517-75-79 for DDI construction.

Stage 3D

- USH 10 Eastbound/STH 441 Northbound traffic same as previous stage.
- USH 10 Westbound/STH 441 Southbound traffic same as previous stage from west project limits to Appleton Road.
- Shift USH 10 Westbound/STH 441 Southbound traffic onto new westbound outside lanes from Appleton Road to east project limits.
- All ramps open at Appleton Road.
- All ramps open at USH 10/Oneida Street.
- All lanes open on USH 10/Oneida Street.

Stage 4A

- USH 10 Westbound/STH 441 Southbound traffic same as previous stage.
- USH 10 Eastbound/STH 441 Northbound traffic same as previous stage from west project limits to Appleton Road.
- Shift USH 10 Eastbound/STH 441 Northbound onto new westbound roadway pavement from Appleton Road to east project limits.
- Westbound exit ramp at Racine Road closed for 28 consecutive calendar days to complete USH 10 Westbound/STH 441 Southbound center and left lane construction.
- Appleton Road northeast, southeast, and southwest ramps are open except the southeast ramp may be closed for one weekend to construct temporary ramp. The weekend closure must be coordinated to occur at the same time as the USH 10/Oneida Street southwest ramp weekend closure.
- Appleton Road northwest ramp may not be closed more than 86 consecutive calendar days.
- USH 10/Oneida Street northeast, northwest, and southwest ramps are open except the southwest ramp may be closed for one weekend to construct temporary ramp. The weekend closure must be coordinated to occur at the same time as the Appleton Road southeast ramp weekend closure.
- USH 10/Oneida Street southeast ramp is closed.

Stage 4B

- USH 10 Eastbound/STH 441 Northbound traffic same as previous stage.
- Shift USH 10 Westbound/STH 441 Southbound traffic onto new westbound lanes from the west project limits to Appleton Road.

- USH 10 Westbound/STH 441 Southbound traffic same as previous stage from Appleton Road to east project limits.
- Appleton Road northwest, northeast, and southwest ramps are open.
- USH 10/Oneida Street northwest, northeast, and southeast ramps are open.
- Appleton Road southeast ramp and USH 10/Oneida Street southwest ramp may not be closed more than 63 consecutive calendar days.

Stage 5

- Shift USH 10 Eastbound/STH 441 Northbound traffic onto the two outside lanes of the final eastbound pavement.
- Shift the USH 10 Westbound/STH 441 Southbound traffic onto the two outside lanes of the final westbound pavement.
- Five full nighttime closures allowed for USH 10/STH 441 to place sign structures. When USH 10 Eastbound/STH 441 Northbound is closed, USH 10 Westbound/STH 441 Southbound to remain open and when USH 10 Westbound/STH 441 Southbound is closed, USH 10 Eastbound/STH 441 Northbound to remain open. Rolling closures may also be used to place sign structures.
- All ramps open at Appleton Road.
- All ramps open at USH 10/Oneida Street.

1517-75-79

- Close USH 10/Oneida Street Interchange for construction, including all ramps and Oneida Street under STH 441 to through traffic, while maintaining access to businesses and to Meadow Grove Blvd, for 90 consecutive calendar days. The 90 consecutive calendar day closure shall begin and end between August 1, 2018 and November 1, 2018.

Traffic Signals

Prior to the erection of traffic signal poles and monotube arms, the contractor shall arrange and conduct a meeting between the contractor, the department, and on site engineer to coordinate traffic control requirements and restrictions for the installation of poles and monotube arms over live traffic lanes. Installation of poles, monotube arms and traffic signal modifications shall occur only during off-peak periods unless approved by the engineer.

Contact WisDOT Electrical Unit for signal phasing at the USH 10/Oneida St. and Midway Rd. intersection during 1517-75-79 construction.

Contact WisDOT Electrical Unit 7 days prior to closing the USH 10/Oneida Street southeast ramp for signal timing modifications.

Contact WisDOT Electrical Unit 7 days prior to closing the USH 10/Oneida Street southwest ramp for signal timing modifications.

Contact information for Wisconsin Department of Transportation Northeast Region Electrical Unit: Randy Asman, (920) 360-3107.

Contact City of Appleton representative for signal phasing at Oneida St. and Valley Rd. intersection during 1517-75-79 construction.

Contact information for City of Appleton Representative: Mike Hardy, (920) 832-6478.

Clear Zone Working Restrictions

Do not store materials or equipment within the clear zone of traffic lanes which are not protected by temporary precast barrier. Remove materials from the clear zone prior to opening lane closures. Do not leave any slopes steeper than 3:1 or any drop offs at the edge of the traveled way greater than 2 inches within the clear zone which are not protected by temporary precast barrier prior to opening lane closures.

Do not perform heavy equipment work in the median at any time unless protected by concrete barrier in both directions except as allowed during night work with lane closures.

Do not perform heavy equipment work within 18 feet of the edge of the traveled way unless protected by concrete barrier or a lane closure during the allowed closure periods.

Park equipment a minimum of 30-feet from the edge of the traveled way. Equipment may be parked in the median if it meets the minimum distance requirement from both traveled ways or if it is protected by concrete barrier.

If the contractor is unsure whether an individual work operation will meet the safety requirements for working within the clear zone, review the proposed work operation with the engineer before proceeding with the work.

(NER441-20141017)

Freeway Service Team (FST)

As part of a traffic mitigation program called Freeway Service Team (FST), the department has contracted with a private towing vendor to patrol parts of STH 441/USH 10 during peak hours, holidays and special events. To improve safety and minimize delay, contact 911 or the Wisconsin State Patrol, (920) 929-3700, immediately for breakdowns or incidents in or near the construction work zone. FST will be dispatched directly to the scene to aid the vehicles that need to be removed.

(NER441-20141017)

Expressway / Freeway Traffic Control Meeting

Conduct a traffic control meeting prior to:

1. Initial traffic control set up.
2. Intermediate traffic switches.
3. Reopening of the highway to traffic.

Notify Susan Paulus at (414) 460-3409 seven business days prior to setting up the meeting.
(NER441-20141017)

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 $\geq 16'$) | 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)

Portable Changeable Message Signs – Message Prior Approval

After coordinating with department construction field staff, notify Susan Paulus at (414) 460-3409, 3 business days prior to deploying or changing a message on a PCMS to obtain approval of the proposed message.
(NER441-20141017)

Traffic Impact Response Time

Provide a preferred method of notification and a designated person that is available 24 hours per day, 7 days per week, to respond to any event that impacts the free flow of traffic during non-working hours. The designated person shall respond within 2 hours of being notified by the engineer. Notification is defined as the first phone call/voice message, text message or e-mail. Impacts to traffic may include, but are not limited to, temporary barrier wall that has been moved from its original position, water ponding on the travel lanes, or temporary pavement deterioration. The contractor designated person needs to be able to promptly address the issues impacting traffic once notified by the engineer.

Failure to respond onsite and start implementation of corrective actions within 2 hours will result in the department issuing a deduction of \$500 per hour at the start of the third hour beyond the initial notification by the engineer. The department will administer the deduction for the road, or portion thereof, not being open to traffic under the Failing to Open Road to Traffic administrative item.

Opening Interchanges

Do not open the USH 10/STH 441 Oneida Street Interchange at the end of Stage 3C to traffic until the interchange is completed including lighting, signing, pavement marking, traffic signals, and all finishing items.

(NER441-20141017)

Private Driveways

Maintain access to all business driveways and private residence driveways on a minimum of crushed aggregate base course surface at all times except as follows. Close driveways for a maximum of 7 calendar days for grading and placement of base aggregate and concrete paving for each driveway (includes placement of storm sewer pipes). Notify each business and/or each residence on the property a minimum of 7 days prior to any driveway closures. A business with multiple driveways shall have one driveway open at all times.

(NER441-20141017)

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. On two lane two way roadways, install temporary speed limit signs on shoulders. When construction activities impede the location of a post-mounted regulatory speed limit sign, relocate the sign for maximum visibility to motorists. If work lasts less than 7 days, mount the regulatory speed limit sign on a portable sign support.

Post temporary regulatory speed limit signs in work zone only during continuous worker activity. During periods of no work activity or when the traffic controls are removed from the roadway, cover or remove the temporary speed limit signs.

Coordinate with Regional Traffic Section to identify the construction stages that have approved temporary regulatory speed zones documented in a Temporary Speed Zone Declaration. Project contact phone number: Susan Paulus at (414) 460-3409. Primary contact phone number: Rod Hamilton at (920) 366-4747, secondary contact number: Joshua Falk at (920) 366-8033.

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)

Speed limit reductions implemented under Project 1517-75-72 shall be maintained under this project. No additional speed limit reductions are anticipated for USH 10/STH 441.

Width Restrictions and Lane Closure System

Provide proper signing see construction detail- Lane Closure- Regulatory Speed Reduction without Barrier.

Roadside Hazard Protection During Construction

Conduct existing beam guard removal in several phases to allow timely installation of temporary barriers. Bridge pier columns and parapets within the clear zone are to remain protected at all times throughout construction. Removal of existing guardrail shall be done concurrently with the placement of the temporary concrete barrier or temporary barrier left in place so that the bridge pier columns/parapets remain protected at all times. Placement of new beamguard shall be completed to a point to provide protection for the pier columns/parapet before the temporary concrete barrier is removed. Railing connecting to structure parapet shall be in place prior to opening the lanes for traffic. Remaining beamguard shall be placed within 24 hours of the temporary concrete barrier being removed.

Construction Access

Restrict work on USH 10/STH 441 and USH 10/STH 441 Ramps within closed shoulders or closed lanes as allowed by the plans or engineer. Provide, utilize, and maintain temporary deceleration and acceleration lanes to/from the work zones. All construction access is subject to approval of the engineer.

During the period when lane closures are allowed on USH 10 and STH 441, access into the work zones from USH 10 and STH 441 can be made from the closed lane, subject to the approval of the engineer. Construction traffic from the work zone entering USH 10 and STH 441 must run out of the closed lane. Once construction traffic is within a lane closure, all construction traffic re-entering USH 10 and STH 441 must come to within 10 mph of posted speed before re-entering the live travel lane.

During the period when lane closures are not allowed on USH 10 and STH 441, access into the work zones from USH 10 and STH 441 must be made with a deceleration lane. The length of the deceleration lane is subject to review and approval by the engineer to ensure work zone traffic is exiting safely. Construction traffic from the work zone entering live traffic on USH 10 and STH 441 must use an acceleration lane with a minimum length of 1000-feet and must come to within 10 mph of posted speed before re-entering the live travel lane. The acceleration lane entrance to USH 10 and STH 441 cannot be placed within 1500-feet of an interchange ramp.

Construction traffic cannot travel counter-directional adjacent to USH 10, STH 441 and system ramp traffic except behind temporary concrete barrier.

Contractor access locations to the construction work zones are to be approved by agreement of the NE Region traffic and construction staff. Any locations that enter, cross, or impede railroad right-of-way require NE Region approval.

General Access

U-Turns at existing maintenance crossovers or temporary crossovers between USH 10 eastbound and westbound will be allowed when lane closures are in place for both inside eastbound and westbound passing lanes.

Construction operations affecting the traveling public's safety on USH 10, STH 441, and USH 10/STH 441 Ramps will not be allowed during snow and ice conditions, or any other adverse weather conditions, unless approved by the engineer.

Close one lane along entire project during hours when lane closures are required or provide 2-mile minimum spacing between lane closures. Coordinate lane closures between projects to ensure a continuous closure or 2-mile minimum spacing.

Delivery of equipment to USH 10 and STH 441 requiring the use of a semi-tractor and trailer shall only occur through the use of the deceleration/acceleration lanes or during those hours identified as non-peak work periods for use of a lane closure.

Ramp Access

Access on and off of service ramps will only be allowed if approved by the engineer. Crossing ramps with construction equipment/vehicles needs to be approved by the engineer. For crossing of service ramps with equipment that is not tire equipped, an engineer approved rolling road block, ramp closure, or flagging will be required during non-peak hours associated with the ramp area on USH 10/STH 441 and USH 10/STH 441 ramps.

(NER441-20150117)

Local Street Work Restrictions

Existing trees, street light poles, hydrants and other utility poles are to remain in place during construction unless otherwise noted in the plan. Conduct an on-site visit prior to bidding to determine any special measures required for proper clearance between the trees, hydrants and poles and the paving equipment.

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

Provide adequate temporary sidewalk and bridging between the curb and right-of-way line over freshly paved concrete or other obstructions in the sidewalk area, as directed by the engineer.

Inform property owners and tenants at least 7 days prior to removing a driveway approach that serves that property. Schedule sidewalk and driveway approach removal and replacement so that the time lapse between removal and replacement is minimal.

Do not close residential approaches or remove from service without at least 7 days prior notice given to the occupants of the premises to remove their vehicles prior to driveway removal or closing of the driveway approach access. If necessary, make other access arrangements, agreed to in writing and signed by the contractor and the property owner serviced by the driveway. Obtain approval from the engineer prior to alternating construction sequencing.

(NER441-20150117)

Structure N-70-121 Access

Do not access N-70-121 via Richards Drive, unless prior approval is given by the engineer.

Winter Maintenance

During winter months park equipment at a safe distance (at a minimum of 30 feet from the edge of travel lane, equipment may be parked in the median if it meets the minimum 30 feet from both traveled ways or if it is protected by concrete barrier) from the active travel lanes to prevent damage to equipment from snow plowing operations. Do not store equipment or materials within the work zone which may interfere with horizontal sight distances along STH 441, USH 10, or any ramps.

The contractor is responsible for plowing any areas which may need to be cleared of snow or ice to accommodate changes in traffic control and to facilitate construction staging during winter months.

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

Anticipated locations of traffic control devices are shown in the plans. Review the work site with the engineer for locations where additional area may be available to maximize lane and shoulder widths over winter months to aid in winter maintenance operations and to maximize snow storage area. Adjust traffic control devices in these areas.

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

(NER441-20141017)

Snowplowing

Winnebago County, Outagamie County, City of Menasha, City of Appleton and the Village of Fox Crossing will perform snow removal operations for freeway and local roads that are open to through traffic during construction. Provide for snow removal in those areas closed to through traffic as required to facilitate safe construction activities and to provide access to properties within the work area.

(NER441-20141017)

Lane/Ramp Closures

Maintain the amount of lanes specified during work on each roadway unless otherwise approved by the engineer. Each hour shown in the lane requirement tables is defined as a 60 minute period (i.e.: Hour 7 is the period from 7:00 to 7:59).

Nightly full closures of USH 10/STH 441 and service ramps will be allowed with the engineer's approval during approved hours for traffic switches. 10 calendar days advanced notice is required.

PCMSs shall be placed 7 days in advance of any full closure to notify the public.

Submit any traffic control change request to the engineer at least 72 hours prior to an actual traffic control change. A request does not constitute approval.

| Freeway/Expressway Lane Requirements | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|--|---|---|---|---|---|---|---|---|---|----|----|----|---|---|---|---|---|---|---|---|---|----|----|
| Limits: | Eastbound/Northbound USH 10/STH 441: IH 41 – CTH P Overpass | | | | | | | | | | | | | | | | | | | | | | | |
| | AM | | | | | | | | | | | | PM | | | | | | | | | | | |
| From Hour to Hour | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Monday through Thursday | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Fridays | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Saturdays | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sundays | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Legend | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Provide at least one through freeway lane open in each direction of travel | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Open all USH 10/STH 441 lanes to travel | | | | | | | | | | | | | | | | | | | | | | | |
| | Full closure of USH 10/STH 441 allowed | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |

| Freeway/Expressway Lane Requirements | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---|---|---|---|---|---|---|---|---|----|-----------|----|---|---|---|---|---|---|---|---|---|----|----|
| Limits: | Westbound/Southbound USH 10/STH 441: CTH P Overpass – IH 41 | | | | | | | | | | | | | | | | | | | | | | | |
| | AM | | | | | | | | | | | PM | | | | | | | | | | | | |
| From Hour to Hour | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Monday through Thursday | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Fridays | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Saturdays | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sundays | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Legend | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Provide at least one through freeway lane open in each direction of travel | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Open all USH 10/STH 441 lanes to travel | | | | | | | | | | | | | | | | | | | | | | | |
| | Full closure of USH 10/STH 441 allowed | | | | | | | | | | | | | | | | | | | | | | | |

| Freeway/Expressway Lane Requirements | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---|---|---|---|---|---|---|---|---|----|-----------|----|---|---|---|---|---|---|---|---|---|----|----|
| Limits: | Eastbound/Northbound USH 10/STH 441: CTH P Overpass – CTH KK | | | | | | | | | | | | | | | | | | | | | | | |
| | AM | | | | | | | | | | | PM | | | | | | | | | | | | |
| From Hour to Hour | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Monday through Thursday | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Fridays | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Saturdays | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sundays | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Legend | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Provide at least one through freeway lane open in each direction of travel | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Open all USH 10/STH 441 lanes to travel | | | | | | | | | | | | | | | | | | | | | | | |
| | Full closure of USH 10/STH 441 allowed | | | | | | | | | | | | | | | | | | | | | | | |

| Freeway/Expressway Lane Requirements | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|--|---|---|---|---|---|---|---|---|---|----|----|----|---|---|---|---|---|---|---|---|---|----|----|
| Limits: | Westbound/Southbound USH 10/STH 441: CTH KK – CTH P Overpass | | | | | | | | | | | | | | | | | | | | | | | |
| | AM | | | | | | | | | | | | PM | | | | | | | | | | | |
| From Hour to Hour | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Monday through Thursday | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Fridays | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| Saturdays | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sundays | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Legend | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Provide at least one through freeway lane open in each direction of travel | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Open all US 10/STH 441 lanes to travel | | | | | | | | | | | | | | | | | | | | | | | |
| | Full closure of USH 10/STH 441 allowed | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |

| Interchange Requirements | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|--|---|---|---|---|---|---|---|---|---|----|----|----|---|---|---|---|---|---|---|---|---|----|----|--|
| Limits: | Midway Road Interchange Ramps Allowable Closures | | | | | | | | | | | | | | | | | | | | | | | | |
| | AM | | | | | | | | | | | | PM | | | | | | | | | | | | |
| From Hour to Hour | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
| Northwest Ramp | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | |
| Southwest Ramp | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | |
| Southeast Ramp | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | |
| Northeast Ramp | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| Legend | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Open all ramp lanes to travel | | | | | | | | | | | | | | | | | | | | | | | | |
| C | Full closure of ramps allowed | | | | | | | | | | | | | | | | | | | | | | | | |

REMARKS:

Ramp and lane closures shown on tables are only allowed as specified in the Traffic Overview or as approved by the engineer.

Project 1517-75-72 will be opening and closing the Midway Road Interchange Ramps

Northwest Ramp

- Closed during all stages

Southwest Ramp

- Closed long term after the Racine Road to USH 10 Westbound/STH 441
- Southbound Ramp is open

Southeast Ramp

- Closed during all stages

Northeast Ramp

- Closed long term until Summer 2018

| Interchange Requirements | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|---|---|---|---|---|---|---|---|----|----|----|---|---|---|---|---|---|---|---|---|----|----|
| Limits: | Appleton Road Interchange Ramps Allowable Overnight Closures | | | | | | | | | | | | | | | | | | | | | | | |
| | AM | | | | | | | | | | | | PM | | | | | | | | | | | |
| From Hour to Hour | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Northeast Ramp | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | |
| Northwest Ramp | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | |
| Southwest Ramp | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | |
| Southeast Ramp | C | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Legend | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Open all ramp lanes to travel | | | | | | | | | | | | | | | | | | | | | | | |
| C | Full closure of ramps allowed | | | | | | | | | | | | | | | | | | | | | | | |
| REMARKS: | | | | | | | | | | | | | | | | | | | | | | | | |
| Ramp and lane closures shown on tables are only allowed as specified in the Traffic Overview or as approved by the engineer. | | | | | | | | | | | | | | | | | | | | | | | | |
| Northeast Ramp | | | | | | | | | | | | | | | | | | | | | | | | |
| ○ Nightly closures during Stage 3A and 3C | | | | | | | | | | | | | | | | | | | | | | | | |
| ○ One full weekend closure allowed during stage 3A | | | | | | | | | | | | | | | | | | | | | | | | |
| ○ To remain open during all other stages | | | | | | | | | | | | | | | | | | | | | | | | |
| Northwest Ramp | | | | | | | | | | | | | | | | | | | | | | | | |
| ○ Complete closure during Stage 4A | | | | | | | | | | | | | | | | | | | | | | | | |
| ○ To remain open during all other stages | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwest Ramp | | | | | | | | | | | | | | | | | | | | | | | | |
| ○ To remain open during all stages | | | | | | | | | | | | | | | | | | | | | | | | |
| Southeast Ramp | | | | | | | | | | | | | | | | | | | | | | | | |
| ○ Nightly closures during Stage 4A | | | | | | | | | | | | | | | | | | | | | | | | |
| ○ One full weekend closure allowed during stage 4A | | | | | | | | | | | | | | | | | | | | | | | | |
| ○ Complete closure during Stage 4B | | | | | | | | | | | | | | | | | | | | | | | | |
| ○ To remain open during all other stages | | | | | | | | | | | | | | | | | | | | | | | | |

| Interchange Requirements | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|---|---|---|---|---|---|---|---|----|----|----|---|---|---|---|---|---|---|---|---|----|----|
| Limits: | Oneida Street Interchange Ramps Allowable Overnight Closures | | | | | | | | | | | | | | | | | | | | | | | |
| | AM | | | | | | | | | | | | PM | | | | | | | | | | | |
| From Hour to Hour | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Daily Northeast Ramp | C | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | |
| Daily Northwest Ramp | C | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | |
| Mon. through Thurs. Southwest Ramp | C | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | C | |
| Fridays Southwest Ramp | C | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | C | |
| Sat. and Sun. Southwest Ramp | C | C | C | C | C | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | C | C | |
| Mon. through Thur. Southeast Ramp | C | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | C | C | |
| Fridays Southeast Ramp | C | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | C | |
| Sat. and Sun. Southeast Ramp | C | C | C | C | C | C | C | C | C | C | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | C | C | C | C | C | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Legend | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Open all ramp lanes to travel | | | | | | | | | | | | | | | | | | | | | | | |
| C | Full closure of ramps allowed | | | | | | | | | | | | | | | | | | | | | | | |
| REMARKS: | | | | | | | | | | | | | | | | | | | | | | | | |
| Ramp and lane closures shown on tables are only allowed as specified in the Traffic Overview or as approved by the engineer. | | | | | | | | | | | | | | | | | | | | | | | | |
| Northeast Ramp | | | | | | | | | | | | | | | | | | | | | | | | |
| o Complete closure during stages 3A, 3B, and 3C | | | | | | | | | | | | | | | | | | | | | | | | |
| o To remain open during all other stages | | | | | | | | | | | | | | | | | | | | | | | | |
| Northwest Ramp | | | | | | | | | | | | | | | | | | | | | | | | |
| o Complete closure during stages 3A, 3B, and 3C | | | | | | | | | | | | | | | | | | | | | | | | |
| o To remain open during all other stages | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwest Ramp | | | | | | | | | | | | | | | | | | | | | | | | |
| o Complete closure during stages 3B, 3C, and 4B | | | | | | | | | | | | | | | | | | | | | | | | |
| o One full weekend closure allowed during Stage 4A | | | | | | | | | | | | | | | | | | | | | | | | |
| o To remain open during all other stages | | | | | | | | | | | | | | | | | | | | | | | | |
| Southeast Ramp | | | | | | | | | | | | | | | | | | | | | | | | |
| o 5 consecutive day closure allowed during Stage 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| o Nightly closures allowed during Stage 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| o Complete closure during stages 3B, 3C, and 4A | | | | | | | | | | | | | | | | | | | | | | | | |
| o To remain open during all other stages | | | | | | | | | | | | | | | | | | | | | | | | |

7.2 Holiday and Other Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying USH 10/STH 441 and System Interchange ramp 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:

Memorial Day:

- From noon Friday, May 25, 2018 to 5:00 AM Tuesday, May 29, 2018;
- From noon Friday, May 24, 2019 to 5:00 AM Tuesday, May 28, 2019;

4th of July:

- From noon Friday, June 29, 2018 to 5:00 AM Monday, July 9, 2018;
- From noon Wednesday, July 3, 2019 to 5:00 AM Monday, July 8, 2019;

Labor Day:

- From noon Friday, August 31, 2018 to 5:00 AM Tuesday, September 4, 2018;
- From noon Friday, August 30, 2019 to 5:00 AM Tuesday, September 3, 2019;

Thanksgiving:

- From noon Wednesday, November 21, 2018 to 6:00 AM Monday, November 26, 2018;
- From noon Wednesday, November 27, 2019 to 6:00 AM Monday, December 2, 2019;

Christmas:

- From noon Friday, December 21, 2018 to 6:00 AM Wednesday, December 26, 2018;

New Year's:

- From noon Friday, December 28, 2018 to 6:00 AM Wednesday, January 2, 2019;

Maintain two lanes on USH 10/STH 441 during all Lambeau Field events with an expected attendance of more than 30,000 from 5 hours prior to the event until 5 hours after the event.

Prior to preparing bids, verify the dates of each festival, game, or event listed to obtain current dates for work restrictions.

(NER441-20141017)

7.3 Ingress and Egress.

Supplement standard spec 107.9 with the following:

Provide and maintain safe and adequate ingress and egress to and from local streets, private points of access, and other establishment at existing or new access points.

Provide signs, barricades, flaggers, and/or other appurtenances for the maintenance and protection of traffic. Construction operations shall be conducted to ensure a minimum of delay to traffic.

Stopping or slowing traffic on the freeway shall not be permitted. Stopping traffic on local streets will not be permitted for more than 1 minute from 6:00 AM to 9:00 AM, and from 3:00 PM to 6:00 PM on weekdays; and 2 minutes at other times unless specifically authorized. All traffic control items used for establishing ingress and egress points are incidental to the work.

(NER10/441-20130117)

7.4 Public Convenience and Safety.

Revise standard spec 107.8(6) as follows:

Check for and comply with local ordinances governing the hours of operation of construction equipment.

Contact Paula Vandehey, (920) 832-6474, at the City of Appleton to request a written waiver for hours of operation of construction equipment. Provide the approved waiver request to the engineer.

Contact Randy Gallow, (920) 720-7110, at the Village of Fox Crossing to request a written waiver for hours of operation of construction equipment. Provide the approved waiver request to the engineer.

Contact Tim Montour, (920) 967-3612, at the City of Menasha to request a written waiver for hours of operation of construction equipment. Provide the approved waiver request to the engineer.

Delete standard spec 107.8 (4) and replace with the following:

Notify the following organizations and departments at least 72 hours before road closures or detours are put into effect:

| | |
|---|----------------|
| Wisconsin State Patrol | (920) 929-3700 |
| Calumet County Sheriff's Department | (920) 849-2335 |
| Winnebago County Sheriff's Department | (920) 236-7334 |
| Village of Fox Crossing Fire Department | (920) 720-7125 |
| Village of Fox Crossing Police Department | (920) 720-7109 |
| Village of Fox Crossing School District | (920) 967-1400 |
| City of Appleton Fire Department | (920) 832-5810 |
| City of Appleton Police Department | (920) 832-5500 |
| City of Appleton School District | (920) 832-6161 |
| City of Menasha Fire Department | (920) 967-5125 |
| City of Menasha Police Department | (920) 967-3500 |
| City of Menasha School District | (920) 967-1400 |

The Winnebago County Sheriff's Department 911 dispatches all area police, fire and ambulance services, and will relay any notification given by the contractor in the event of an emergency.

(NER441-20141017)

7.5 Traffic Control.

After written notice to proceed, and prior to Final Acceptance of the work, assist with maintenance of existing roadways and bridges as specified in standard spec 104.6.1. This assistance may include performance of work covered under pay items or accommodating local repair forces within the work zones. Maintain all newly constructed work as specified in standard spec 104.6.1. Various pay items may be required to maintain the freeway and local streets during construction.

Perform this work according to the requirements of standard spec 643, and as shown on the plans or as approved by the engineer, except as hereinafter modified.

Submit to engineer for approval a detailed traffic control plan for any changes to the proposed traffic control detail as shown on the plans. Submit this plan ten days prior to the preconstruction conference.

Provide 24 hours-a-day availability of equipment and forces to expeditiously restore lights, signs, or other traffic control devices that are damaged or disturbed. The cost to maintain and restore the above items shall be considered incidental to the item as bid and no additional payment will be made therefore.

Supply the name and telephone number of a local contact person for traffic control repair before starting work.

Have available at all times sufficient experienced personnel to promptly install, remove and reinstall the required traffic control devices to route traffic during the construction operations.

The turning of traffic control devices when not in use to obscure the message will not be allowed under this contract.

Obtain prior approval from the engineer for the location of egress and ingress for construction vehicles to prosecute the work.

Cover existing signs which conflict with traffic control as directed by the engineer.

Conduct operations in such a manner that causes the least interference and inconvenience to the free flow of vehicles on the roadways. This includes the following:

- a. Do not park or store any vehicle, piece of equipment, or construction materials on the right-of-way without approval of the engineer.

- b. All construction vehicles and equipment entering or leaving live traffic lanes shall yield to through traffic and shall enter live traffic within 10 mph of the posted speed limit.
- c. Equip all vehicles and equipment entering or leaving the live traffic lanes with a hazard identification beam (flashing yellow signal) capable of being visible on a sunny day when viewed without the sun directly on or behind the device from a distance of 1000 feet. Activate the beam when merging into or exiting a live traffic lane.
- d. Provide a minimum seven working day notice to the business management personnel prior to entering or working within the TLE area.

Do not disturb, remove or obliterate any traffic control signs, advisory signs, shoulder delineators or beam guard in place along the traveled roadways without the approval of the engineer. Immediately repair or replace any damage done to the above during the construction operations at contractor expense.

The traffic requirements are subject to change at the direction of the engineer in the event of an emergency.
(NER441-20141017)

7.6 Concrete Barrier Temporary Precast.

Perform this work according to standard spec 603, these special provisions, and as hereinafter provided.

Concrete Barrier Temporary Precast shall be 12'-6" in length. Concrete Barrier Temporary Precast 10'-0" will not be allowed.

The barrier must be anchored when used on edge of bridge decks or locations where the drop-off exceeds two-feet, is steeper than 3H:1V and is less than 4-feet from the side of the barrier closest to the drop off. The system must be anchored as shown in the standard detail drawing.

7.7 Traffic Control Surveillance and Maintenance 1517-75-73, Item SPV.0045.200; Traffic Control Surveillance and Maintenance 1517-75-79, Item SPV.0045.201.

A Description

This special provision describes providing personnel to inspect and maintain the traffic control devices, furnished, and installed, in proper condition.

B Materials

Provide one person, called the traffic control specialist, all necessary vehicles, equipment, tools, and repair materials. Provide other personnel to accomplish the inspection and maintenance if needed.

C Construction

Inspection and maintenance includes all traffic control signs or devices included in the contract, including those on detour routes. Begin when the first traffic control sign or device is put into operation and end when the last traffic control sign or device is removed from operation.

1. Ensure that the traffic control specialist inspects the traffic control signs and devices at least twice each workday and once each non-workday with at least one of the daily inspections during daytime. Separate inspections done on workdays by at least 8 hours or the amount of time from the beginning to the end of that day's work operations, whichever is less. During each inspection, clean, repair, or replace each traffic control sign or device not performing as intended, as necessary.
2. Ensure that the traffic control specialist inspects each reflective traffic control sign or device at least once each week during hours of darkness. View the signs and devices using low beam vehicle headlights to ensure reflectorization is unimpaired. Clean, repair, or replace each reflectorized traffic control sign or device not performing as intended, as necessary, before sunset of the next calendar day, or as the engineer directs otherwise.
3. Ensure that the traffic control specialist meets once each workday with the department representative responsible for traffic control on the project to discuss possible problems with the traffic control.
4. Ensure that the traffic control specialist submits a written report weekly to the engineer documenting both daytime and nighttime inspections.
5. Make the control specialist, or other contractor-designated person, available 24 hours per day, 7 days per week to clean, repair, or replace traffic control devices not performing as intended throughout the period traffic control signs and devices are operating under this contract. Provide to the engineer, the County Sheriff, and the State Patrol Region Headquarters responsible for that county the telephone number to contact the control specialist or other contractor-designated person. Ensure that the control specialist, or other designated person, is able to reach any location within the contract limits, or on detour routes, within 2 hours of being contacted, and can promptly accomplish the necessary cleaning, repair, or replacement.

D Measurement

The department will measure the Traffic Control Surveillance and Maintenance bid items by the day, acceptably completed. The measured quantity will equal the number of calendar days from the date the first traffic control sign or device is placed into operation through the date the last traffic control sign or device is removed from operation.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0045.200 | Traffic Control Surveillance and Maintenance 1517-75-73 | DAY |
| SPV.0045.201 | Traffic Control Surveillance and Maintenance 1517-75-79 | DAY |

Payment for the Traffic Control Surveillance and Maintenance bid items is full compensation for providing all labor, materials, tools, equipment, vehicles, and incidentals, including reports and telephone charges, necessary to complete the work; and for partially or fully covering or uncovering signs not paid separately under the Traffic Control Covering Signs bid items. The department will not pay for replaced traffic control signs or devices under this bid item; replacement is incidental to the respective contract bid item or items.

(NER441-20170713)

7.8 Maintenance and Removal of Crash Cushions Temporary Left In Place by Others, Item SPV.0060.200.

A Description

This special provision describes maintaining and removing temporary crash cushions left in place by others according to standard spec 614.

The crash cushion left in place by others becomes the property of the contractor upon notice to proceed.

B Materials

Furnish any replacement materials for the temporary crash cushions left in place by others according to the pertinent requirements of standard spec 614.2.

C Construction

Maintain and remove the temporary crash cushion according to standard spec 614.3.4.

D Measurement

The department will measure Maintenance and Removal of Crash Cushions Temporary Left In Place by Others 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.0060.200 | Maintenance and Removal of Crash Cushions Temporary Left in Place by Others | EACH |

Payment is full compensation for maintaining and removing the crash cushions; removing and disposing of all materials.
(NER441-20141017)

7.9 Maintain Traffic Control Signs Left In Place, Item SPV.0060.201.

A Description

This special provision describes receiving existing traffic control signs which have been left in place under a previous contract. Assume ownership and responsibility of the traffic control signs upon the contract's Notice to Proceed. The location of these traffic control signs are shown in the Traffic Control plans.

The contractor shall ultimately remove the traffic control signs left in place.

B Materials

Materials left in place were accepted under Projects 1517-07-80 (East of Racine Road overpass) and 1517-75-72, and documentation can be found in material records for the respective project IDs.

C Construction

Maintain, move and remove traffic control signs according to standard spec 643 as approved for use by the department per material substitution request for project 1517-75-73.

D Measurement

The department will measure Maintain Traffic Control Signs Left in Place by each individual unit, 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.0060.201 | Maintain Traffic Control Signs Left in Place | EACH |

Payment is full compensation for receiving, maintaining, and removing traffic control signs left in place.

7.10 Maintain Traffic Control Drums Left In Place, Item SPV.0060.202.

A Description

This special provision describes receiving existing traffic control drums which have been left in place under a previous contract. Assume ownership and responsibility of the traffic control drums upon the contract's Notice to Proceed. The location of these traffic control drums are shown in the Traffic Control plans.

The contractor shall ultimately remove the traffic control drums left in place.

B Materials

Materials left in place were accepted under Projects 1517-07-80 (East of Racine Road overpass) and 1517-75-72, and documentation can be found in material records for the respective project IDs.

C Construction

Maintain, move and remove traffic control drums according to standard spec 643 as approved for use by the department per material substitution request for project 1517-75-73.

D Measurement

The department will measure Maintain Traffic Control Drums Left in Place by each individual unit, 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.0060.202 | Maintain Traffic Control Drums Left in Place | EACH |

Payment is full compensation for receiving, maintaining, and removing traffic control drums left in place.

7.11 Maintain Traffic Control Barricades Left In Place, Item SPV.0060.203.**A Description**

This special provision describes receiving existing traffic control barricades which have been left in place under a previous contract. Assume ownership and responsibility of the traffic control barricades upon the contract's Notice to Proceed. The location of these traffic control barricades are shown in the Traffic Control plans.

The contractor shall ultimately remove the traffic control barricades left in place.

B Materials

Materials left in place were accepted under Projects 1517-07-80 (East of Racine Road overpass) and 1517-75-72, and documentation can be found in material records for the respective project IDs.

C Construction

Maintain, move and remove traffic control barricades according to standard spec 643 as approved for use by the department per material substitution request for project 1517-75-73.

D Measurement

The department will measure Maintain Traffic Control Barricades Left in Place by each individual unit, 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.0060.203 | Maintain Traffic Control Barricades Left in Place | EACH |

Payment is full compensation for receiving, maintaining, and removing traffic control barricades left in place.

7.12 Maintain Traffic Control Warning Lights Type A Left In Place, Item SPV.0060.204.**A Description**

This special provision describes receiving existing traffic control warning lights type A which have been left in place under a previous contract. Assume ownership and responsibility of the traffic control warning lights type A upon the contract's Notice to Proceed. The location of these traffic control warning lights type A are shown in the Traffic Control plans.

The contractor shall ultimately remove the traffic control warning lights type A left in place.

B Materials

Materials left in place were accepted under Projects 1517-07-80 (East of Racine Road overpass) and 1517-75-72, and documentation can be found in material records for the respective project IDs.

C Construction

Maintain, move and remove traffic control warning lights type A according to standard spec 643 as approved for use by the department per material substitution request for project 1517-75-73.

D Measurement

The department will measure Maintain Traffic Control Warning Lights Type A Left in Place by each individual unit, 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.0060.204 | Maintain Traffic Control Warning Lights Type A Left in Place | EACH |

Payment is full compensation for receiving, maintaining, and removing traffic control warning lights type A left in place.

7.13 Maintain Traffic Control Warning Lights Type C Left In Place, Item SPV.0060.205.

A Description

This special provision describes receiving existing traffic control warning lights type C which have been left in place under a previous contract. Assume ownership and responsibility of the traffic control warning lights type C upon the contract's Notice to Proceed. The location of these traffic control warning lights type C are shown in the Traffic Control plans.

The contractor shall ultimately remove the traffic control warning lights type C left in place.

B Materials

Materials left in place were accepted under Projects 1517-07-80 (East of Racine Road overpass) and 1517-75-72, and documentation can be found in material records for the respective project IDs.

C Construction

Maintain, move and remove traffic control warning lights type C according to standard spec 643 as approved for use by the department per material substitution request for project 1517-75-73.

D Measurement

The department will measure Maintain Traffic Control Warning Lights Type C Left in Place by each individual unit, 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.0060.205 | Maintain Traffic Control Warning Lights Type C Left in Place | EACH |

Payment is full compensation for receiving, maintaining, and removing traffic control warning lights type C left in place.

7.14 Moving Traffic Control Signs Fixed Message, Item SPV.0060.206.

A Description

This special provision describes removing and relocating existing traffic control signs fixed message, as shown on the plans.

B (Vacant)**C Construction**

Remove existing signs fixed message and all posts used to mount the signs. Reassemble removed signs and posts in the location shown on the plans. Erect all moved signs according to standard spec 643.3.8.3. Do not reinstall signage until the engineer approves condition of moved posts, signage, or mounting hardware.

Replacement of all posts, signs, or mounting hardware damaged during the removal or moving operations is incidental to the item.

D Measurement

The department will measure Moving Traffic Control Signs Fixed Message as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0060.206 | Moving Traffic Control Signs Fixed Message | EACH |

Payment is full compensation for removing, transporting, assembly, and erection of the signs fixed message; including replacement of damaged material.

7.15 Maintain and Remove Temporary Thrie Beam Connection Left In Place, Item SPV.0060.207.**A Description**

This special provision describes receiving existing temporary thrie beam connections which have been left in place under a previous contract. Assume ownership and responsibility of the temporary thrie beam connections upon the contract's Notice to Proceed. The location of these temporary thrie beam connections are shown in the Traffic Control plans.

The contractor shall ultimately remove the temporary thrie beam connections left in place.

B Materials

Materials left in place were accepted under Projects 1517-07-80 (East of Racine Road overpass) and 1517-75-72, and documentation can be found in material records for the respective project IDs.

C Construction

Maintain, move, and remove temporary thrie beam connections according to standard spec 614 as approved for use by the department per material substitution request for project 1517-75-73.

D Measurement

The department will measure Maintain and Remove Temporary Thrie Beam Connections Left in Place by each individual unit, 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.0060.207 | Maintain and Remove Temporary Thrie Beam Connection Left In Place | EACH |

Payment is full compensation for receiving, maintaining, and removing temporary thrie beam connections left in place.

7.16 Maintain Delineators Left In Place, Item SPV.0060.208.**A Description**

This special provision describes receiving existing delineators which have been left in place under a previous contract. Assume ownership and responsibility of the delineators upon the contract's Notice to Proceed. The location of these delineators are shown in the Traffic Control plans.

The contractor shall ultimately remove the delineators left in place.

B Materials

Materials left in place were accepted under Project 1517-75-88 and documentation can be found in material records for the respective project IDs.

C Construction

Maintain, move, and remove delineators according to standard spec 633 as approved for use by the department per material substitution request for project 1517-75-73.

D Measurement

The department will measure Maintain Delineators Left in Place by each individual unit, 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.0060.208 | Maintain Delineators Left In Place | EACH |

Payment is full compensation for receiving, maintaining, and removing delineators left in place.

7.17 Maintain Traffic Control Signs Fixed Message Left In Place, Item SPV.0060.209.

A Description

This special provision describes receiving existing traffic control signs fixed message which have been left in place under a previous contract. Assume ownership and responsibility of the traffic control signs fixed message upon the contract's Notice to Proceed. The location of these traffic control signs fixed message are shown in the Traffic Control plans.

The contractor shall ultimately remove the traffic control signs fixed message left in place.

B Materials

Materials left in place were accepted under Projects 1517-07-80 (East of Racine Road overpass) and 1517-75-72, and documentation can be found in material records for the respective project IDs.

C Construction

Maintain, move, and remove delineators according to standard spec 643 as approved for use by the department per material substitution request for project 1517-75-73.

D Measurement

The department will measure Maintain Traffic Control Signs Fixed Left in Place by each individual unit, 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.0060.209 | Maintain Traffic Control Signs Fixed Left In Place | EACH |

Payment is full compensation for receiving, maintaining, and removing traffic control signs fixed left in place.

7.18 Maintain and Remove Concrete Barrier Temporary Precast Left In Place, Item SPV.0090.200.

A Description

This special provision describes receiving existing concrete barrier temporary precast including any attached temporary glare screen. The temporary barrier has been left in place under a previous contract. Assume ownership and responsibility of the temporary barrier and temporary glare screen. Upon notice to proceed, the contractor shall assume responsibility, and maintain the concrete barrier temporary precast left in place for the duration of the contract. The location of this temporary barrier is shown in the Traffic Control plans. The contractor shall ultimately remove the concrete barrier temporary precast left in place.

B Materials

The Concrete Barrier Temporary Precast left in place from Project 1517-75-72 and Project 1517-75-88 is Concrete Barrier Temporary Precast per standard spec 603 as approved for use by the department per material substitution request for Project 1517-75-73. Materials left in place were accepted under Projects 1517-07-80, 1517-75-88, and 1517-75-72, and documentation can be found in material records for the respective project IDs.

C Construction

Maintain, move and remove temporary barrier according to standard spec 603.

D Measurement

The department will measure Maintain and Remove Concrete Barrier Temporary Precast Left In Place by the linear foot of concrete barrier temporary, acceptably maintained. Moving of temporary barrier, if necessary, will be paid for under their respective standard bid item(s) Concrete Barrier Temporary Precast Delivered or Concrete Barrier Temporary Precast Installed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0090.200 | Maintain and Remove Concrete Barrier Temporary Precast Left In Place | LF |

Payment is full compensation for receiving and maintaining concrete barrier temporary precast including any attached temporary glare screen or delineators; removing and disposing of all materials.

7.19 Concrete Barrier Temporary Precast Anchoring, Item SPV.0090.201.**A Description**

This special provision describes anchoring temporary concrete barrier. Perform this work according to applicable portions of standard spec 603 and as hereinafter provided.

B (Vacant)**C Construction**

Perform this work according to standard spec 603.3.2.1, the plans, and as hereinafter provided.

Under the Concrete Barrier Temporary Precast Anchoring bid item, furnish, deliver, and install anchors at the locations shown in the plans, as required by the project conditions, or as directed by the engineer. Install anchors during the initial installation of the temporary

concrete barrier and during any subsequent reinstallations of the temporary concrete barrier as required.

Remove any anchoring during barrier removal and fill remaining holes with epoxy.

D Measurement

The department will measure the Concrete Barrier Temporary Precast Anchoring by the linear foot acceptably completed, measured as the linear feet of barrier initially installed or reinstalled. The department will not measure anchoring made solely to accommodate the contractor's means and methods.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0090.201 | Concrete Barrier Temporary Precase Anchoring | LF |

Payment is full compensation for furnishing, delivering, and installing anchoring devices; for removal of any anchoring devices and filling holes with epoxy.

8. Utilities.

8.1 Utilities – Project 1517-75-73.

- (1) This contract comes under the provision of Administrative Code Chapter Trans 220. 107-065 (20080501)
- (2) Additional detailed information regarding the location of vacated, relocated, and/or removed utility facilities is available in the work plan provided by each utility company or on the permits issued to them. View these documents at the region WisDOT office during normal working hours.
- (3) **AAMFON** maintains a **communications** facility that crosses under STH 441 approximately 100 feet west of the mainlines bridges that cross over Oneida Street. This facility was previously relocated, and no conflicts are anticipated.
- (4) **AT&T Wisconsin** maintains an underground **communications** facility along Midway Road through the project limits. This facility has been relocated to the project utility corridor that crosses STH 441 south of Midway Road, no conflicts are anticipated.
- (5) AT&T also maintains an underground communication facility that crosses under STH 441 approximately 125 feet west of the mainlines bridges that cross over Oneida Street. This facility was previously relocated, and no conflicts are anticipated.
- (6) **ATC Management, Inc** (ATC) maintains an overhead electric **transmission** facility along the south side of STH 441 from the beginning of the project to approximately

- Station 315WB+00, where the facility crosses STH 441 to the north side and continues north and out of the project limits.
- (7) At Station 251EB+00 an ATC overhead electric facility cross perpendicularly over the proposed mainline. This facility was previously relocated for this project, no conflicts are anticipated.
 - (8) At Station 315WB+00 LT the ATC line cross perpendicularly over proposed noise wall N-70-131. There is approximately 38-feet of separation from the bottom of noise wall to the 138 kV electric line maintained by ATC. No conflict is anticipated.
 - (9) **Charter Communications** maintains an underground **communications** facility that crosses STH 441 at approximately Station 305WB+00. This facility was recently upgraded and relocated to avoid a conflict with noise wall N-70-130, therefore no conflicts are anticipated with this facility.
 - (10) **Fox Crossing Utilities** maintains a **sanitary sewer** facility between Schindler Ct. and STH 441 that is in conflict with the proposed Storm Water Pond 5. Fox Crossing Utilities plans to install a new sanitary sewer along the east and north side of the Storm Water Pond 5 and discontinue the existing 8-inch facility in-place. The section of existing 8-inch sanitary sewer located within the proposed pond will not be filled with slurry. Fox Crossing Utilities plans to complete this work prior to construction.
 - (11) **Menasha Utilities** maintains an overhead and underground **electric** facility along Midway Road through the project limits. This facility has been relocated to the project utility corridor that crosses STH 441 south of Midway Road, no conflicts are anticipated.
 - (12) Menasha Utilities also maintains an underground electric facility that crosses STH 441 at approximately Station 304WB+00. This facility includes a cabinet on the south side of WIS 441 with conduit heading north and south out of it, no conflicts are anticipated.
 - (13) **TDS Metrocom** maintains an underground **communications** facility that runs along the east side of Appleton Road and crosses under STH 441 at approximately Station 291+90 EB. No conflicts are anticipated.
 - (14) **US Signal Company, LLC** maintains an underground **communications** facility that runs along the west side of Oneida Street and crosses under STH 441 approximately 100 feet west of the STH 441 mainline bridges that cross over Oneida Street. This facility was previously relocated, and no conflicts are anticipated.
 - (15) **WE Energies** maintains an underground **gas** facility that conflicts with the mainline ditching at Station 302WB+80, 110 feet LT. WE Energies plans to discontinue this facility prior to construction.
 - (16) WE Energies maintains an underground gas facility that crosses STH 441 at approximately Station 395WB+85, no conflicts are anticipated with this facility.

- (17) **WE Energies** maintains an underground and overhead **electric** facility that runs along Midway Road and conflicts with the STH 441 bridges over Midway Road. This facility has been relocated to the project utility corridor that crosses STH 441 south of Midway Road. No conflicts are anticipated.
- (18) WE Energies has an overhead and underground electric facility that runs along the west side of Oneida Street. This facility crosses under STH 441 approximately 100 feet west of the mainlines bridges that cross over Oneida Street. This is a previously relocated facility, and no conflicts are anticipated.
- (19) WE Energies has an overhead electric facility that crosses STH 441 at approximately Station 396WB+30, being just outside the project; no conflicts are anticipated.
- (20) The following utility owners have facilities within the project area; however, no adjustments are anticipated:
 - a. **City of Appleton – Water**
 - b. **City of Appleton – Sanitary**
 - c. **Fox Crossing Utilities – Water**

8.2 Utilities – Project 1517-75-79.

- (1) This contract comes under the provision of Administrative Code Chapter Trans 220. 107-065 (20080501)
- (2) Additional detailed information regarding the location of vacated, relocated, and/or removed utility facilities is available in the work plan provided by each utility company or on the permits issued to them. View these documents at the region WisDOT office during normal working hours.
- (3) **AAMFON** maintains an overhead **communication** facility along the west side of Oneida Street through the project limits. Once We Energies completes work on their transmission and distribution facilities near Station 68OSB+90 LT, AAMFON will need to connect to the new distribution pole at this location. This work is dependent on the completion of the We Energies pole installation, and will require one day to complete.
- (4) **AT&T Wisconsin** maintains an underground **communications** facility throughout the project area; no conflict anticipated.
- (5) AT&T has an underground communication facility that runs along the west side of Oneida Street from the south project limits to a manhole at Station 48OSB+00 LT. This facility also has a crossing of Oneida Street at approximately Station 44OSB+30.
- (6) AT&T has an underground communications facility that begin at a manhole located at Station 48OSB+00 LT, and runs within Oneida Streets proposed median and

northbound lanes until approximation Station 53OSB+20 RT where the facility turns west crossing Oneida Street and to a manhole just outside of the project.

- (7) AT&T has an underground communications facility that crossing WIS 441 west of the Oneida Street bridges and continues north along the west side of Oneida Street to the north project limits.
- (8) **ATC Management, Inc** maintains an overhead **electric transmission** line that crosses Oneida Street at approximately Station 68OSB+25. This facility was relocated previously, and no further conflicts are anticipated.
- (9) **Charter Communications** maintains an overhead **communications** facility along the west side of Oneida Street on WE Energies poles from the south project limits to Meadow Grove Drive where it heads east crossing Oneida Street. No conflict is anticipated.
- (10) **City of Appleton** maintains a **sanitary sewer** facility along the northbound lanes of Oneida Street north of STH 441. Three sanitary manholes need to be adjusted during construction to match proposed project grades. These manhole adjustments will be completed by the Contractor in accordance with bid item: SPV.0060.650 ADJUSTING SANITARY MANHOLE COVERS.
- (11) **City of Appleton** maintains two **watermain** facilities along the northbound lanes of Oneida Street throughout the project limits.
- (12) The City of Appleton adjusted existing watermain facilities in 2017, no further conflict is anticipated.
- (13) The City of Appleton will adjust eleven water valves and three curb boxes to match the proposed project grades during construction. Notify the City of Appleton a minimum of 5 days prior to needing any of these facilities adjusted and allow 1 to 4 hours for each adjustment to be completed. Contact Erick Cardew at 920-832-5571 or 920-419-6214 to coordinate the adjustments.
- (14) **Fox Crossing Utilities** maintains a **sanitary sewer** facility along Oneida Street in the southbound lanes through the project limits. Fox Crossing Utilities will adjust a manhole rim at Station 48OSB+63 LT during construction. Notify Fox Crossing Utilities a minimum of 5 days prior to needing this adjustment and allow 1 day for the adjustment to be completed. Contact Brad Werner at 920-751-4200 to coordinate the adjustments.
- (15) **Fox Crossing Utilities** maintains a **watermain** facility along Oneida Street in the southbound lanes through the project limits. Fox Crossing Utilities plans to relocate hydrants at Station 49OSB+35 LT and Station 53OSB+37 LT, plus curb boxes at Station 47OSB+42 LT and Station 48OSB+50 LT, and adjust water valve boxes at Station 49OSB+36 LT, 49OSB+43 LT, Station 53OSB+30 LT, and Station 53OSB+33 LT. The hydrant and curb box work will be completed prior to construction. Contact

Brad Werner at 920-751-4200 to coordinate the water valve adjustments during construction.

- (16) Fox Crossing Utilities will install a new watermain from Station 53OSB+30 to Station 67OSB+75. This watermain will connect to the existing watermain along Oneida Street. This facility will be install at approximately 20 below existing road grade. This work will be completed prior to construction
- (17) **US Signal Company LLC** maintains an overhead **communication** facility along the west side of Oneida Street through the project limits. Once We Energies completes work on their transmission and distribution facilities near Station 68OSB+90 LT, US Signal will need to connect to the new distribution pole at this location. This work is dependent on the completion of the We Energies pole installation, and will require one day to complete.
- (18) **We Energies** maintains an **overhead electric** facility along the west side of Oneida Street through the project limit and an overhead electric transmission facility that crosses Oneida Street at the north project limits.
- (19) We Energies plans to remove the electric transmission tower at Station 68OSB+90 LT and install a new pole 100 feet west of the existing tower, and remove the electric transmission tower at Station 69OSB+20 RT and install a new pole 25 feet east of the existing tower. The tower foundation work is anticipated to begin on March 12, 2018. Tower erection is anticipated to begin on April 30, 2018, with an anticipated completion of all the transmission work by July 13, 2018.
- (20) We Energies also needs to remove temporary poles located near Station 68OSB+90 LT and install one new wood pole to complete their overhead electric distribution relocation along the west side of Oneida Street. This work will begin once the transmission tower relocation is complete and will require two weeks to complete. We Energies anticipates being completed by August 1, 2018 with this work.
- (21) **WE Energies** maintains an **underground gas** facility along the west side of Oneida Street through the project limit. This facility was relocation in 2016 and no further conflicts are anticipated.

9. Clear – Demolition – Removal.

9.1 Clearing and Grubbing.

Complete work according to standard spec 201 and as herein provided.

Revise standard spec 201.3 as follows:

Burning of stumps, roots, brush, waste logs and limbs, timber tops, and debris resulting from clearing and grubbing is not allowed.
(NER41-20100201)

9.2 Removing Delineators and Markers.

Remove delineators according to the pertinent requirements of standard spec 204 and as hereinafter provided.

Carefully remove and stockpile at a location on the right-of-way, outside the construction limits, all salvageable posts and hardware for pickup by Winnebago County forces.

Give one week advance notice to Winnebago County before starting the delineator removal work to coordinate pickup arrangements. Notify Highway Commissioner Ray Palonen at (920) 232-1700 prior to needing the stockpiled material removed

Remove and properly dispose of all other material from the right-of-way.
(NER41-20100201)

9.3 Removing Noise Barrier, Item 204.9090.S.01.

A Description

This special provision describes Removing Noise Barrier, including supports, footings and panels, according to the pertinent provisions of standard spec 204 and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Removing Noise Barrier by linear feet, acceptably completed.

E Payment

Add the following to standard spec204.5:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---------------|------------------------|------|
| 204.9090.S.01 | Removing Noise Barrier | LF |

204-025 (20150630)

9.4 Removing Underdrain, Item 204.9090.S.02.

A Description

This special provision describes Removing Underdrain, including underdrain outfalls and concrete endwalls, 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 by linear feet, acceptably completed. Removing underdrain outfalls and concrete endwalls are incidental to this item.

E Payment

Add the following to standard spec204.5:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---------------|---------------------|------|
| 204.9090.S.02 | Removing Underdrain | LF |

204-025 (20150630)

**9.5 Removing Sign Support Structure S-70-19, Item SPV.0105.950;
Removing Sign Support Structure S-08-01, Item SPV.0105.951.**

A General

This special provision describes removing the full sign support structure, removing the exposed portion of the footings below existing ground, covering the existing footing with topsoil and seeding at the location shown on the plans, as directed by the engineer, and as hereinafter provided.

B (Vacant)

C Construction

Remove and dispose of existing sign structure and footings sign plaques according to standard spec 204.3.2.1.

Remove the existing steel truss work and the double column steel towers at each of the truss.

Remove the existing concrete footings and reinforcement to a minimum of 2' below the existing ground and according to standard spec 204.

Dispose of all truss and towers, and exposed portion of footing off the project site.

Do not remove the existing sign bridge until the new sign bridge has been installed, unless directed by the engineer.

D Measurement

The department will measure Removing Sign Structure (station) as a single lump sum unit, acceptably removed 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.0105.950 | Removing Sign Support Structure S-70-19 | LS |
| SPV.0105.951 | Removing Sign Support Structure S-08-01 | LS |

Payment is full compensation for disassembling, removing, properly disposing of materials not salvaged for pickup by state forces.

10. Earthwork.

10.1 Notice to Contractor – CTH OO Fill Site.

Fill required to be placed at STH 441/CTH OO interchange. See plan for details.

10.2 Embankment Construction.

Replace standard spec 205.3.2(4) with the following:

If placing embankment on side slopes 10 feet high or higher and steeper than one vertical to 3 horizontal, provide vertically-faced, horizontal benches at least 2 feet wide into the existing embankment slope every 2-foot of vertical height.

If constructing embankment on only one side of abutments, wing walls, piers, or culvert headwalls, construct the embankment so that the area immediately adjacent to the structure is not compacted in a manner that causes overturning of or excessive pressure against the structure. If constructing embankment on both sides of a concrete wall, pipe, or box type structure, construct the embankment so that the elevation on both sides of the structure is always approximately the same.

(NER441-20150117)

10.3 Preparing the Foundation.

Add the following to standard spec 211.3.1:

Plan construction activities so the earth subgrade is covered by the roadway base in a timely manner upon completion of preparation of the subgrade or as directed by the engineer. The contractor is responsible for the removal of any excess water from the subgrade as a result of rainfall events, natural drainage and construction induced drainage.

(NER41-20150117)

10.4 Roadway Embankment, Item SPV.0035.001.

Conform to standard spec 207 and as follows:

Replace standard spec 207.1(1) with the following:

This section 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.

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 fill height exceeds 10 feet.

Replace standard spec 207.4(1) with the following:

The department will measure Roadway Embankment by the cubic yard acceptably completed in its final location using the method of average end areas, with no correction for curvature or settlement, except as follows:

- a) The engineer and contractor mutually agree to an alternative volume calculation method;
- b) The method of average end areas is not feasible;
- c) Other methods are specified herein standard spec 207.4.

If it is not possible to compute volumes of the various classes of roadway and drainage embankment by the method of average end areas due to erratic location of isolated deposits, the department may compute the volumes by alternative methods involving three-dimensional measurements.

The department will not measure embankment material beyond the limits of the required slopes.

Replace standard spec 207.5(1) with the following:

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--------------------|------|
| SPV.0035.001 | Roadway Embankment | CY |

Payment is full compensation for forming, compacting, shaping, sloping, trimming, finishing, maintaining the embankments, and all other incidental work required under this section.

(NER441-20150117)

11. Bases, Subbases, and Pavements.

11.1 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. 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>

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 certification(s) with HTCP number(s) and expiration date(s), 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.

| Contract Quantity | Minimum Required Testing per source |
|-----------------------------|---|
| ≤ 6000 tons | One stockpile test prior to 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 prior to 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 subplot 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 stockpile verification testing prior to placement is optional for contract 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:

| Required Certification Level: | Sampling or Testing Roles: |
|---|--|
| Transportation Materials Sampling Technician (TMS) Aggregate Technician I (AGGTEC-I) Aggregate Assistant Certified Technician (ACT-AGG) | Aggregate Sampling ^[1] |
| Aggregate Technician I (AGGTEC-I) Aggregate Assistant Certified Technician (ACT-AGG) | Aggregate Gradation Testing, Aggregate Fractured Particle Testing, Aggregate Liquid Limit and Plasticity Index Testing |

^[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://wisconsin.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/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 prior to placement.
- (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 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 prior to 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 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 (20170615)

11.2 Aggregate Quality Testing for Modified High-Performance Concrete (HPC) Mixes.

A Description

- (1) This provision describes additional requirements for testing the quality of coarse aggregates being used in modified high-performance concrete mixes for structures and pavements.
- (2) Conform to the standard specifications and modified high-performance concrete provisions contained within the contract, as modified in this provision.

B Materials

B.1 Personnel

- (1) Have personnel certified under the department's highway technician certification program (HTCP) perform sampling, testing, and documentation.

B.2 Laboratory

- (1) Perform testing at a department-qualified laboratory. Obtain information on the Wisconsin laboratory qualification program from:
Materials Management Section
3502 Kinsman Blvd.
Madison, Wisconsin 53704
Telephone: 608-246-5388
<http://www.dot.state.wi.us/business/engrserv/lab-qualification.htm>

B.3 Equipment

- (1) Furnish the necessary equipment and supplies for performing quality control testing. 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.

B.4 Records

- (1) Document all observations, inspection records, and test results. Submit testing records to the engineer.

B.5 Contractor Testing

- (1) Perform all quality control tests necessary to control the production processes applicable to this special provision. Use the test methods identified below, or other methods the engineer approves, to perform the following tests:

| | |
|--|--------------|
| LA Wear (100 and 500 revolutions) | AASHTO T 96 |
| Sodium Sulfate Soundness (R-4, 5 cycles) | AASHTO T 104 |
| Freeze-Thaw Soundness | AASHTO T 103 |
| Chert ^[1] | AASHTO T 113 |

^[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 the 3/8-inch sieve by the weight of the total sample.

- (2) 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 any time during normal working hours.
- (3) In addition to the requirements of standard spec 106.3.4.2.2, perform tests for LA wear, sodium sulfate soundness, freeze-thaw soundness and chert at least once per calendar year when producing coarse aggregates for use in modified high-performance concrete mixes.
- (4) Randomly test the percentage of chert at least once per 10,000 tons during production of coarse aggregates to be used in modified high-performance concrete mixes.

B.6 Department Testing

- (1) The department will have a HTCP certified technician, or ACT working under a certified technician, perform verification testing. The department will sample randomly at locations independent of the contractor's QC work. In all cases, the department will conduct the verification tests with separate personnel and equipment from the contractor's QC tests. The department will perform verification testing of chert at a frequency of 10 percent of the random quality control tests or a minimum of once per project, or at greater frequency if determined to be necessary by the engineer.

C (Vacant)

D (Vacant)

E Payment

- (1) Costs for furnishing all sampling, testing, and documentation required under this special provision are incidental to the work. If the contractor fails to perform the work required under this special provision, the department may reduce the contractor's pay. (NER441-20141217)

11.3 QMP HMA Pavement Nuclear Density.

A Description

Replace standard spec 460.3.3.2 (1) and standard spec 460.3.3.2 (4) with the following:

- (1) This special provision describes density testing of in-place HMA pavement with the use of nuclear density gauges. Conform to standard spec 460 as modified in this special provision.
- (2) Provide and maintain a quality control program defined as all activities and documentation of the following:
 1. Selection of test sites.
 2. Testing.
 3. Necessary adjustments in the process.
 4. Process control inspection.
- (3) Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes required procedures. Obtain the CMM from the department's web site at:
<http://roadwaystandards.dot.wi.gov/standards/cmm/index.htm>
- (4) The department's Materials Reporting System (MRS) software allows contractors to submit data to the department electronically, estimate pay adjustments, and print selected reports. Qualified personnel may obtain MRS software from the department's web site at:

<http://www.atwoodsystems.com/mrs>

B Materials

B.1 Personnel

- (1) Perform HMA pavement density (QC, QV) testing using a HTCP certified nuclear technician I, or a nuclear assistant certified technician (ACT-NUC) working under a certified technician.
- (2) If an ACT is performing sampling or testing, a certified technician must coordinate and take responsibility for the work an ACT performs. Have a certified technician ensure that all sampling and testing is performed correctly, analyze test results, and post resulting data. No more than one ACT can work under a single certified technician.

B.2 Testing

- (1) Conform to ASTM D2950 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter position. Perform each test for 4 minutes of nuclear gauge count time.

B.3 Equipment

B.3.1 General

- (1) Furnish nuclear gauges from the department's approved product list at
<http://www.dot.wisconsin.gov/business/engrserv/approvedprod.htm>.

- (2) Have the gauge calibrated by the manufacturer or an approved calibration service within 12 months of its use on the project. Retain a copy of the manufacturer's calibration certificate with the gauge.
- (3) Prior to each construction season, and following any calibration of the gauge, the contractor must perform calibration verification for each gauge using the reference blocks located in the department's central office materials laboratory. To obtain information or schedule a time to perform calibration verification, contact the department's Radiation Safety Officer at:
Materials Management Section
3502 Kinsman Blvd.
Madison, Wisconsin 53704
Telephone: (608) 243-5998

B.3.2 Comparison of Nuclear Gauges

B.3.2.1 Comparison of QC and QV Nuclear Gauges

- (1) Select a representative section of the compacted pavement prior to or on the first day of paving for the comparison process. The section does not have to be the same mix design.
- (2) Compare the 2 or more gauges used for density measurement (QC, QV). The QC and QV gauge operators will perform the comparison on 5 test sites jointly located. Record each density measurement of each test site for the QC, QV and back up gauges.
- (3) Calculate the average of the difference in density of the 5 test sites between the QC and QV gauges. Locate an additional 5 test sites if the average difference exceeds 1.0 lb/ft^3 . Measure and record the density on the 5 additional test sites for each gauge.
- (4) Calculate the average of the difference in density of the 10 test sites between the QC and QV gauges. Replace one or both gauges if the average difference of the 10 tests exceeds 1.0 lb/ft^3 and repeat comparison process from B.3.2.1 (2).
- (5) Furnish one of the QC gauges passing the allowable comparison tolerances to perform density testing on the project.

B.3.2.2 Comparison Monitoring

- (1) After performing the gauge comparison specified in B.3.2.1, establish a project reference site approved by the department. Clearly mark a flat surface of concrete or asphalt or other material that will not be disturbed during the duration of the project. Perform comparison monitoring of the QC, QV, and all back-up gauges at the project reference site.
- (2) Conduct an initial 10 density tests with each gauge on the project reference site and calculate the average value for each gauge to establish the gauge's reference value. Use

the gauge's reference value as a control to monitor the calibration of the gauge for the duration of the project.

- (3) Check each gauge on the project reference site a minimum of one test per day if paving on the project. Calculate the difference between the gauge's daily test result and its reference value. Investigate if a daily test result is not within 1.5 lb/ft³ of its reference value. Conduct 5 additional tests at the reference site once the cause of deviation is corrected. Calculate and record the average of the 5 additional tests. Remove the gauge from the project if the 5-test average is not within 1.5 lb/ft³ of its reference value established in B.3.2.2(2).
- (4) Maintain the reference site test data for each gauge at an agreed location.

B.4 Quality Control Testing and Documentation

B.4.1 Lot and Sublot Requirements

B.4.1.1 Mainline Traffic Lanes, Shoulders, and Appurtenances

- (1) A lot consists of the tonnage placed each day for each layer and target density specified in standard spec 460.3.3.1. A lot may include partial sublots.
- (2) Divide the roadway into sublots. A sublot is 1500 lane feet for each layer and target density.
- (3) A sublot may include HMA placed on more than one day of paving. Test sublots at the pre-determined random locations regardless of when the HMA is placed. No additional testing is required for partial sublots at the beginning or end of a day's paving.
- (4) If a resulting partial quantity at the end of the project is less than 750 lane feet, include that partial quantity with the last full sublot of the lane. If a resulting partial quantity at the end of the project is 750 lane feet or more, create a separate sublot for that partial quantity.
- (5) Randomly select test locations for each sublot as specified in CMM 8.15 prior to paving and provide a copy to the engineer. Locate and mark QC density test sites when performing the tests. Perform density tests prior to opening the roadway to traffic.
- (6) Use Table 1 to determine the number of tests required at each station, depending on the width of the lane being tested. When more than one test is required at a station, offset the tests 10 feet longitudinally from one another to form a diagonal testing row across the lane.

| Lane Width | No. of Tests | Transverse Location |
|---------------------------|---------------------|------------------------------|
| 5 ft or less | 1 | Random |
| Greater than 5 ft to 9 ft | 2 | Random within 2 equal widths |
| Greater than 9 ft | 3 | Random within 3 equal widths |

Table 1

B.4.1.2 Side Roads, Crossovers, Turn Lanes, Ramps, and Roundabouts

- (1) A lot represents a combination of the total daily tonnage for each layer and target density.
- (2) Each side road, crossover, turn lane, ramp, and roundabout must contain at least one subplot for each layer.
- (3) If a side road, crossover, turn lane, or ramp is 1500 feet or longer, determine sublots and random test locations as specified in B.4.1.1.
- (4) If a side road, crossover, turn lane, or ramp is less than 1500 feet long, determine sublots using a maximum of 750 tons per subplot and perform the number of random tests as specified in Table 2.

| Side Roads, Turn Lanes, Crossovers, Ramps, Roundabouts: Sublot/Layer tonnage | Minimum Number of Tests Required |
|---|---|
| 25 to 100 tons | 1 |
| 101 to 250 tons | 3 |
| 251 to 500 tons | 5 |
| 501 to 750 tons | 7 |

Table 2

B.4.2 Pavement Density Determination

B.4.2.1 Mainline Traffic Lanes and Appurtenances

- (1) Calculate the average subplot densities using the individual test results in each subplot.
- (2) If all subplot averages are no more than one percent below the target density, calculate the daily lot density by averaging the results of each random QC test taken on that day's material.
- (3) If any subplot average is more than one percent below the target density, do not include the individual test results from that subplot when computing the lot average density and remove that subplot's tonnage from the daily quantity for incentive. The tonnage from any such subplot is subject to disincentive pay according to standard spec 460.5.2.2.

B.4.2.2 Mainline Shoulders

B.4.2.2.1 Width Greater Than 5 Feet

- (1) Determine the pavement density as specified in B.4.2.1.

B.4.2.2.2 Width of 5 Feet or Less

- (1) If all subplot test results are no more than 3.0 percent below the minimum target density, calculate the daily lot density by averaging all individual test results for the day.
- (2) If a subplot test result is more than 3.0 percent below the target density, the engineer may require the unacceptable material to be removed and replaced with acceptable

material or allow the nonconforming material to remain in place with a 50 percent pay reduction. Determine the limits of the unacceptable material according to B.4.3.

B.4.2.3 Side Roads, Crossovers, Turn Lanes, Ramps, and Roundabouts

- (1) Determine the pavement density as specified in B.4.2.1.

B.4.2.4 Documentation

- (1) Document QC density test data as specified in CMM 8.15. Provide the engineer with the data for each lot within 24 hours of completing the QC testing for the lot.

B.4.3 Corrective Action

- (1) Notify the engineer immediately when an individual test is more than 3.0 percent below the specified minimum in standard spec 460.3.3.1. Investigate and determine the cause of the unacceptable test result.
- (2) The engineer may require unacceptable material specified in B.4.3(1) to be removed and replaced with acceptable material or allow the nonconforming material to remain in place with a 50 percent pay reduction. Determine limits of the unacceptable area by measuring density of the layer at 50-foot increments both ahead and behind the point of unacceptable density and at the same offset as the original test site. Continue testing at 50-foot increments until a point of acceptable density is found as specified in standard spec 460.5.2.2(1). Removal and replacement of material may be required if extended testing is in a previously accepted subplot. Testing in a previously accepted subplot will not be used to recalculate a new lot density.
- (3) Compute unacceptable pavement area using the product of the longitudinal limits of the unacceptable density and the full subplot width within the traffic lanes or shoulders.
- (4) Retesting and acceptance of replaced pavement will be according to standard spec 105.3.
- (5) Tests indicating density more than 3.0 percent below the specified minimum, and further tests taken to determine the limits of unacceptable area, are excluded from the computations of the subplot and lot densities.
- (6) If 2 consecutive subplot averages within the same paving pass and same target density are more than one percent below the specified target density, notify the engineer and take necessary corrective action. Document the locations of such sublots and the corrective action that was taken.

B.5 Department Testing

B.5.1 Verification Testing

- (1) The department will have a HTCP certified technician, or ACT working under a certified technician, perform verification testing. The department will test randomly at locations independent of the contractor's QC work. The department will perform verification testing at a minimum frequency of 10 percent of the sublots and a minimum

of one subplot per mix design. The subplots selected will be within the active work zone. The contractor will supply the necessary traffic control for the department's testing activities.

- (2) The QV tester will test each selected subplot using the same testing requirements and frequencies as the QC tester.
- (3) If the verification subplot average is not more than one percent below the specified minimum target density, use the QC tests for acceptance.
- (4) If the verification subplot average is more than one percent below the specified target density, compare the QC and QV subplot averages. If the QV subplot average is within 1.0 lb/ft^3 of the QC subplot average, use the QC tests for acceptance.
- (5) If the first QV/QC subplot average comparison shows a difference of more than 1.0 lb/ft^3 each tester will perform an additional set of tests within that subplot. Combine the additional tests with the original set of tests to compute a new subplot average for each tester. If the new QV and QC subplot averages compare to within 1.0 lb/ft^3 , use the original QC tests for acceptance.
- (6) If the QV and QC subplot averages differ by more than 1.0 lb/ft^3 after a second set of tests, resolve the difference with dispute resolution specified in B.6. The engineer will notify the contractor immediately when density deficiencies or testing precision exceeding the allowable differences are observed.

B.5.2 Independent Assurance Testing

- (1) Independent assurance is unbiased testing the department performs to evaluate the department's verification and the contractor's QC sampling and testing including personnel qualifications, procedures, and equipment. The department will perform the independent assurance review according to the department's independent assurance program.

B.6 Dispute Resolution

- (1) The testers may perform investigation in the work zone by analyzing the testing, calculation, and documentation procedures. The testers may perform gauge comparison according to B.3.2.1.
- (2) The testers may use comparison monitoring according to B.3.2.2 to determine if one of the gauges is out of tolerance. If a gauge is found to be out of tolerance with its reference value, remove the gauge from the project and use the other gauge's test results for acceptance.
- (3) If the testing discrepancy cannot be identified, the contractor may elect to accept the QV subplot density test results or retesting of the subplot in dispute within 48 hours of paving. Traffic control costs will be split between the department and the contractor.

- (4) If investigation finds that both gauges are in error, the contractor and engineer will reach a decision on resolution through mutual agreement.

B.7 Acceptance

- (1) The department will not accept QMP HMA Pavement Nuclear Density if a non-compared gauge is used for contractor QC tests.

C (Vacant)

D (Vacant)

E Payment

E.1 QMP Testing

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

E.2 Disincentive for HMA Pavement Density

- (1) The department will administer density disincentives according to standard spec 460.5.2.2.

E.3 Incentive for HMA Pavement Density

- (1) The department will administer density incentives according to standard spec 460.5.2.3.

stp-460-020 (20161130)

11.4 Concrete Pavement Joint Layout, Item 415.5110.S.

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. Concrete paving details are included in the plan for reference only.

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 | Concrete Pavement Joint Layout | 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)

11.5 Modified High Performance Concrete (HPC) Pavement 9-Inch, Item SPV.0180.001; Modified High Performance Concrete (HPC) Pavement 10-Inch, Item SPV.0180.002; Modified High Performance Concrete (HPC) Pavement 11-Inch, Item SPV.0180.003.

This special provision describes specialized material and construction requirements to be utilized on all concrete pavement and shoulders. Conform to standard spec 415 and 501, as modified in this special provision. Conform to standard spec 715 for QMP, as modified in this special provision.

MODIFY STANDARD SPEC 415 AS FOLLOWS:

415.5.1 General

Replace standard spec 415.5.1(1) with the following:

- (1) The department will pay for measured quantities at the contract unit price and incidentals necessary to complete the work under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---|------|
| SPV.0180.001 | Modified High Performance Concrete (HPC) Pavement 9-Inch | SY |
| SPV.0180.002 | Modified High Performance Concrete Pavement 10-Inch | SY |
| SPV.0180.003 | Modified High Performance Concrete Pavement 11-Inch | SY |

MODIFY STANDARD SPEC 501 AS FOLLOWS:

501.2.5.4.1 General

Replace the entire text with the following:

- (1) Use clean, hard, durable crushed limestone with 100% 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 standard spec 501.2.5.4.2(1) with the following:

- (1) The amount of deleterious substances must not exceed the following percentages:

| DELETERIOUS SUBSTANCE | PERCENT BY WEIGHT |
|---|-------------------|
| Shale..... | 1.0 |
| Coal | 1.0 |
| Clay lumps | 0.3 |
| Soft fragments | 5.0 |
| Any combination of above..... | 5.0 |
| Flat or elongated pieces based on a 3:1 ratio | 15.0 |
| Materials passing the No. 200 sieve | 1.5 |
| Chert..... | 3.0 |

501.2.5.4.3 Physical Properties

Replace standard spec 501.2.5.4.3(1) with the following:

- (1) The percent wear shall not exceed 30, the weighted soundness loss shall not exceed 6 percent, and the weighted freeze-thaw average loss shall not exceed 15 percent.

501.3.5.1 General

Replace standard spec 501.3.5.1(1) with the following:

- (1) Use central-mixed concrete as defined in standard spec 501.3.5.1(2) for all work under this special provision.

501.3.8.2.1 General

Replace the entire text with the following:

- (1) The contractor is responsible for the quality of the concrete placed in hot weather. For concrete placed under this special provision, submit a written temperature control plan at or before the pre-pour meeting. In that plan, outline the actions the contractor will take to control concrete temperature if the concrete temperature at the point of placement exceeds 80 F. Do not place concrete under the items in this special provision without the engineer's written acceptance of that temperature control plan. Perform work as outlined in the temperature control plan.
- (2) If the concrete temperature at the point of placement exceeds 90 F, do not place concrete under this special provision.

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

501.5 Payment

Replace standard spec 501.5(3) with the following:

- (3) Ice, additives, or other actions the contractor takes to control the temperature of concrete are incidental to this item.

Add the following as standard spec 501.5(4):

- (4) Water used to wet the base material is incidental to this item.

MODIFY STANDARD SPEC 715 AS FOLLOWS:

715.3.2.2.1 Pavement

Replace the entire section with:

- (1) If a subplot strength is less than 3000 psi, the department may direct the contractor to core that subplot to determine its structural adequacy and whether to direct removal. Cut and test cores according to AASHTO T 24 and as where the engineer directs. Have an HTCP certified PCC technician I perform or observe the coring.
- (2) The subplot pavement is conforming if the compressive strengths of all cores from the subplot are 3000 psi or greater or the engineer does not require coring.
- (3) The subplot pavement is nonconforming if the compressive strengths of any core from the subplot is less than 3000 psi. The department may direct removal and replacement or otherwise determine the final disposition of nonconforming material as specified in 106.5.

715.5.1 General

Replace standard spec 715.5.1(4) with the following:

- (4) The department will adjust pay for each lot using PWL of the 28-day subplot average strengths for that lot. The department will measure PWL relative to the lower specification limit of 4500 psi for pavements. The department will not pay a strength incentive for concrete that is nonconforming in another specified property.

715.5.2 Pavements

Replace standard spec 715.5.2(3) with the following:

- (3) For lots with a full battery of QC tests at less than 4 locations, there is no incentive but the department will assess a disincentive based on the individual subplot average strengths. The department will reduce pay for sublots with an average strength below 4500 psi by \$1.50 per square yard.
(NER441-20141217)

11.6 Concrete Pavement SHES 9-Inch, Item SPV.0180.004.

A Description

Complete the work under this item according to standard spec 415 and as hereinafter provided.

B Materials

Furnish concrete mixture meeting the requirements for Special High Early Strength Concrete Pavement Repair and Replacement as specified in standard spec 416.3.8.

C Construction

The opening of Concrete Pavement SHES to traffic shall be according to standard spec 415.3.15 and as follows: Before it is opened to traffic, cure the Concrete Pavement SHES a minimum of eight hours from the time of placement.

D Measurement

The department will measure Concrete Pavement SHES 9-Inch by the square yard, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-------------------------------|------|
| SPV.0180.004 | Concrete Pavement SHES 9-Inch | SY |

Payment is full compensation for preparing the foundation, unless provided otherwise; furnishing, hauling, placing, curing, and protecting the concrete; jointing and joint materials, dowels, and tie bars, unless provided otherwise; providing special high early strength concrete mix designs; the required making, testing, and strength evaluations of all concrete cylinders.

The department will pay for full depth saw cuts, removal of existing pavements, pavement ties, and dowel bars installed in the existing concrete pavement, exclusive of those necessary to repair damage caused by the contractor, separately.

11.7 Cold Patch, Item SPV.0195.001.

A Description

This special provision describes furnishing, stockpiling, placing, and maintaining cold patch material. The cold patch material shall be used for short term maintenance purposes to fill potholes/voids in the existing pavement surface that the engineer deems necessary.

B Materials

B.1 General

Furnish cold patch that is a combination of course aggregate, natural sand and bituminous material MC-250. The mixture shall be designed to have a workability range of 15°F-100°F without the addition of heat. The mixture shall have good adhesion to wet surfaces and be resistant to damage by water, salt and deicing products. The mixture shall be uniform and not require any mixing or special handling prior to use.

B.2 Gradations

Conform to the following gradation requirements:

| SIEVE SIZE | PERCENT PASSING (by weight) |
|--------------------|--------------------------------|
| 3/8 Inch (9.5 mm) | 96 - 100 |
| No. 4 (4.75 mm) | 76 - 82 |
| No. 8 (2.38 mm) | 50 - 60 |
| No. 50 (0.297 mm) | 15 - 20 |
| No. 200 (0.074 mm) | 2 - 5 |
| Bitumen | 4.8 - 5.2 |

C Construction

C.1 General

Choose a smooth, firm, and well-drained area for an on-site stockpile that is cleared of vegetation and foreign material that may contaminate the cold patch. The stockpile shall be easily accessible and able to be maintained and replenished at any time during the duration of the project.

Application of the cold patch must be able to be accomplished by hand labor. Prior to filling any potholes/voids all ponded water and loose debris shall be removed. Place material into the pothole/void and compact flush with a tamper, roller, or vehicle tire. Traffic must be able to travel over the patch immediately after installation.

D Measurement

The department will measure Cold Patch by the ton stockpiled on site and 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.0195.001 | Cold Patch | TON |

Payment for cold patch is full compensation for the patch; furnishing and providing a stockpile of material; preparing the pothole/void for material placement, stockpiling,

placing, compacting, and maintaining, and all incidentals necessary to complete the contract work.

The contractor shall be compensated for any unused stockpile quantities remaining on site at the completion of the project, thus the stockpile is not to exceed 10 tons on site at any given time unless approved by the engineer.

Any unused portions of the stockpile shall be removed and disposed of at the completion of the project unless otherwise directed by the engineer. This work shall be completed at no additional expense to the department.

12. Bridges.

12.1 Polymer Overlay B-70-113, Item 509.5100.S.01; B-70-114, Item 509.5100.S.02; B-70-115, Item 509.5100.S.03; B-70-116, Item 509.5100.S.04; B-70-423, Item 509.5100.S.05; B-70-424, Item 509.5100.S.06.

A Description

This special provision describes furnishing and applying two layers of a two-component polymer overlay system to the bridge decks shown on the plans. The minimum total thickness of the overlay system shall be ¼”.

B Materials

B.1 General

Furnish materials specifically designed for use over concrete bridge decks. Furnish polymer liquid binders from the department’s approved product list.

B.2 Polymer Resin

Furnish a polymer resin base and hardener composed of two-component, 100% solids, 100% reactive, thermosetting compound with the following properties:

| Property | Requirements | Test Method |
|------------------------------------|-----------------------------------|--|
| Gel Time ^A | 15 - 45 minutes @ 73° to 75° F | ASTM C881 |
| Viscosity ^A | 7 - 70 poises | ASTM D2393, Brookfield RVT, Spindle No. 3, 20 rpm |
| Shore D Hardness ^B | 60-75 | ASTM D2240 |
| Absorption ^B | 1% maximum at 24 hr | ASTM D570 |
| Tensile Elongation ^B | 30% - 70% @ 7 days | ASTM D638 |
| Tensile Strength ^B | 2000 to 5000 psi @ 7 days | ASTM D638 |
| Chloride Permeability ^B | <100 coulombs @ 28 days | AASHTO T277 |

^A Uncured, mixed polymer binder

^B Cured, mixed polymer binder

The required properties of the polymer resin when mixed with aggregate:

| Property | Requirement ^C | Test Method |
|------------------------------|---|---|
| Minimum Compressive Strength | 1,000 psi @ 8 hrs 5,000 psi @ 24 hrs | ASTM C579 Method B, Modified ^D |
| Thermal Compatibility | No Delaminations | ASTM C884 |
| Minimum Pull-off Strength | 250 psi @ 24 hrs | ASTM C1583 |

^C Based on samples cured or aged and tested at 75°F

^D Plastic inserts that will provide 2-inch by 2-inch cubes shall be placed in the oversized brass molds.

B.3 Aggregates

Furnish natural or synthetic aggregates that are non-polishing, clean, free of surface moisture, fractured or angular in shape; free from silt, clay, asphalt, or other organic materials; and meet the following properties and gradation requirements:

Aggregate Properties:

| Property | Requirement | Test Method |
|-------------------|--|--------------------|
| Moisture Content* | ½ of the measured aggregate absorption, % | ASTM C566 |
| Hardness | ³ 6.5 | Mohs Scale |
| Fractured Faces | 100% with at least 1 fractured face and 80% with at least 2 fractured faces of material retained on No. 16 | ASTM D5821 |
| Absorption | ≤1% | ASTM C128 |

* Sampled and tested by the department prior to placement.

Gradation:

| Sieve Size | % Passing by Weight |
|-------------------|----------------------------|
| No. 4 | 100 |
| No. 8 | 30 – 75 |
| No. 16 | 0 – 5 |
| No. 30 | 0 – 1 |

B.5 Approval of Bridge Deck Polymer Overlay System

A minimum of 20 working days prior to application, submit product data sheets and specifications from the manufacturer, and a certified report of test or analysis from an independent laboratory to the engineer for approval. The department will sample and test

the aggregates for gradation and moisture content prior to placement. If requested, supply the department with samples of the polymer for the purpose of acceptance testing.

B.5.1 Product Data Sheets and Specifications

Product data sheets and specifications from the manufacture consists of literature from the manufacturer showing general instructions, application recommendations/methods, product properties, general instructions, or any other applicable information.

B.5.2 Certified Report of Test or Analysis

Polymer Binder: Submit a certified report of test or analysis from an independent laboratory dated less than 3 years prior to the date of the project letting showing the polymer binder meets the requirements of section B.2.

Aggregates: Submit a certified report of test or analysis from an independent laboratory dated less than 6 months prior to the date of the project letting showing the aggregates meet the requirements of section B.3.

C Construction

C.1 General

Field Review: Conduct a field review of the existing deck to identify any possible surface preparation and material compatibility issues.

Pre-Installation Meeting: Conduct a pre-installation meeting with the manufacturer's representative and the engineer prior to construction. Discuss the field review findings, verification testing of the surface preparation and establish procedures for maintaining optimum working conditions and coordination of work. Furnish the engineer a copy of the recommended procedures and apply the overlay system according to the manufacturer's instructions. Supply for the engineer's use for the duration of the project, a Concrete Surface Profile (CSP) chip set of 10 from the International Concrete Repair Institute (ICRI).

Manufacturer's Representative: An experienced manufacturer's representative familiar with the overlay system installation procedures shall be present at all times during surface preparation and overlay placement to provide quality assurance that the work is being performed properly. This requirement may be reduced at the engineer's discretion.

Material Storage: Store and handle materials according to the manufacturer's recommendations. Store resin materials in their original containers in a dry area. Store all aggregates in a dry environment and protect aggregates from contaminants on the job site.

C.2 Deck Preparation

C.2.1. Deck Repair

Remove all asphaltic patches and unsound or disintegrated areas of the concrete decks as the plans show, or as the engineer directs. Work performed to repair the concrete deck will be paid for under other items. Ensure that products used for deck patching are compatible with the polymer overlay system.

NOTE: Some polymer systems require concrete patch material to be in place a minimum of 28-days before overlaying - contact polymer manufacturer before completing deck patching/repair.

C.2.2 Surface Preparation

Determine an acceptable shotblasting machine operation (size of shot, flow of shot, forward speed, and/or number of passes) that provides a surface profile meeting CSP 5 (medium-heavy shotblast) according to the ICRI Technical Guideline No. 310.2. If the engineer requires additional verification of the surface preparation, test the tensile bond strength according to ASTM C1593. The surface preparation will be considered acceptable if the tensile bond strength is greater than or equal to 250 psi or the failure area at a depth of ¼ inches or more is greater than 50% of the test area. Continue adjustment of the shotblasting machine and necessary testing until the surface is acceptable to the engineer or a passing test result is obtained.

Prepare the entire deck using the final accepted adjustments to the shotblasting machine as determined above. Thoroughly blast clean with hand-held equipment any areas inaccessible by the shotblasting equipment. Do not perform surface preparation more than 24 hours prior to the application of the overlay system.

Protect drains, expansion joints, access hatches, or other appurtenances on the deck from damage by the shot and sand blasting operations and from materials adhering and entering. Tape or form all construction joints to provide a clean straight edge.

Prior to shot blasting, remove pavement markings within the treatment area using an approved mechanical or blasting method.

Prepare the vertical concrete surfaces adjacent to the deck a minimum of 2" above the overlay according to SSPC-SP 13 (free of contaminants, dust, and loose concrete) by sand blasting, using wire wheels, or other approved method.

Just prior to overlay placement, clean all dust, debris, and concrete fines from the prepared surfaces including the vertical surfaces with compressed air. When using compressed air, the air stream must be free of oil. Any grease, oil, or other foreign matter that rests on or has absorbed into the concrete shall be removed completely. If any prepared surfaces (including the first layer of the polymer overlay) are exposed to rain or dew, lightly sandblast (brush/breeze blast) the exposed surfaces.

The engineer may consider alternate surface preparation methods per the overlay system manufacture's recommendations. The engineer will approve the final surface profile and deck cleanliness prior to the contractor placing the polymer overlay.

C.2.3 Transitional Area

If shown on the plans, create a transitional area approaching transverse expansion joints and ends of the deck using an approved mechanical or blasting method. Remove 1/4" to 5/16" of concrete adjacent to the joint or end of deck and taper a distance of 3 feet.

If shown on the plans, create a transitional area on the approach pavement. Prep and place the first lift 3' beyond the end of the deck the same width as the deck. Prep and place the second lift 6' beyond the end of the deck the same width as the deck.

C.3 Application of the Overlay

Perform the handling and mixing of the polymer resin and hardening agent in a safe manner to achieve the desired results according to the manufacturer's instructions. Do not apply the overlay system if any of the following exists:

- a. Ambient air temperature is below 50°F or above 100°F;
- b. Deck temperature is below 50°F;
- c. Moisture content in the deck exceeds 4.5% when measured by an electronic moisture meter or shows visible moisture after 2 hours when measured according to ASTM D4263;
- d. Rain is forecasted during the minimum curing periods listed under C.5;
- e. Materials component temperatures below 65°F or above 99°F;
- f. Concrete age is less than 28 days unless approved by the engineer.
- g. The deck temperature exceeds 100°F.
- h. If the gel time is 10 minutes or less at the predicted high air temperature for the day.

After the deck has been shotblasted or during the overlay curing period, only necessary surface preparation and overlay application equipment will be allowed on the deck. Provide appropriate protective measures to prevent contamination from equipment allowed on the deck during preparation and application operations. Begin overlay placement as soon as possible after surface preparation operations.

The polymer overlay shall consist of a two-course application of polymer and aggregate. Each of the two courses shall consist of a layer of polymer covered with a layer of aggregate in sufficient quantity to completely cover the polymer. Apply the polymer and aggregate according to the manufacturer's requirements. Apply the overlay using equipment designed for this purpose. The application machine shall feature positive displacement volumetric metering and be capable of storing and mixing the polymer resins at the proper mix ratio. Disperse the aggregate using a method that provides a uniform, consistent coverage of aggregate and minimizes aggregate rolling or bouncing into final position. First course applications that do not receive enough aggregate before the polymer gels shall be removed and replaced. A second course applied with insufficient aggregate may be left in place, but will require additional applications before opening to traffic.

After completion of each course, cure the overlay according to the manufacturer's instructions. Follow the minimum cure times listed under C.5 or as prescribed by the manufacturer. Remove the excess aggregate from the surface treatment by sweeping, blowing, or vacuuming without tearing or damaging the surface; the material may be re-

used if approved by the engineer and manufacturer. Apply all courses of the overlay system before opening the area to traffic. Do not allow equipment or traffic on the treated area until directed by the engineer.

After the first layer of coating has cured to the point where the aggregate cannot be pulled out, apply the second layer. Prior to applying the second layer, broom and blow off the first layer with compressed air to remove all loose excess aggregate.

Prior to opening to traffic, clean expansion joints and joint seals of all debris and polymer. A minimum of 3 days following opening to traffic, remove loosened aggregates from the deck, expansion joints, and approach pavement.

C.4 Application Rates

Apply the polymer overlay in two separate courses according to the manufacturer's instructions, but not less than the following rate of application.

| Course | Minimum Polymer Rate ^A (GAL/100 SF) | Aggregate ^B (LBS/SY) |
|--------|--|---------------------------------|
| 1 | 2.5 | 10+ |
| 2 | 5.0 | 14+ |

^A The minimum total applications rate is 7.5 GAL/100 SF.

^B Application of aggregate shall be of sufficient quantity to completely cover the polymer.

C.5 Minimum Curing Periods

As a minimum, cure the coating as follows:

| | Average temperature of deck, polymer and aggregate components in °F | | | | | | | |
|--------|--|----------|----------|--------|---------|--------|----------|--------|
| Course | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75-79 | 80-84 | 85-99 |
| 1 | 6 hrs. | 5 hrs. | 4 hrs. | 3 hrs. | 2.5 hrs | 2 hrs | 1.5 hrs. | 1 hr. |
| 2 | 8 hrs. | 6.5 hrs. | 6.5 hrs. | 5 hrs. | 4 hrs. | 3 hrs. | 3 hrs. | 3 hrs. |

If faster cure times are desired and achievable, submit to the engineer a certified test report from an independent laboratory showing the material is able to reach a compressive strength of 1000 psi as tested per ASTM C 579 Method B within the temperature ranges and cure times for which the product is proposed to be placed. Establish ambient air, material, and substrate temperatures from the manufacturer for field applications. Field applications will not be allowed below the documented temperatures.

C.6 Repair of Polymer Overlay

Repair all areas of unbonded, uncured, or damaged polymer overlay for no additional compensation. Submit repair procedures from the manufacturer to the engineer for approval. Absent a manufacturer's repair procedures and with the approval of the engineer, complete repairs according to the following: Saw cut the limits of the area to the top of the concrete; remove the overlay by scarifying, grinding, or other approved methods; shot blast

or sand blast and air blast the concrete prior to placement of polymer overlay; and place the polymer overlay according to section C.3.

D Measurement

The department will measure Polymer Overlay in area by the square yard, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---------------|--------------------------|------|
| 509.5100.S.01 | Polymer Overlay B-70-113 | SY |
| 509.5100.S.02 | Polymer Overlay B-70-114 | SY |
| 509.5100.S.03 | Polymer Overlay B-70-115 | SY |
| 509.5100.S.04 | Polymer Overlay B-70-116 | SY |
| 509.5100.S.05 | Polymer Overlay B-70-423 | SY |
| 509.5100.S.06 | Polymer Overlay B-70-424 | SY |

Payment is full compensation for preparing the surface; for tensile bond testing; for creating the transitional area; for providing the overlay; for cleanup; and for sweeping/vacuuming and disposing of excess materials. Concrete Deck Repair will be paid for separately.

stp-509-030 (20170615)

13. Retaining Walls, Ground Support.

13.1 Notice to Contractor – Noisewall N-70-131.

There is an overhead utility line perpendicularly crossing noisewall N-70-131 at approximately Station 315 WB+00. The utility is 38' from bottom of wall to the lines. Contractor to be aware of these overhead lines and no conflict is anticipated.

13.2 Concrete Staining R-70-141, Item 517.1010.S.01.

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 Surfer, 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 45° 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 measure Concrete Staining (Structure) in area by the square foot of surface, acceptably prepared and stained.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---------------|----------------------------|------|
| 517.1010.S.01 | Concrete Staining R-70-141 | SF |

Payment is full compensation for furnishing and applying the two coat system; for preparing the concrete surface; and for preparing the sample panels.
517-110 (20140630)

13.3 Architectural Surface Treatment R-70-141, Item 517.1050.S.01.

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 1/4-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 measure Architectural Surface Treatment (Structure) in area by the square foot of architectural surface acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---------------|--|------|
| 517.1050.S.01 | Architectural Surface Treatment R-70-141 | 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.

517-150 (20110615)

13.4 Noise Barriers Double-Sided Sound Absorptive N-70-121, Item 531.0300.S.001; N-70-130, Item 531.0300.S.002; N-70-131, Item 531.0300.S.003; N-70-140, Item 531.0300.S.004.

A Description

This special provision describes designing, fabricating, transporting, and erecting composite concrete double-sided sound absorptive noise barriers according to the plans, portions of the standard specifications cited below, the department-approved installation specifications, and as hereinafter provided.

B Noise Wall System

B.1 System Pre-Qualification and Selection

The noise wall system supplied must be pre-qualified by the department. The department maintains a list of pre-qualified systems which can be viewed online at:

<http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx>

Systems eligible for use on this project shall be pre-qualified prior to the award of this contract.

Provide the name of the selected system, and the intended fabricator to the engineer within 25 days after award of the contract. Schedule a pre-design meeting with the engineer subsequent to award of the contract and prior to beginning design of the noise barrier. A representative of the fabricator of the noise barrier components shall attend this meeting.

B.2 Design

B.2.1 Structural and Foundation Design

The structural and foundation design of the noise barrier system shall conform to the current edition of "AASHTO LRFD Bridge Design Specifications" published by the American Association of State Highway and Transportation Officials (AASHTO), 444 North Capitol Street, NW, Suite 225, Washington, DC 20001, with the following exceptions:

Design the noise barrier to withstand wind pressure, applied perpendicular to the barrier, in each direction, of 28.5 pounds per square foot for ground mounted barriers, and 37.5 pounds per square foot for structure mounted barriers.

Design drilled shaft foundations using the Broms Method. Ignore the top 1-foot of supporting soil in the design of ground-mounted barrier foundations.

In addition to wind loads, design the bottom noise barrier panel to support the dead load (weight) of the panels directly above it and its own dead load. Assume this dead load to be distributed uniformly across the bottom panel acting as a simple beam supported at the posts.

Bottom noise barrier panels shall have a minimum amount of perimeter reinforcement of a #4 bar which shall be continuous around the corners. Reinforcing steel in the concrete core of noise barrier panels shall have a minimum clear cover of 1 inch. Clear cover does not include sound absorptive material. Design the reinforced concrete core to resist the loads without considering any composite action from other material in the panel.

Provide a neoprene bearing pad or equivalent material of ¼ inch minimum thickness between the foundation and the bottom panels. The allowable bearing stress shall not exceed 900 psi. Precast concrete pedestals placed between the foundation and bottom panels shall be reinforced if over 1'-0" high. The bearing pads shall be preformed EPDM rubber conforming to ASTM D-2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80.

B.2.2 Fire Hose Access Openings

Design fire hose access openings, at locations shown on the plans, with additional reinforcement and clear cover around the opening as necessary to maintain structural integrity. Detail drawings shall show the additional reinforcement and method for attaching the Fire Hydrant Location Signs to the barrier panel.

B.2.3 Barrier Profile

Unless otherwise shown on the plan or approved by the engineer, design the top of the noise barrier to be horizontal and at or above the acoustic elevation line shown on the plans. The bottom elevation of the noise barrier shall be as shown on the plans. Changes in elevation shall be accomplished by stepping sections at posts. Steps shall not exceed 3-feet in height. All joints shall be horizontal or vertical and shall be aligned with the adjacent panels.

B.2.4 Panel Orientation

Design the panels to prevent entrapment and ponding of water. Avoid inadvertently providing areas for perching, nesting of birds or collecting of dirt and debris in the design of the noise barrier system.

B.2.5 Sound Transmission Loss (TL)

Design the noise barrier panel material to achieve a transmission loss equal to or greater than 20 decibels in all test frequency bands, as referenced in ASTM E90.

B.2.6 Noise Reduction Coefficient (NRC)

Design the noise barrier system so that the highway sides of the noise barrier panels have a minimum NRC of 0.80, and the residential sides have a minimum NRC of 0.70 as referenced in ASTM C423.

B.2.7 Design Coordination

Design the noise barrier post spacing so as not to interfere with the existing utility and drainage facilities.

Design the noise barrier post spacing so as not to interfere with proposed utility and drainage facilities shown in the plans. This includes proposed roadway lighting and ITS facilities.

For noise barriers mounted behind or near proposed retaining walls, coordinate and design the noise barrier post spacing so as to not interfere with embedded portion of the proposed retaining walls, including MSE wall soil reinforcement and tieback anchors on soldier pile and timber lagging retaining walls.

For noise barriers mounted on proposed bridges and retaining walls, coordinate and design the noise barrier post spacing to coincide with noise barrier post and embedded noise barrier anchor assembly spacing shown on the bridge and retaining wall plans. Coordinate any required changes to the noise barrier post spacing and embedded noise barrier anchor assembly locations shown on the bridge and retaining wall plans, if required for the design of the noise barrier.

B.2.8 Weep Hole Openings

Design panels such that weep hole openings in noise wall to allow water to drain can be field installed per C.3 at locations shown on the plans.

B.2.9 Maintenance Doors

Design maintenance doors and door portals in noise walls, at locations shown on the plans, with additional reinforcement and clear cover around the opening as necessary to maintain structural integrity per B.2.1.

B.3 Materials

All materials used in the work shall conform to the requirements of the standard specifications cited below and as hereinafter specified. All required material certifications and testing are the responsibility of the contractor. All certifications and test reports shall carry the name and address of the fabrication facility where the specific material was produced.

B.3.1 Concrete Masonry

Provide grade A, A-2, 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 for concrete posts and the core component of composite concrete sound absorbing panels. Provide QMP for class II ancillary concrete as specified in standard spec 716.

B.3.2 Materials Testing – General

All test reports shall carry the name and address of the laboratory where testing was performed, and the name of the person in responsible charge of the specific tests for which data is presented. Materials tested shall be representative of materials manufactured for this specific contract. Panels tested or from which samples will be taken will be selected and appropriately marked by the engineer either at the manufacturer's plant or from panels delivered to the project at the engineer's option.

Testing as detailed below is required for each lot of material not to exceed 100,000 SF of noise barrier produced. Conduct testing on panels within the first 30,000 SF of production of each lot not exceeding 100,000 SF. For projects that do not exceed 100,000 SF, a minimum of two lots of material will represent the project, each lot representing equivalent square footage. The first set of tests conducted for projects that do not exceed 100,000 SF shall be within the first third of the total square footage of the project. Provide the shipping record of the samples to the laboratory within five days of sampling. Commence testing as soon as practicable after sampling.

Test all materials as fabricated, including any specified finishing.

B.3.2.1 Noise Reduction Coefficient (NRC)

Test noise barrier panels according to ASTM C423, and placed according to ASTM E795, mounting type A, to determine the noise reduction coefficient (NRC) of the material. Submit to the engineer an independent laboratory test report that shows that the noise barrier panels achieve an NRC as specified in B.2.6 for the highway side of the barrier.

B.3.2.2 Long-term Durability

Test all sound absorbing composite concrete and composite concrete components for long-term durability according to ASTM C672 and the following modifications and/or requirements:

B.3.2.2.1 Test Specimens

Three specimens of a full cross section of the composite panel at least 144 square inches in face area will be selected at random from the provided composite panel as defined in B.3. Sample specimens shall be representative of the manufacturer's continuous production operation, as selected and marked by the engineer. Specimens shall be 2D-symmetric and shaped according to the testing laboratory's accommodations.

Prepare the surfaces of the sample specimen(s) for testing as follows. Brush the surfaces of the sample to remove any loose particles. Prior to testing, submerge the test specimens be submerged in water for a period of 24 hours prior to testing. Immediately following this, cover the specimens with the sodium chloride solution as stated below.

B.3.2.2.2 Test Procedure

Place samples in a 5 sided water tight container, fully submerged in a solution of sodium chloride (concentration 3% by mass). Maintain ¼-inch of sodium chloride solution above the top surface of the fully submerged specimen within the container.

Subject the submerged specimens to continuous freeze-thaw cycles as follows:

After each five cycles, remove the salt solution and particles of deteriorated concrete from the slab and collect in a watertight container. The operation is best accomplished by tilting the slab in a funnel approximately 20-inches in diameter and washing the surface of the slab with a 3% sodium chloride solution. Continue this washing until all loose particles are removed from the sample. Strain the solution through a filter and dry the residue at

221 degrees Fahrenheit to a constant mass condition. Cumulatively weigh the residue after each five cycles. The dry residue is defined as the loss of mass. Calculate the loss of mass to the nearest 0.01 pounds per square foot, not including the exposed surface of any core material on the cast or cut edges. Visually rate the surfaces according to 10.1.5 of ASTM C672 including any delamination of the sound absorbing material from the concrete core for composite concrete materials. After each washing of each sample, re-establish the initial submerged condition with a new solution of 3% sodium chloride prior to continuing with freeze-thaw cycling. .

Continue the test until 30 freeze-thaw cycles have been completed.

During the test position and support each specimen to allow free circulation of the test solution under, around, and over test pieces. Support the bottom of the specimens on blocks in a manner to facilitate movement of moisture through and around the test specimen(s).

B.3.2.2.3 Test Report

Submit to the engineer an independent testing laboratory test report which shows that all solid and composite concrete products meet or exceed the following criteria:

- a. After 30 freeze-thaw cycles the test specimens shall not exhibit excessive deterioration in the form of cracks, spalls, aggregate disintegration, delamination or other objectionable features.
- b. Compliance with the test requirements is based upon a loss of mass of not more than 0.2 pounds per square foot from the surface after 30 cycles of freezing and thawing.
- c. The report shall include the following:
 1. Name of manufacturer.
 2. Location of production.
 3. Production description.
 4. Date product sample was cast.
 5. Commencement date of testing.
 6. Specimen identification.
 7. 5x7-inch color photographs of the test specimens before and after the 30 cycles of freeze-thaw test showing both sound absorbing faces and at least one representative side view of a cut (not cast) face, and any defects.
 8. A graph of the cumulative mass loss of each specimen plotted against the number of freeze-thaw cycles for 5, 10, 15, 20, 25, and 30 freeze-thaw cycles.
 9. Visual rating according to ASTM C672 Section 10.1.5, including report of any delamination of the sound absorbing material from the concrete core for composite concrete components.

B.3.3 Materials Certification - General

Provide certification of compliance or sample fabrications as noted below. All material certifications shall reference the specific facility manufacturing the material and this contract. Certification is required for each lot of material not to exceed 100,000 SF of noise barrier produced, and shall include dates of fabrication for the lot being certified. For

projects that do not exceed 100,000 SF, a minimum of two lots of material will represent the project, each lot representing equivalent square footage.

B.3.3.1 Color and Surface Texture

Supply and deliver to the engineer a 3-foot x 5-foot minimum test panel for each panel type with the specified pattern and colors. Obtain the engineer's acceptance of the panel's pattern and color prior to production of the panels required for the contract. The accepted pattern and color test panels shall remain on the project site in a readily accessible location for the duration of the project. The accepted pattern and color sample panels will be the standard for all noise barriers on the project.

Manufacture noise barrier posts of the same materials throughout the project. Shop apply coating and coloring of the post and panels.

Unless otherwise shown and provided for in the plans, wall pattern shall contain textures with relief features of sufficient depth and quantity to be distinguishable at an observation distance of 500-feet. The color(s) and texture(s) chosen will be within the following parameters; however, at the discretion of the engineer, a single color and/or a single texture may be selected for either side of the noise barrier.

| | Freeway Side | Residential Side |
|----------------------|---|-------------------------|
| Number of colors | 2 | 2 |
| In the proportion of | **See Aesthetic Details on Noise Barrier Plan** | |
| Number of textures | | |
| In the proportion of | | |

The engineer will visually inspect panels for color consistency upon arrival at the project. The panels shall have no substantial variation in color from the accepted sample panel submitted for the project. All panels with substantial color variation will be rejected and shall be removed from the project.

B.3.3.2 Structural Steel

Submit to the engineer certification of compliance, including mill certifications and heat numbers, that structural steel conforms to the properties required on the plans and shop drawings, and is galvanized after fabrication by the hot-dip process according to ASTM A123. Galvanize all steel hardware and threaded fasteners, bolts, nuts, and washers according to ASTM A153.

Shop coat all steel galvanized surfaces exposed to view with an approved paint system as hereinafter specified. Clean galvanizing surfaces to be painted according to SSPC-SP1 to remove, chlorides, sulfates zinc salts, oil, dirt, organic matter and other contaminants. Brush Blast clean the surfaces according to SSPC-SP7 to create a slight angular surface profile (1.0 – 1.5 mils suggested) for adhesion. Do not fracture the galvanized finish or remove any dry film thickness during these processes.

After cleaning, provide a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface. The tie coat shall etch the galvanized surface and prepare the surface for the top coat. Apply a top coat matching the finished color specified in B.3.2. Use a pre-approved top coat that is resistant to the effects of the sun, and is suitable for use in a marine environment. Exercise care so as not to damage the painted surfaces during shipment and erection of the noise barriers.

Use one of the qualified paint sources and products given below. An equivalent system may be used with the written approval of the engineer. Supply the engineer with the product data sheets before applying any coating. The product data sheets shall indicate the mixing and thinning directions, the recommended spray nozzles and pressures, the minimum drying time for shop applied coats, and the recommended procedures for coating galvanized bolts, nuts, and washers.

| Producer | Coat | Products | Dry Film Minimum Thickness (mils) | Minimum Time Between Coats (hours) |
|--|-------------|---|--|---|
| Sherwin Williams Co. (847) 330-1250 | Tie | Recoat Epoxy Primer B67-5 Series/B67V5 | 2.0 to 4.0 | 6 |
| | Top | Acrolon 218 HS Polyurethane, B65-650 | 2.0 to 4.0 | NA |
| Carboline Co. (314) 644-1000 | Tie | Rustbond Penetrating Sealer FC | 1 | 36 |
| | Top | Carboline 133 LH | 4 | NA |
| Wasser Corp. (253) 850-2967 | Tie | MC-Ferrox B 100 | 3.0 to 5.0 | 8 |
| | Top | MC-Luster 100 | 2.0 to 4.0 | NA |

B.3.3.3 Sound Transmission Loss (TL)

Submit to the engineer certification of compliance that the sound transmission loss of the panel material, when tested according to ASTM Standard E90, achieves a transmission loss as specified in B.2.5.

B.3.3.4 Accelerated Weathering

Submit to the engineer certification of compliance that all coatings on barrier components, with the exception of structural steel and wood components comply with the following requirements when tested according to ASTM Standard G155, G153, or G152 after 2400 hours of exposure on a cement based test specimen(s):

1. No checking when rated according to ASTM D660.
2. No cracking when rated according to ASTM D661.
3. No blistering when rated according to ASTM D714.

4. No difference in adhesion between the unexposed control sample and an exposed sample when tested according to ASTM D3359, Method A.
5. No chalking less than #7 rating when rated according to ASTM D4214.
6. No color change greater than 5 NBS units when measured according to ASTM D2244, using illuminant D65 and the 1964 10-degree standard observer.

B.3.3.5 Corrosion Resistance (Salt Fog Exposure)

Submit to the engineer certification of compliance that all coated steel components, with the exception of structural steel, has a coating system that has been tested for corrosion resistance according to ASTM B117 and comply with the following requirements:

1. No checking when rated according to ASTM D660.
2. No blistering when rated according to ASTM D714.
3. No loss of adhesion when tested according to ASTM D3359 with no evidence of corrosion along the edges of the samples or along the score lines, or both, or other defects.

B.4 Project Submittal Requirements

Furnish required submittals according to the following:

B.4.1 Pre-Construction Submittals

Submit the following documents to the engineer for review by the Bureau of Structures Design Section, at least 14 calendar days prior to beginning any shop or field work:

1. Structural and foundation design calculations (1 set)
Design calculations shall be on 8½ x 11-inch sheets, neatly bound with a title sheet listing the complete project identification number and sound barrier designation. Structural and foundation calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.
2. Detailed design/shop drawings (3 sets)
Design/shop drawings shall conform to the contract plans and the requirements of these special provisions. The design/shop drawings shall consist of plan and profile sheets, details, explanatory notes, erection diagrams, aesthetic treatments, and other working plans. All dimensions, sizes of material, material information and other information necessary for the complete fabrication and construction of the noise barrier shall be designated on the appropriate sheets. The design/shop drawings shall be drawn to an appropriate scale on reproducible sheets 11 x 17-inches including borders. Each sheet shall carry the complete project identification number and noise barrier designation. Design/shop drawings shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.
3. Specifications regarding installation requirements and sequence of construction, including a detailed bill of materials (1 set).
4. Detailed color plan of the aesthetic treatments and finishes for the entire noise barrier (1 set).

5. Shipping, handling, and storage plan identifying methods or practices to limit post production damage (1 set).

B.4.2 Pre-Installation Submittals

Supply and deliver to the engineer the sample panel required under Section B.3.3.1 at least 14 calendar days prior to beginning production and/or installation of job materials. Acceptance of the sample panel will be by: Adam Janz, (920) 360-5398. If the panel is not acceptable, a second panel shall be produced and submitted for acceptance. Sample panel to be representative of quality for precast panel work after acceptance. Deliver test panels to a location determined by engineer for comparison purposes during production of project panels.

B.4.3 Payment Submittals

Submit certifications and test data as required under B.3 for all materials, including trade name of the products along with the name and address of the manufacturers.

B.4.4 Submittal Review

The engineer's review and acceptance of the drawings, calculations, and related material, submitted by the contractor, is for compliance with design intent only, and does not relieve the contractor from responsibility in regard to errors or omissions on said submittals.

The final accepted design documents and/or shop drawings will become a part of the contract. Any substitution of materials or dimensions contemplated by the contractor's submitted documents, different from materials or dimensions shown on the contract plans, shall be made only when approved by the engineer, and in such case, additional costs resulting from such substitution shall be borne by the contractor.

Ordering of materials by the contractor prior to acceptance of pertinent submittals shall be at the contractor's own risk.

C Construction

C.1 General

Construct the noise barriers at the locations shown on the plans, according to the contract specifications and design drawings and/or as directed by the engineer. Deliver all sound absorbing composite concrete components to the project site(s) as a finished component. A sound absorbing composite concrete system, which has the sound absorbing material glue-laminated or alternately affixed by a secondary adhesion method on the project site, will not be allowed.

Provide a minimum ten day notice to the engineer of the date that the fabrication of the noise barrier material will commence.

Inspect all materials delivered to the construction site for proper dimensions, honeycombing, cracks, voids, surface defects, consistency in color and texture, and any other damage or imperfections, prior to installation.

If any part of the noise barrier material fails to comply with any requirements of the contract specification, the component shall either be corrected, permanently marked as unacceptable and be disposed of by the contractor or accepted at a reduced price. The decision will be made by the engineer and is dependent on the severity of the specification deviation.

Erect noise barriers to avoid conflict with any existing facilities or utilities to remain in place. Any damage caused by construction activities shall be repaired by the contractor at no cost to the department.

Do not access N-70-121 via Richards Drive, unless prior approval is given by the engineer.

C.2 Fire Hydrant Location Signs

Furnish and install fire hydrant location sign(s). These shall be attached to the noise barrier at each location shown on the plans by a method as shown on the department's approved drawings. The signs shall conform and be of the type specified in the department's sign plate book, plate D9-54 and/or D9-54A.

Compensation for furnishing and placing the fire hydrant location signs shall be included in the contract price for Noise Barriers Double-Sided Sound Absorptive and no additional compensation therefore will be allowed.

C.3 Weep Hole Openings

Furnish and install weep hole openings for drainage at the locations and sized as noted on the plan. Install weep holes by drilling through the wall after erection of the noise barrier. Use 6" PVC Schedule 40 pipe sleeve conforming to ASTM D-1785. Epoxy 6" PVC Schedule 40 pipe sleeve into bored weep hole. PVC pipe sleeve shall fit snugly in cored hole through wall. Epoxy PVC pipe sleeve into bored weep hole in noise barrier. Locate and construct weep holes according to the plans and as the engineer directs. Weep holes shall be placed at the locations shown in the plans, unless approved by the engineer to adjust locations to fit field conditions. The engineer will field verify the height and location of the weep hole for positive drainage.

C.4 Name Plates

Furnish and install name plates conforming to the requirements of standard spec 506.2.4. Furnish and place one name plate on each noise barrier at the location indicated on the plans. Rigidly attach each plate to the barrier by a means approved by the engineer.

Compensation for furnishing and placing of name plates shall be included in the contract price for Noise Barriers, Double-Sided Sound Absorptive Structure and no additional compensation therefore will be allowed.

C.5 Structure Mounted Noise Barriers

Do not erect noise barriers mounted to bridge or retaining wall structures until after the concrete for bridge decks and parapets or retaining wall moment slabs and parapets have attained their specified 28-day strength.

For noise barriers mounted to moment slabs and parapets on top of MSE retaining walls, erection of the noise barrier is limited to two-thirds the height of the noise barrier acoustical line shown in the plans prior to placement of earth fill or pavement over the top of the moment slab as shown in the plans. Erection of the noise barrier in excess of two-thirds its height to the full height of the noise barrier acoustical line shown on the plans may not occur until after the earth fill or pavement structure over the top of the moment slab shown in the plans is complete.

C.6 Construction Tolerances

Install the posts and panels comprising the noise barrier plumb within 1/2-inch in 15-feet. Locate the posts to the line and grades as shown in the plans to within +/- 3/4-inch. Align horizontal joints of adjacent panels to a vertical tolerance of 1/4-inch. Where vertical adjustments are required for alignment, use a mortar base or steel shims. Galvanize and prime coat steel shims according to B.3.3.2.

D Measurement

The department will measure Noise Barriers Double-Sided Sound Absorptive by the square foot, acceptably completed, as the area the original plans show plus engineer-approved modifications to the plan quantity caused by plan corrections or revisions.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|----------------|--|------|
| 531.0300.S.001 | Noise Barriers Double-Sided Sound Absorptive N-70-121 | SF |
| 531.0300.S.002 | Noise Barriers Double-Sided Sound Absorptive N-70-130 | SF |
| 531.0300.S.003 | Noise Barriers Double-Sided Sound Absorptive N-70-131 | SF |
| 531.0300.S.004 | Noise Barriers Double-Sided Sound Absorptive N-70-140 | SF |

Payment is full compensation for providing noise barrier including: coloring and aesthetic treatment on panels, preparing the design drawings and calculations, furnishing and delivering sample and test panels, materials testing, furnishing materials test reports and certifications, excavation, preparing the site, constructing foundations, erecting posts and panels, and disposing of waste materials.

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13.5 Railing 42-Inch, Item SPV.0090.850.

A Description

This special provision describes work consisting of fabricating, painting, delivering and installing railings in turf areas.

B Materials

B.1 General

Provide materials meeting the requirements as shown on the plans and the applicable sections of the standard specifications as follows:

- Painting: Standard spec 517.2 and 517.3

Prior to fabrication, blast clean steel per SSPC-SP 6 and galvanize steel according to ASTM A 123. Repair zinc coating damaged during fabrication as specified in standard spec 635.3.4. Grind the welded joints to a smooth finish where shown in the plans.

Steel preparation includes the chamfering of sharp edges. Flatten all sharp edges by a single pass of a grinder or suitable device along the sharp edge. Condition any thermal cut edges to be painted before blast cleaning by shallow grinding or other cleaning to remove any hardened surface layer. Remove all evident steel defects exposed according to AASHTO M 160 prior to blast cleaning.

Epoxy paint coating system shall be according to epoxy paint coating system for structural steel, as shown on the department's approved list.

B.2 Painting

Clean all galvanizing surfaces per SSPC-SP1 to remove, chlorides, sulfates zinc salts, oil, dirt, organic matter and other contaminants. The cleaned surface should then be Brush Blast Cleaned per SSPC-SP7 to create a slight angular surface profile (1.0 – 1.5 mils suggested) for adhesion. Blasting should not fracture the galvanized finish or remove any dry film thickness.

After cleaning, provide a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface. The tie coat shall etch the galvanized rail and prepare the surface for the top coat. Apply a top coat matching the specified color. The tie and top coats should be of contrasting colors. Use a pre-approved top coat that is resistant to the effects of the sun, and is suitable for use in a marine environment. The various decorative fence components shall be painted with the tie and top coats before final assembly of the fence panels. Care should be taken to not damage the painted surface during panel assembly or fence installation.

Use one of the qualified paint sources and products given below. An equivalent system may be used with the written approval of the engineer.

| Producer | Coat | Products | Dry Film Minimum Thickness (mils) | Minimum Time Between Coats (hours) |
|--|------|---|-----------------------------------|------------------------------------|
| Sherwin Williams 1051 Perimeter Drive, Suite 710 Schaumburg, IL 60173 (847) 330-1562 | Tie | Recoatable Epoxy Primer B67-5 Series/B67V5 | 2.0 to 4.0 | 6 |
| | Top | Acrolon 218 HS Polyurethane , B65-650 | 2.0 to 4.0 | NA |
| Carboline 350 Hanley Industrial St. Louis, MO 63144 (314) 644-1000 | Tie | Rustbond Penetrating Sealer FC | 1 | 36 |
| | Top | Carboline 133 LH | 4 | NA |
| Wasser Corporation 4118 B Place NW Suite B Auburn, WA 98001 | Tie | MC-Ferrox B 100 | 3.0 to 5.0 | 8 |
| | Top | MC-Luster 100 | 2.0 to 4.0 | NA |

B.2 Color

Provide a finished color for the coating system for railing matching Federal Color 27038, semi-gloss black.

C Construction

Provide shop drawings according to the requirements of standard spec 506.3.2. Shop drawings shall contain material sizes and types, weld sizes and locations, and all necessary details, dimensions, and information to allow fabrication of the fence in conformance with the requirements of the contract. Do not begin fabrication prior to shop drawing review and acceptance by the engineer.

During construction and at the time of delivery the engineer will inspect the railing sections for proper fabrication and painting. The engineer will accept the product after the delivery is unloaded on the site. After the product is unloaded, the installation contractor shall signify in writing that the railing was received in acceptable condition per the engineer's inspection. Any damage to the railing after the acceptable delivery will be the responsibility of the installation contractor.

Complete all welding according to the applicable requirements of standard spec 506. No field welding, field cutting, or drilling will be permitted without the approval of the engineer.

Take special care during construction to minimize the number and size of touch-up spots. Follow the manufacturer's recommendations for damaged area repairs. The engineer will approve the field paint appearance prior to final acceptance.

Provide the engineer with the name, address, and phone number of a representative of the railing fabricator for coordination.

During handling, protect finish coating from damage. If damaged during handling the railing may be rejected by the engineer or engineer may direct fabricator that the finish shall be repaired according to the manufacturer's recommendations.

D Measurement

The department will measure Railing 42-Inch, by the linear foot, acceptably completed and in place.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-----------------|------|
| SPV.0090.850 | Railing 42-Inch | LF |

Payment is full compensation for furnishing railing, masonry anchor bolts, excavating and concrete setting base, including restoration.

13.6 Salvage Noise Barrier Panels, Item SPV.0105.900.

A Description

This work consists of removing, storing on site and reinstalling noise barrier panels at the USH 10/Oneida Street Northeast Ramp as shown in the plans and according to the requirements of standard spec 204 and as hereinafter provided.

B (Vacant)

C Construction

Remove the noise barrier panels. Do not disassemble or damage the panels. Once removed, store the panels onsite. Reinstall the noise barrier panels after the storm sewer installation shown in the plans. If the contractor damages noise wall barrier components through its own operations then the contractor shall replace them at no expense to the department.

D Measurement

The department will measure Salvage Noise Barrier Panels 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.0105.900 | Salvage Noise Barrier Panels | LS |

Payment is full compensation for removing the existing panels and components from the supports, transporting and storing; for reinstalling in the existing location and adjusting; and for salvaging any materials or components to reinstall the panels.

13.7 Temporary Wall Wire Faced Mechanically Stabilized Earth LRFD/QMP, Item SPV.0165.850.

A Description

This special provision describes designing, furnishing materials and erecting a temporary earth retention system according to the lines, dimension, elevations and details as shown on the plans and provided in the contract.

This special provision describes the quality management program (QMP) for Mechanically Stabilized Earth (MSE) walls. A quality management program is defined as all activities, including process control, inspection, sampling and testing, and necessary adjustments in the process that are related to the construction of the MSE wall, which meets all the requirements of this provision.

This special provision describes contractor quality control (QC) sampling and testing for backfill density testing, documenting those results, and documenting related production and placement process changes. This special provision also describes department quality verification (QV), independent assurance (IA), and dispute resolution.

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Temporary Wire Faced Mechanically Stabilized Earth Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show

the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit electronically to the engineer and Bureau of Structures for review and acceptance. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current Standard Specifications for Highway and Structure Construction (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the plans.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as stated on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratios (CDR) for sliding, eccentricity, and bearing checks is performed by the department and are provided in the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and panel-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

The wall facings shall be designed according to AASHTO 11.10.2.3. A fine metallic screen and a geotextile shall be used at the front face of the wall to retain the fines of the soil mass.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 8 feet. The soil reinforcement shall be the same length from the bottom to the top of the wall. All soil reinforcement layers shall be connected to wire facing panels. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be 24 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 12 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

The nominal long term design strength to be used in steel reinforcement and connector design shall consider the corrosion losses and based upon conditions at the end of the design life, , as described in Chapter 14 of the WisDOT LRFD Bridge Manual and AASHTO LRFD Section 11.

Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. Unless approved by the Bureau of Structures cutting or altering of the basic structural section of either the strip or grid at the site is prohibited, a minimum clearance of 3" shall be maintained between any obstruction and reinforcement, and splicing steel reinforcement is not allowed.

The minimum embedment of the MSE wall shall be 1 foot 6 inches, or as given on the contract plan. Step the wall to follow the general slope of the ground line. Frost depth shall not be considered.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Steel Components

Provide steel reinforcement that meets the following requirements:

- **Welded Wire Fabric Soil Reinforcement**
Provide shop fabricated welded wire reinforcement from cold drawn steel wire that has a yield stress of 65,000 psi and conforming to the minimum requirements of ASTM A1064 and be welded into the finished configuration according to ASTM A1064. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department.
- **Steel Reinforcing Strips and Tie Strips**
As an alternate to welded wire reinforcing mesh, provide steel reinforcing strips or ladder reinforcing strips or equal, hot-rolled from bars, to the required shape and dimensions meeting the requirements of ASTM A572 Grade 65 minimum. Tie strips shall be shop fabricated of hot-rolled steel meeting the requirements of ASTM A1011 Grade 50.
- **Welded Wire Fabric Facing Panels**
Provide welded wire fabric that is used to fabricate the facings of the wire-faced wall that has a yield stress of 65,000 psi. All steel shall be shop fabricated of cold drawn steel wire conforming to the minimum requirements of ASTM A1064 and be welded into the finished configuration according to ASTM A1064. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department.
- **Fasteners**
High strength bolts meeting the requirements of AASHTO M164 or equivalent.
- **Connector Pins and Mat Bars**
Connector pins and mat bars fabricated from cold drawn steel wire meeting the requirements of ASTM A82.
- **Metallic Screen**
Provide a steel metallic screen. The metallic screen should have an approximate opening of 1/4" and be made of 0.025" (minimum) gauge wire.

B.3.2 Geotextile

Geotextile shall be used behind the metallic screen. Use geotextile as recommended by the wall manufacturer. If none is recommended, use Type DF (schedule B) as shown in standard spec 645 or as specified on the contract plans. Deliver in a protective wrap and keep protected from ultraviolet light until incorporated into the work.

B.3.3 Backfill

Furnish and place backfill for wall as shown on the plans and as herein provided.

Use natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. Do not use foundry sand, bottom ash, blast furnace slag, crushed/recycled concrete, crushed/milled asphaltic concrete or other potentially corrosive material.

Provide material that conforms to the following gradation requirements as per AASHTO T27.

| Sieve Size | % by Weight Passing |
|------------|---------------------|
| 1 inch | 100 |
| No. 40 | 0-60 |
| No. 200 | 0-15 |

The material shall have a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90. Provide the percent by weight, passing the #4 sieve.

In addition, backfill material shall meet the following requirements.

| Test | Method | Value |
|----------------------------|-----------------------------|---|
| pH | AASHTO T-289 | 5.0 – 10.0 |
| Sulfate content | AASHTO T-290 | 200 ppm max. |
| Chloride content | AASHTO T-291 | 100 ppm max. |
| Electrical Resistivity | AASHTO T-288 | 3000 ohm-cm min. |
| Organic Content | AASHTO T-267 | 1.0% max. |
| Angle of Internal Friction | AASHTO T-236 ^[1] | 30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2) |

- ^[1] If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification. If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM 5821, on the R-4 material. If more than 90% of the material is fractured on one face and more than 50% is fractured on two faces, the material meets the specifications and the angle of internal friction can be assumed to be 30 degrees. The second method allows testing all P-1" material, as per AASHTO T-236, with a large shear box. Test results of this second method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

Prior to placement of the backfill, obtain and furnish to the engineer a certified report of test results that the backfill material complies with the requirements of this specification. Specify the method used to determine the angle of internal friction. This certified report of test shall be less than 6 months old. Tests will be performed by a certified independent laboratory. In addition, when backfill characteristics and/or sources change, provide a certified report of tests for the new backfill material. Additional certified report of tests (except Angle of Internal Friction test), are also required. These additional backfill tests may be completed at the time of material production or material placement, with concurrence of the engineer. If this additional testing is completed at the time of material production, complete testing for every 2000 cubic yards of backfill or portion thereof. If this additional testing is completed at the time of material placement, complete testing for every 2000 cubic yards of backfill, or portion thereof, used per wall. All certified report of these test results shall be less than 6 months old and performed by a certified independent laboratory.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the MSE wall shall be according to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the bottom of the wall unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store any materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facings, soil reinforcement, or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place and compact material beyond the reinforced soil zone to allow for proper compaction of material within the reinforced zone. The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back wall facing. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing.

C.2 Compaction

Compact all backfill behind the wall as specified in standard spec 207.3.6. Compact the backfill to 95.0% of maximum dry density as determined by AASHTO T-99 (modified to compute densities to the nearest 0.1 pcf).

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the wall face. Do not use sheepsfoot or padfoot rollers within the reinforced soil zone.

A minimum of 3 inches of backfill shall be placed over the MSE reinforcement prior to working above the reinforcement.

C.3 Wall Components

C.3.1 General

Erect welded wire facing and other associated elements according to the wall manufacturer's construction guide. Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place remaining courses in vertical or battered positions as shown on the contract plans.

The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill. Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstruction in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

When using a temporary wall for four months or more or when the installation of a permanent wall facing will not occur for four months or more after placement of any geotextile material, cover the exposed geotextile material in the wall as quickly as practical, to prevent damage caused by exposure to ultraviolet light.

C.3.2 Tolerances

- The overall vertical tolerance of the wall and the horizontal alignment tolerance shall not exceed 3 inches per 10 feet for permanent installations.
- For battered wire facing, the final deviation from the design batter shall be within ± 1 inch for each 10 feet of battered wall height.

C.4 Quality Management Program

C.4.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform MSE wall construction work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review and acceptance. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
3. A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Descriptions of stockpiling and hauling methods.
5. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
6. Location of the QC laboratory, retained sample storage, and other documentation.
7. A summary of the locations and calculated quantities to be tested under this provision.
8. A proposed sequencing plan of wall construction operations and random test locations.

C.4.2 Quality Control Personnel

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

If an Assistant Certified Technician (ACT) is performing sampling or testing, a certified technician must coordinate and take responsibility for the work an ACT performs. Have a certified technician ensure that all sampling and testing is performed correctly, analyze test results, and post resulting data. No more than one ACT can work under a single certified technician.

C.4.3 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to

the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at <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.1) every 2,250 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM Method D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

C.4.6 Department Testing

C.4.6.1 General

- (1) The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all QV and IA personnel for the project, and provide test results to the contractor within 2 business days after the department obtains the sample.

C.4.6.2 Quality Verification (QV) Testing

- (1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.3.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.
- (2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.
- (3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.
- (4) The department will conduct QV Proctor and gradation tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.
- (5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.6.3 Independent Assurance (IA)

- (1) Independent assurance is unbiased testing the department performs to evaluate the department's QV and the contractor's QC sampling and testing, including personnel qualifications, procedures, and equipment. The department will perform an IA review according to the department's independent assurance program. That review may include one or more of the following:
 1. Split sample testing.
 2. Proficiency sample testing.
 3. Witnessing sampling and testing.

4. Test equipment calibration checks.
 5. Reviewing required worksheets and control charts.
 6. Requesting that testing personnel perform additional sampling and testing.
- (2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.6.4.

C.4.6.4 Dispute Resolution

- (1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E178 to evaluate potential statistically outlying data.
- (2) Production test results, and results from other process control testing, may be considered when resolving a dispute.
- (3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product or work, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C.5 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils Engineer two working days to review the foundation.

D Measurement

The department will measure the Temporary Wall Wire Faced Mechanically Stabilized Earth bid items by the square foot, acceptably completed at locations the plans show, measured as the area of exposed face in the plane of the wall from the front face ground line of the wall to the retained grade. Temporary Walls used for staged construction in multiple configurations will be measured once based on the configuration with the largest area of exposed face.

E Payment

The department will pay for accepted measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0165.850 | Temporary Wall Wire Faced Mechanically Stabilized Earth LRFD/QMP | SF |

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system, constructing the retaining system including drainage system; providing backfill, backfilling, compacting, developing/completing/documenting the quality management program, performing compaction testing; and for covering geotextile.

Payment limit for all walls is the line of minimum embedment per section B.2. No payment will be made for additional embedment detailed for construction purposes.

Parapets, railings, vehicle barriers and its support, abutment bodies and other items above the wall will be paid for separately. Concrete facings, facing leveling pads or footings, and copings will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price for those items.

SPV.0165.850 (20170629)

13.8 Wall Modular Block Gravity Landscape (STA 51 ONB+74 – STA 342 TSEB+00), Item SPV.0165.851.

A Description

This special provision describes designing, furnishing materials and erecting a permanent earth retention system according to the lines, dimension, elevations and details as shown on the plans and provided in the contract. The design life of the wall and all wall components shall be 75 years minimum.

B Materials

B.1 Proprietary Wall Systems

The supplied wall system must be from the department's approved list of Modular Block Gravity Landscape Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract. The location of the plant manufacturing the facing units shall be furnished to the engineer at least 14 days prior to the project delivery.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by contacting the Bureau of Structures, Structures Maintenance Section 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.

Walls shall be designed for a minimum live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as shown on the plans.

Walls shall be designed for a minimum factored bearing resistance of 1,000 psf.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratio (CDR) for sliding, eccentricity, and bearing checks is provided by the department and are provided on the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. Internal stability shall also be considered at each block level. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. The width of the modular block from front face to back face of the wall shall be included in the design computations and shown on the wall shop drawings. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software program used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

Wall facing units shall be designed according to AASHTO LRFD 11.10.2.3.

The minimum embedment of the wall shall be 1 foot 6 inches below finished grade, or as given on the plans. All walls shall be provided with a concrete or base aggregate leveling pad. Minimum wall embedment does not include the leveling pad depth. Step the leveling pad to follow the general slope of the ground line. Frost depth shall not be considered in designing the wall for depth of leveling pad.

Wall facing units shall be installed on a concrete leveling pad or base aggregate leveling pad. The bottom row of blocks shall be horizontal and 100% of the block surface shall bear on the leveling pad.

Concrete leveling pads shall be as wide as the proposed blocks plus six inches, with 6 inches of the leveling pad extending beyond the front face of the blocks. The minimum thickness of the leveling pad shall be 6 inches.

Base aggregate leveling pads shall be as wide as the blocks plus 12 inches, and the modular blocks shall be centered on the leveling pad. The minimum thickness of the leveling pad shall be 12-inches after compaction. The leveling pad shall be made from base aggregate dense 1 1/4-inch in conformance with standard spec 305.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Wall Facing

Wall facing units shall consist of precast modular concrete blocks. Furnish concrete produced by a dry-cast or wet-cast process. Concrete for all blocks shall not contain less than 565 pounds of cementitious materials per cubic yard. The contractor may use cement conforming to standard spec 501.2.1 or may substitute for portland cement at the time of batching conforming to standard spec 501.2.6 for fly, 501.2.7 for slag, or 501.2.8 for other pozzolans. In either case the maximum total supplementary cementitious content is limited to 30% of the total cementitious content by weight.

Dry-cast concrete blocks shall be manufactured according to ASTM C1372 and this specification.

All units shall incorporate a mechanism or devices that develop a mechanical connection between vertical block layers. Units that are broken, have cracks wider than 0.02" and longer than 25% of the nominal height of the unit, chips larger than 1", have excessive efflorescence, or are otherwise deemed unacceptable by the engineer, shall not be used within the wall. A single block type and style shall be used throughout each wall. The color and surface texture of the block shall be as given on the plan.

The top course of facing units shall be as noted on the plans, either;

- Solid precast concrete unit designed to be compatible with the remainder of the wall. The finishing course shall be bonded to the underlying facing units with a durable, high strength, flexible adhesive compound compatible with the block material.
- A formed cast-in-place concrete cap. A cap of this type shall have texture, color, and appearance, as noted on the plans. The vertical dimension of the cap shall not be less than 3 1/2 inches. Expansion joints shall be placed in the cap at a maximum spacing of 20 feet unless noted otherwise on the plan. Use Grade A, A-FA, A-S, A-T, A-IS, A-IP or A-IT concrete conforming to standard spec 501 as modified in standard spec 716. Provide QMP for cast in place cap and coping concrete as specified in standard spec 716, Class II Concrete.

Block dimensions may vary no more than $\pm 1/8$ inch from the standard values published by the manufacturer. Blocks must have a minimum depth (front face to back face) of 8 inches. The minimum front face thickness of blocks shall be 4 inches measured perpendicular from the front face to inside voids greater than 4 square inches. The minimum allowed thickness of any other portions of the block is 1 3/4 inches. The front face of the blocks shall conform to plan requirements for color, texture, or patterns.

If pins are used to align modular block facing units, they shall consist of a non-degrading polymer, or hot dipping galvanized steel and be made for the express use with the modular block units supplied, to develop mechanical interlock between facing unit block layers. Connecting pins shall be capable of holding the wall in the proper position during backfilling. Furnish documentation that establishes and substantiates the design life of such devices.

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.

For base aggregate leveling pad conform to item 305.0120 Base Aggregate Dense 1 1/4-Inch.

B.3.2 Material Testing

Provide independent quality verification testing of project materials according to the following requirements:

| Test | Method | Requirement | |
|--|---------------------------|--|------------|
| | | Dry-cast | Wet-cast |
| Compressive Strength (psi) | ASTM C140 | 5000 min. | 4000 min. |
| Air Content (%) | AASHTO T152 | N/A | 6.0 +/-1.5 |
| Water Absorption (%) | ASTM C140 | 6 max. ^[3] | N/A |
| Freeze-Thaw Loss (%) 40 cycles, 5 of 5 samples 50 cycles, 4 of 5 samples | ASTM C1262 ^[1] | 1.0 max. ^{[2][3]} 1.5 max. ^{[2][3]} | N/A |

[1] Test shall be run using a 3% saline solution and blocks greater than 45 days old.

[2] Test results that meet either of the listed requirements for Freeze-Thaw Loss are acceptable.

[3] The independent testing laboratory shall control and conduct all sampling and testing. Prior to sampling, the manufacturer's representative shall identify materials by lot. Five blocks per lot shall be randomly selected for testing. Solid blocks used as a finishing or top course shall not be selected. The selected blocks shall remain under the control of the person who conducted the sampling until shipped or delivered to the testing laboratory. All pallets of blocks within a lot shall be strapped or wrapped to secure the contents and tagged or marked for identification. The engineer will reject any pallet of blocks delivered to the project without intact security measures. At no expense to the department, the contractor shall remove all rejected blocks from the project. If a random sample of five blocks of any lot tested by the department fails to meet any of the above testing requirements, the entire lot will be considered non-conforming.

The contractor and fabricator shall coordinate with the independent testing agency to ensure that strength and air content samples can be taken appropriately during manufacturing. At the time of delivery of materials, furnish the engineer a certified report of test from an AASHTO-registered or ASTM-accredited independent testing laboratory for each lot.

The certified test report shall include the following:

- Project ID
- Production process used (dry-cast or wet-cast)
- Name and location of testing facility
- Name of sampling technician
- Lot number and lot size

Testing of project materials shall be completed not more than 18 months prior to delivery. Independent testing frequency shall not exceed 5000 blocks for dry-cast blocks and the

lesser of 150 CY or 1 day's production for wet-cast blocks. The certified test results will represent all blocks within the lot. Each pallet of blocks delivered shall bear lot identification information. Block lots that do not meet the requirements of this specification or blocks without supporting certified test reports will be rejected and shall be removed from the project at no expense to the department.

Nonconforming materials will be subject to evaluation according to standard spec 106.5.

B.3.3 Backfill

Furnish and place backfill for the wall as shown on the plans and as hereinafter provided.

Wall Backfill, Type A, shall comply with the requirements for Coarse Aggregate Size No. 1 as given in standard spec 501.2.5.4. All backfill placed within a zone from the top of the leveling pad to the top of the final layer of wall facing units and within 1 foot behind the back face of the wall shall be Wall Backfill, Type A. This includes all material used to fill openings in the wall facing units.

A layer of Geotextile Type "DF" (Schedule B) shall be placed vertically between the backfill and the Type A backfill. The geotextile shall extend from the top of the leveling pad to 6 inches below the surface of the retained soil. The geotextile shall then wrap across the top of the Type A backfill to the back of block wall facing.

Backfill placed between retained soil and Type A backfill shall comply with the requirements for Granular Backfill Grade 1 as contained in standard spec 209.2.2. The contractor may substitute Type A Backfill for Granular Backfill Grade 1.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the wall and the leveling pad shall be according to standard spec 206. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction. Backfilling shall closely follow erection of each course of wall facing units.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facing units or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back face of modular blocks. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing units.

C.2 Compaction

Compact wall backfill Type A with at least three passes of lightweight manually operated compaction equipment acceptable to the engineer.

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet of the back face of the wall should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet of the modular blocks.

C.3 Wall Components

Erect wall facing units and other associated elements according to the wall manufacturer's construction guide and to the lines, elevations, batter, and tolerances as shown on the plans. Center the initial layer of facing units on the leveling pad; then level them and properly align them. Fill formed voids or openings in the facing units with wall backfill, Type A. Remove all debris on the top of each layer of facing units, before placing the next layer of facing units.

Install all pins, rods, clips, or other devices used to develop mechanical interlock between facing unit layers according to the manufacturer's directions.

C.4 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan.

D Measurement

The department will measure Wall Modular Block Gravity Landscape by the square foot, acceptably completed, measured at the front face of wall as defined by the pay limits the contract plans show. Unless the engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

E Payment

The department will pay for accepted measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---|------|
| SPV.0165.851 | Wall Modular Block Gravity Landscape (STA 51 ONB+74 – STA 342 TSEB+00) | 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, 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, 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.0165.851 (20170629)

13.9 Prestressed Precast Concrete Wall Panel R-70-141, Item SPV.0165.852.

A Description

This special provision describes constructing precast prestressed concrete wall panels with heights and patterns as shown on the plans including product design, fabrication, transportation, erection, anchorage and other related items. The design life of the precast concrete wall panels and all panel components shall be 75 years.

These specifications provide for prestressing concrete panels by the pretensioning method. In this method, stress the reinforcing tendons initially, then place and cure the concrete and release the stress from the anchorages to the concrete after developing specified concrete strength.

B Materials

B.1 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: erection drawings, production drawings, complete design calculations, explanatory notes, supporting materials, and specifications.

Erection drawings shall conform to the contract plans and consist of member piece marks and completely dimensioned size and shape of each member; plans and/or elevations locating and defining all products furnished by manufacturer; sections and details showing connections, cast-in items and their relation to the structure; relationship to adjacent material including footings and copings; joints between members and structure; description of all loose, cast-in and field hardware; field installed anchor location drawings; erection sequences, when required to satisfy stability, and handling requirements; and all dead, live and other applicable loads used in the design.

Production drawings shall conform to the contract plans and consist of elevation view of each member; sections and details to indicate quantities and position of reinforcing steel, anchors, inserts, etc.; handling devices; dimensions and finishes; prestress strand quantities; initial prestress forces; material strengths; estimated cambers; and methods for storage and transportation.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 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, experienced in the design of Prestressed Precast Concrete Wall Panels.

The design of the Prestressed Precast Concrete Wall Panel 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.

Design and construct the panels according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. Design panels and components to withstand initial handling, transportation, and erection stress limits; dead loads; wind load of 40 pounds per square foot; suction load of 20 pounds per square foot; thermal stresses; and other loads specified. Although the cavity shall remain free of backfill and debris, consider backfill within the cavity not exceeding the finish grade elevation at the front face of wall for design. In addition to the above loads also design inserts and connection assemblies for the loads indicated on the plans and a horizontal force equal to at least 20% of the dead weight of the panel and coping.

Provide a minimum prestress of 250 pounds per square inch after losses and minimum temperature and shrinkage reinforcement as required by AASHTO LRFD 5.10.8.

B.2 Submittals

Submit on request reports on materials, compressive strength tests on concrete and water absorption tests on units.

Submit to the engineer, for acceptance and placing on file before commencing, one set of the submittals that the contractor has checked. In addition, provide two sets to the Region office, Adam Janz, (920) 360-5398, and one set to the Bureau of Structures for acceptance and inspection purposes. Only after acceptance by the Region may panel fabrication

commence. The engineer may refuse prints of submittals that are not clear and legible. If the engineer requests, submit one additional copy of submittals for review. After acceptance, furnish as many copies of submittals as required. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to erect the wall panels.

The submittals become a part of the contract, provided any differences between the production drawings and the plans are approved by the engineer and provided those changes are made at no additional expense to the department.

After initial submittal and acceptance, make no deviation from the production drawings or changes to them without the engineer's further review and acceptance.

The engineer's review of submittals is only a review of the character and sufficiency of the details and does not relieve the contractor from responsibility in regard to errors or omissions on those drawings.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All certifications related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 General

Furnish materials conforming to the following:

| Material | Standard Spec Section |
|---|------------------------------|
| Masonry Anchors | 502 |
| Coated High Strength Bar Steel Reinforcement | 505 |
| Pretensioning Reinforcement | 503 |
| Welded Steel Wire Fabric for Concrete Reinforcement | 505 |
| Structural Steel and Miscellaneous Metals | 506 |
| Elastomeric Bearing Pads | 506 |

Galvanize or furnish stainless steel materials for all hardware incorporated into the finished structures. (Not including reinforcement bars or pretensioning reinforcement.)

B.3.2 Concrete

Furnish concrete as specified in standard spec 501 and 716.

Ensure concrete attains a minimum 28-day compressive strength of 5,000 pounds per square inch. Base all tests on 6 inch by 12-inch cylinders, or 4 inch by 8-inch cylinders, provided the engineer develops and approves a correlation factor. Mold concrete cylinders in suitable steel or plastic molds. Cure concrete cylinders according to AASHTO T 23, except cure the cylinders with the member until release strength is obtained, then cure the cylinders according to AASHTO T 23.

Make and test the cylinders and make available to the engineer all information relating to the making and testing of cylinders. Notify the engineer immediately if concrete cylinder compressive strengths are less than the required 28-day strength. Keep neatly documented records of all cylinder testing on the day of the test and make them available to the engineer. Provide copies of the tests to the engineer by contract completion.

Furnish precast prestressed concrete panels cast from air entrained concrete. Use type I, IS, I(SM), IP, II, or III cement. The contractor may replace up to 30 percent of type I, II, or III portland cement with an equal weight of fly ash conforming to standard spec 501.2.6 or slag conforming to standard spec 501.2.7. Use only one source and replacement rate for work under a single bid item. Use a department-approved air entraining admixture conforming to standard spec 501.2.2 for air entrained concrete. Use only size No. 1 coarse aggregate conforming to standard spec 501.2.5.4.

Determine proportions for the mix within the following limitations:

| Proportion | Limitation |
|-------------------------|-------------------|
| Water cement ratio | 0.45 max. |
| Cement content | 610 lbs/cy min. |
| Air content of concrete | 3.5%-6.0% |
| Slump of mixed concrete | 4 inches max. |

If the mix does not contain a high range water reducer admixture, use a department-approved set retarding admixture as specified in standard spec 501.2.3.2 at the recommended rate if the ambient air temperature is 70 degrees F (21 degrees C) or higher. The contractor may use it at their option if the ambient air temperature is less than 70 degrees F (21 degrees C).

Do not add more admixtures or water after mixing is complete.

Use admixtures that do not have significant chlorides or chlorides added during manufacture.

Use admixtures that are compatible with all ingredients of the concrete mixture.

B.3.3 Pretensioning Reinforcement

Use high tensile strength, 7-wire strands conforming to ASTM A416, grade 270.

B.3.4 Lifting Devices

The type, number and locations of lifting devices and the method of handling the Prestressed Precast Concrete Wall Panels is determined by the fabricator and approved by the engineer. Lifting devices shall not be located on the exposed front face of the panel.

B.3.5 Accessories and Inserts

Furnish materials conforming to the following:

| Item | Material |
|----------------------------|---|
| Shims | High-density plastic or galvanized steel, 1/8-inch thick, smooth both sides |
| Carbon steel plate | ASTM A283 |
| Welded headed studs | AWS D1.1 – Type B |
| Bolts, nuts, rods, washers | Standard spec 506.2 |
| Neoprene Filler | Closed cell 100% virgin chloroprene (neoprene) filler meeting Section 14 of AASHTO LRFD |
| Inserts | Galvanized with minimum 12 Gage steel conforming to ASTM A1011 SS GR 33 or ASTM A653 GR 33 A. Inserts anchors to have 1 1/2-inch minimum cover. |
| Zinc coated fabrications | Conform to ASTM 385 for fabricating zinc coated work |

B.3.6 Footing and Coping

Furnish and place footings and coping as shown on the plans and as hereinafter provided.

Use a footing that consists of poured 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 leveling pad concrete as specified in standard spec 716, Class II Concrete.

For cast in place sections of cap and 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.

Use high-strength bar steel conforming to standard spec 505.

B.4 Plant Certification

Obtain all precast prestressed concrete wall panels from fabrication plants that comply with the department's plant certification program for precast prestressed concrete, unless the engineer agrees to accept these items according to the alternate procedures set forth in the department's plant certification program.

C Construction

C.1 Excavation and Backfill

Excavation will encompass the preparation of the foundation below the wall panel footing and to the limits and extents as shown on the plans, according to standard spec 206. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store materials or large equipment within 10 feet of the back of the wall.

C.2 Stressing Procedure

Stressing procedure shall be according to standard spec 503.3.1. Ensure all the strands of a pretensioned member are free from kinks or twists before starting tensioning operations. Ensure no strand unwinds more than one turn after starting tensioning operations.

Perform transfer of prestress to concrete after the concrete develops the minimum required strength for transfer determined by the test cylinders.

C.3 Placing and Fastening Steel

Placing and fastening steel shall be according to standard spec 503.3.1.1. Place all steel units in the position the plans show and hold firmly during concrete placing and setting as specified in standard spec 505.3.

Ensure that all prestressing steel is free of dirt, grease, wax, scale, rust, oil, or other foreign material that may prevent bonding between the steel and the concrete.

C.4 Placing Concrete

Handle and place the concrete as specified in standard spec 502.

C.5 Tolerances

Cast Prestressed Precast Concrete Wall Panels to plan dimensions within the following applicable tolerances:

| Item | Tolerance |
|---|--|
| Overall height of panel measured at the face exposed to view | $\pm 3/16$ -inch per 10 ft. |
| Overall width of panel measured at the face exposed to view | $\pm 3/16$ -inch per 10 ft. |
| Total thickness | $\pm 1/4$ -inch |
| Structural thickness | $\pm 1/4$ -inch |
| Variation from square or designated skew | $\pm 1/2$ -inch |
| Local smoothness, unconcealed surfaces | $\pm 1/4$ -inch per 10 ft. |
| Bowing | \pm Length/360, to a maximum of 1-inch |
| Warp (from adjacent corner) | $\pm 1/16$ -inch per ft. |
| Location of inserts | $\pm 1/2$ -inch |
| Tipping and flushness of inserts | $\pm 1/4$ -inch |
| Position of handling devices | ± 3 -inch |
| Reinforcing steel: Where position has structural implications or affects concrete cover Otherwise | $\pm 1/4$ -inch $\pm 1/2$ -inch |
| Location of strand: Perpendicular to panel Parallel to panel | $\pm 1/4$ -inch ± 1 -inch |
| Dimensions of architectural features and rustications | $\pm 1/4$ -inch |

C.6 Curing

Cure concrete according to standard spec 503.3.2.2.

C.7 Surface Finish

Provide surface treatment as detailed in the plans. Provide a rubbed surface finish on the remaining exposed surfaces of prestressed concrete panels as specified in standard spec 502.3.7.3 before shipping from the plant. Exposed face to match approved mockup panel. Use rigid molds to maintain panels within specified tolerances conforming to shape, lines, and dimensions shown on the production drawings. Construct molds to withstand vibration method selected.

Coat bottom of panels with bitumastic after cutting strands flush. Do not coat top of panels.

C.8 Erection

Erect panels without damage to shape or finish. Replace or repair damaged panels. Do not drill or form holes through the precast prestressed wall facing panels to erect panels. An alternate method of anchoring/attaching the precast prestressed concrete wall panels may be submitted to the engineer for review and possible acceptance.

Place precast concrete wall panels so that their final position is vertical. Ensure that the vertical joint openings between panels are uniform and that decorative patterns between panels are aligned.

When panels require adjustment beyond design or tolerance criteria, discontinue affected work; advise engineer.

Verify structure, footings, anchors blocks, rods, couplers, clevises, and other anchor devices are ready to receive panels. Verify that wall panel footings are placed at the proper horizontal and vertical alignments and are ready to receive wall panels. Place elastomeric pad and shims behind panels to ensure proper horizontal alignment. Set panels on elastomeric bearing pads and shims and install base angles at ends of panels. Place a layer of Geotextile Type DF over the joint between the tilt up panel and the panel footing as shown on the plans. Shim vertical joints to get proper opening. Install and compress neoprene joint filler in the lap joints between panels. Fasten top of panels to deadman anchor block assemblies at MSE walls, as shown on the plans.

Touch-up scratched or damaged galvanized surfaces with 2 coats of zinc dust/zinc oxide paint. Clean and deburr the damaged and adjacent areas thoroughly before applying paint.

The cavity between the MSE wall and the panels shall remain free of backfill and debris throughout construction unless plans indicate otherwise or approved by the department's Bureau of Structures.

C.8.1 Erection Tolerances

| Item | Tolerance |
|---|----------------------|
| Plan location from wall reference line | ± 1/2-inch |
| Plan location from wall alignment | ± 1/2-inch |
| Top elevation from nominal top elevation | ± 1/4-inch |
| Support elevation from nominal elevation: Maximum low Maximum high | 1/2-inch 1/4-inch |
| Plumb in any 10 ft. of panel height | ± 1/4-inch |
| Maximum offset of matching edges and decorative patterns | ± 1/4-inch |
| Maximum offset of matching faces | ± 1/4-inch |
| Joint width (governs over joint taper) | ± 1/4-inch |
| Joint taper maximum | ± 3/8-inch |
| Joint taper over 10 ft. length | ± 1/4-inch |
| Differential bowing or camber as erected between adjacent members of the same design | ± 1/4-inch |

C.9 Adjusting

Adjust panels so joint dimensions are within tolerances.

D Measurement

The department will not measure Prestressed Precast Concrete Wall Panel. The square foot acceptably completed, at the front face of wall is defined by the pay limits the contract plans show. Unless the engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

E Payment

The department will pay for plan quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0165.852 | Prestressed Precast Concrete Wall Panel R-70-141 | SF |

Payment is full compensation for preparing the design drawings and calculations, production drawings, and coordination; for providing concrete and reinforcement steel for the cast-in-place concrete footings and copings, decorative surface finish, sample panels, prestressed precast concrete wall panels, including all concrete, grout, mortar, reinforcement steel, tie bars, bearing pads, geotextile Type DF, excavation, shims, masonry anchors, filler, anchor plates, angles, slotted inserts and other embedded metal; for casting and curing concrete; for jacking and prestressing; and for furnishing all handling, hauling and erecting. Deadman, anchor blocks, rods, couplers and clevises shall be produced and supplied to the job site under this item.

Parapets, railings, vehicle barriers, anchor slabs and their supports, abutment bodies and other items above the wall panel cap or coping will be paid for separately. Architectural Surface Treatment and Concrete Staining will be paid for separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price for these items.

SPV.0165.852 (20170223)

13.10 Wall Wire Faced Mechanically Stabilized Earth R-70-141, Item SPV.0165.853.

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 Wire Faced Mechanically Stabilized Earth Wall systems. Proprietary wall systems must conform to the requirements of this specification and be pre-approved for use by the department's Bureau of Structures. The department maintains a list of pre-approved proprietary wall systems. The name of the pre-approved proprietary wall system selected shall be furnished to the engineer within 25 days after the award of contract.

To be eligible for use on this project, a system must have been pre-approved by the Bureau of Structures and added to that list prior to the bid closing date. To receive pre-approval, the retaining wall system must comply with all pertinent requirements of this provision and be prepared according to the requirements of Chapter 14 of the department's LRFD Bridge Manual. Information and assistance with the pre-approval process can be obtained by

contacting the Bureau of Structures, Structures Maintenance Section in Room 601 of the Hill Farms State Transportation Building in Madison or by calling (608) 266-8494.

B.2 Design Requirements

It is the responsibility of the contractor to submit a design and supporting documentation as required by this special provision, for review and acceptance by the department, to show the proposed wall design is in compliance with the design specifications. The submittal shall include the following items for review: detailed plans and shop drawings, complete design calculations, explanatory notes, supporting materials, and specifications. The detailed plans and shop drawings shall include all details, dimensions, quantities and cross-sections necessary to construct the walls. Submit electronically to the engineer and Bureau of Structures for review and acceptance. Submit no later than 60 days from the date of notification to proceed with the project and a minimum of 30 days prior to the date proposed to begin wall construction.

The plans and shop drawings shall be prepared on reproducible sheets 11 inch x 17 inch, including borders. Each sheet shall have a title block in the lower right corner. The title block shall include the WisDOT project identification number and structure number. Design calculations and notes shall be on 8 ½ inch x 11 inch sheets, and shall contain the project identification number, name or designation of the wall, date of preparation, initials of designer and checker, and page number at the top of the page. All plans, shop drawings, and calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.

The design of the wall shall be in compliance with the current American Association of State Highway and Transportation Officials LRFD (AASHTO LRFD) Bridge Design Specifications with latest interim specifications for Mechanically Stabilized Earth Walls, WisDOT's current *Standard Specifications for Highway and Structure Construction* (standard spec), Chapter 14 of the WisDOT LRFD Bridge Manual and standard engineering design procedures as determined by the department. Loads, load combinations, load and resistance factors shall be as specified in AASHTO LRFD Section 11. The associated resistance factors shall be defined according to Table 11.5.7-1 in AASHTO LRFD.

Design and construct the walls according to the lines, grades, heights and dimensions shown on the plans, as herein specified, and as directed by the engineer. If the wall is installed in front of a bridge abutment or wing, it shall also be designed to resist the applied abutment/bridge lateral forces specified on the plans.

Walls parallel to supporting highway traffic shall be designed for the effects of highway surcharge loading equivalent of 2 feet soil surcharge weight or 240 psf. The design shall also consider the traffic barrier impact where applicable. Walls that do not carry highway traffic shall be designed for a live load surcharge of 100 psf according to Chapter 14 of the WisDOT LRFD Bridge Manual or as stated on the plans.

A maximum value of the angle of internal friction of the wall backfill material used for design shall be assumed to be 30 degrees without a certified report of tests. If a certified report of tests yields an angle of internal friction greater than 30 degrees, the larger test value may be used for design, up to a maximum value of 36 degrees.

An external stability check at critical wall stations showing Capacity Demand Ratios (CDR) for sliding, eccentricity, and bearing checks is performed by the department and are provided in the wall plans.

The design of the wall by the contractor shall consider the internal and compound stability of the wall mass according to AASHTO LRFD 11.10.6. The internal stability shall include soil reinforcement pullout, soil reinforcement rupture, and panel-reinforcement connection failure at each soil reinforcement level. The design shall be performed using the Simplified Method or Coherent Gravity Method. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life. Compound stability shall be computed for the applicable strength limits. Sample analyses and hand calculations shall be submitted to verify the output of any software used. The design calculations and notes shall clearly indicate the Capacity to Demand Ratios (CDR) for all internal and external stabilities as defined in AASHTO LRFD.

The wall facings shall be designed according to AASHTO LRFD 11.10.2.3. A fine metallic screen and a geotextile shall be used at the front face of the wall to retain the fines of the soil mass.

The minimum length of soil reinforcement measured from the back face of the wall shall be equal to 0.7 of the wall height, or as shown on the plan. In no case shall this length be less than 8 feet. The soil reinforcement shall be the same length from the bottom to the top of the wall. All soil reinforcement layers shall be connected to wire facing panels. The soil reinforcement shall extend a minimum of 3.0 feet beyond the theoretical failure plane in all cases. The maximum vertical spacing of soil reinforcement layers shall be 24 inches. The uppermost layer of the reinforcement shall be located between 6 inches and 12 inches below the bottom of an overlying slab, footing or top of the wall. The upper layers of the soil reinforcement shall also be checked to verify that they have sufficient tensile resistance against traffic barrier impact where applicable.

The nominal long term design strength to be used in steel reinforcement and connector design shall consider the corrosion losses and be based upon conditions at the end of the design life, as described in Chapter 14 of the WisDOT LRFD Bridge Manual and AASHTO LRFD Section 11.

Soil reinforcement shall be fabricated or designed to avoid piling, drainage structures or other obstacles in the fill without field modifications. Unless approved by the Bureau of Structures cutting or altering of the basic structural section of either the strip or grid at the site is prohibited, a minimum clearance of 3" shall be maintained between any obstruction and reinforcement, and splicing steel reinforcement is not allowed.

The minimum embedment of the MSE wall shall be 4 feet below finished grade, or as given on the plans. Step the wall to follow the general slope of the ground line.

B.3 Wall System Components

Materials furnished for wall system components under this contract shall conform to the requirements of this specification. All documentation related to material and components of the wall systems specified in this subsection shall be submitted to the engineer.

B.3.1 Steel Components

All steel components (except the metallic screen) of the MSE Walls shall be galvanized according to ASTM A123. Provide steel reinforcement that meets the following requirements:

- **Welded Wire Fabric Soil Reinforcement**

Provide shop fabricated welded wire reinforcement from cold drawn steel wire that has a yield stress of 65,000 psi and conforming to the minimum requirements of ASTM A1064 and be welded into the finished configuration according to ASTM A1064. A minimum galvanization coating of 2 oz/ft² or 3.4 mils thickness is required. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department.

- **Steel Reinforcing Strips and Tie Strips**

As an alternate to welded wire reinforcing mesh, provide steel reinforcing strips or ladder reinforcing strips or equal, hot-rolled from bars, to the required shape and dimensions meeting the requirements of ASTM A-572 Grade 65 minimum and galvanized to a minimum thickness of 3.4 mils. Tie strips shall be shop fabricated of hot-rolled steel meeting the requirements of ASTM A-1011 Grade 50.

- **Welded Wire Fabric Facing Panels**

Provide welded wire fabric that is used to fabricate the facings of the wire-faced wall that has a yield stress of 65,000 psi. All steel shall be shop fabricated of cold drawn steel wire conforming to the minimum requirements of ASTM A1064 and be welded into the finished configuration according to ASTM A1064. Replace welded wire fabric that has been damaged during handling, placing or backfilling at the direction of the engineer, at no expense to the department.

- **Fasteners**

Galvanized high strength bolts meeting the requirements of AASHTO M164 or equivalent.

- **Connector Pins and Mat Bars**

Connector pins and mat bars fabricated from cold drawn steel wire meeting the requirements of ASTM A82 and galvanized to according to ASTM A123 to a minimum thickness of 3.4 mils.

- Metallic Screen

Provide a stainless steel or galvanized steel metallic screen per ASTM A740. The metallic screen should have an approximate opening of 1/4" and be made of 0.025" (minimum) gauge wire.

B.3.2 Geotextile

Geotextile shall be used behind the metallic screen. Use geotextile as recommended by the wall manufacturer. If none is recommended, use Type DF (schedule B) as shown in standard spec 645 or as specified on the contract plans. Deliver in a protective wrap and keep protected from ultraviolet light until incorporated into the work.

B.3.3 Backfill

Furnish and place backfill for the wall as shown on the plans and as herein 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 as shown on the plans.

Use natural sand or a mixture of sand with gravel, crushed gravel or crushed stone. Do not use foundry sand, bottom ash, blast furnace slag, crushed/recycled concrete, crushed/milled asphaltic concrete or other potentially corrosive material.

Provide material that conforms to the following gradation requirements as per AASHTO T27.

| Sieve Size | % by Weight Passing |
|------------|---------------------|
| 1 inch | 100 |
| No. 40 | 0-60 |
| No. 200 | 0-15 |

The material shall have a liquid limit not greater than 25, as per AASHTO T89, and a plasticity index not greater than 6, as per AASHTO T90. Provide the percent by weight, passing the #4 sieve.

In addition, backfill material shall meet the following requirements.

| Test | Method | Value |
|----------------------------|-----------------------------|---|
| pH | AASHTO T-289 | 5.0 – 10.0 |
| Sulfate content | AASHTO T-290 | 200 ppm max. |
| Chloride content | AASHTO T-291 | 100 ppm max. |
| Electrical Resistivity | AASHTO T-288 | 3000 ohm-cm min. |
| Organic Content | AASHTO T-267 | 1.0% max. |
| Angle of Internal Friction | AASHTO T-236 ^[1] | 30 degrees min. (At 95.0% of maximum density and optimum moisture, per AASHTO T99, or as modified by C.2) |

[1] If the amount of P-4 material is greater than 60%, use AASHTO 236 with a standard-size shear box. Test results of this method may allow the use of larger angles of internal friction, up to the maximum allowed by this specification.

If the amount of P-4 material is less than or equal to 60%, two options are available to determine the angle of internal friction. The first method is to perform a fractured faces count, per ASTM 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.

C Construction

C.1 Excavation and Backfill

Excavation and preparation of the foundation for the MSE Walls shall be according to standard spec 206. The volume of excavation covered is limited to the width of the reinforced mass and to the depth of the bottom of the wall unless shown or noted otherwise on the plan. At the end of each working day, provide good temporary drainage such that the backfill shall not become contaminated with run-off soil or water if it should rain. Do not stockpile or store any materials or large equipment within 10 feet of the back of the wall.

Place backfill materials in the areas as indicated on the plans and as detailed in this specification. Backfill lifts shall be no more than 8-inches in depth, after compaction.

Conduct backfilling operations in such a manner as to prevent damage or misalignment of the wall facings, soil reinforcement, or other wall components. At no expense to the department, correct any such damage or misalignment as directed by the engineer. A field representative of the wall supplier shall be available during wall construction to provide technical assistance to the contractor and the engineer.

Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place and compact material beyond the reinforced soil zone to allow for proper compaction

of material within the reinforced zone. The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill.

Do not operate tracked or wheeled equipment on the backfill within 3 feet from the back face wall facing. The engineer may order the removal of any large or heavy equipment that may cause damage or misalignment of the wall facing.

C.2 Compaction

Compact all backfill behind the wall as specified in standard spec 207.3.6. Compact the backfill to 95.0% of maximum dry density as determined by AASHTO T-99 (modified to compute densities to the nearest 0.1 pcf).

Ensure adequate moisture is present in the backfill during placement and compaction to prevent segregation and to help achieve compaction.

Compaction of backfill within 3 feet from the back face of wall facing should be accomplished using lightweight compaction devices. Use of heavy compaction equipment or vehicles should be avoided within 3 feet from the back face of wall facing. Do not use sheepsfoot or padfoot rollers within the reinforced soil zone.

A minimum of 3 inches of backfill shall be placed over the MSE reinforcement prior to working above the reinforcement.

C.3 Wall Components

C.3.1 General

Erect welded wire facing and other associated elements according to the wall manufacturer's construction guide. Place and compact the MSE backfill to the level of the next higher layer of MSE reinforcement before placing the MSE reinforcement or connecting it to the wall facing. Place remaining courses in vertical or battered positions as shown on the contract plans.

The MSE reinforcement shall lay horizontally on top of the most recently placed and compacted layer of MSE backfill. Bending of MSE reinforcement that result in a kink in the reinforcement shall not be allowed. If skewing of the reinforcement is required due to obstruction in the reinforced fill, the maximum skew angle shall not exceed 15 degrees from the normal position unless a greater angle is shown on the plans. The adequacy of the skewed reinforcement in such a case shall be addressed by supporting calculations.

When the installation of a permanent wall facing will not occur for four (4) months or more after placement of any geotextile material, cover the exposed geotextile material in the wall as quickly as practical, to prevent damage caused by exposure to ultraviolet light.

C.3.2 Tolerances

- The overall vertical tolerance of the wall and the horizontal alignment tolerance shall not exceed 2 inches per 10 feet for permanent installations.

- Where a cast-in-place facing or a precast concrete panel facing is installed, the overall vertical tolerance shall not exceed ± 1 inch or as shown on the contract plans.
- For battered wire facing, the final deviation from the design batter shall be within $\pm 3/4$ inch for each 10 feet of battered wall height.
- The offset limit between consecutive rows of facing shall not exceed 1 inch.

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.atwoodsyste.ms.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.1) every 2,250 cubic yards of fill. Provide the region split samples of both within 72 hours of sampling, at the region laboratory. Test sites shall be selected using ASTM D3665. Provide Proctor test results to the engineer within 48 hours of sampling. Provide gradation test results to the engineer within 24 hours of sampling.

C.4.6 Department Testing

C.4.6.1 General

- (1) The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all QV and IA personnel for the project, and provide test results to the contractor within 2 business days after the department obtains the sample.

C.4.6.2 Quality Verification (QV) Testing

- (1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.3.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.
- (2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.
- (3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.
- (4) The department will conduct QV Proctor and gradation tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.
- (5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.6.3 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 Wire Faced Mechanically Stabilized Earth. The square foot, acceptably completed, at the front face of wall is defined by the pay limits the contract plans show. Unless the engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

E Payment

The department will pay for plan quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---|------|
| SPV.0165.853 | Wall Wire Faced Mechanically Stabilized Earth R-70-141 | SF |

Payment is full compensation for supplying a design and shop drawings; preparing the site, including all necessary excavation and disposal of materials; supplying all necessary wall components to produce a functional wall system, constructing the retaining system including drainage system; providing backfill, backfilling, compacting, covering geotextile, 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, vehicle barriers and their supports, abutment bodies and other items above the wall panel cap or coping will be paid for separately. Concrete facings, facing leveling pads or footings, deadman system, and copings will be paid separately.

Any required topsoil, fertilizer, seeding or sodding and mulch will be paid for at the contract unit price for those items.

SPV.0165.853 (20170629)

13.11 Wall Concrete Panel Mechanically Stabilized Earth R-08-002, Item SPV.0165.854.

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/in³ according to ASTM D1505.

An 18-inch wide geotextile shall be used on the backface of the wall panels to cover all panel joints. The geotextile shall meet the physical requirements stated in standard spec 645.2.4 for Geotextile, Type DF, Schedule B, except that the grab tensile strength shall be a minimum of 180 pounds in both the machine and cross-machine directions. The geotextile shall be attached with a standard construction adhesive suitable for use on concrete surfaces and cold temperatures. The adhesive shall be applied to the panels, not to the geotextile.

B.3.2 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 3/4-inch when measured

along a 10-foot straight edge. The maximum allowable offset in any panel joint shall be $\frac{3}{4}$ -inch. The overall vertical tolerance of the wall (plumbness from top to bottom) shall not exceed $\frac{1}{2}$ -inch per 10 feet of wall height. Erect the precast face panels to ensure that they are located within 1 inch from the contract plan offset at any location to ensure proper wall location at the top of the wall. Provide a $\frac{3}{4}$ -inch joint separation between all adjacent face panels to prevent direct concrete-to-concrete contact. Maintain this gap by the use of bearing pads and/or alignment pins. Failure to meet this tolerance shall cause the engineer to require the contractor to disassemble and re-erect the affected portions of the wall. In addition, imperfect molding, honeycombing, cracking or severe chipping of panels shall be cause of panel rejection.

C.4 Quality Management Program

C.4.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform MSE wall construction work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review and acceptance. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
3. A list of source locations, section and quarter descriptions, for all aggregate materials requiring QC testing.
4. Descriptions of stockpiling and hauling methods.
5. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
6. Location of the QC laboratory, retained sample storage, and other documentation.
7. A summary of the locations and calculated quantities to be tested under this provision.
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.atwoodsyste.ms.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 2 business days after the department obtains the sample.

C.4.6.2 Quality Verification (QV) Testing

- (1) The department will have an HTCP technician, or ACT working under a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified in C.4.2 for contractor testing personnel for each test result being verified. The department will notify the contractor before sampling so the contractor can observe QV sampling.
- (2) The department will conduct QV tests at the minimum frequency of 30% of the required contractor density, Proctor and gradation tests.
- (3) The department will locate density tests and gradation samples randomly, at locations independent of the contractor's QC work. The department will split each Proctor and gradation QV sample, testing half for QV, and retaining the remaining half for 10 business days.
- (4) The department will conduct QV Proctor and gradation tests in a separate laboratory and with separate equipment from the contractor's QC tests. The department will use the same methods specified for QC testing.
- (5) The department will assess QV results by comparing to the appropriate specification limits. If QV test results conform to this special provision, the department will take no further action. If density QV test results are nonconforming, the area shall be reworked until the density requirements of this special provision are met. If the gradation test results are nonconforming, standard spec 106.5 will apply. Differing QC and QV nuclear density values of more than 1.5 pcf will be investigated and resolved. QV

density tests will be based on the appropriate QC Proctor test results, unless the QV and QC Proctor result difference is greater than 3.0 pcf. Differing QC and QV Proctor values of more than 3.0 pcf will be investigated and resolved.

C.4.6.3 Independent Assurance (IA)

- (1) Independent assurance is unbiased testing the department performs to evaluate the department's QV and the contractor's QC sampling and testing, including personnel qualifications, procedures, and equipment. The department will perform an IA review according to the department's independent assurance program. That review may include one or more of the following:
 1. Split sample testing.
 2. Proficiency sample testing.
 3. Witnessing sampling and testing.
 4. Test equipment calibration checks.
 5. Reviewing required worksheets and control charts.
 6. Requesting that testing personnel perform additional sampling and testing.
- (2) If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend placement until action is taken. Resolve disputes as specified in C.4.6.4.

C.4.6.4 Dispute Resolution

- (1) The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.
- (2) Production test results, and results from other process control testing, may be considered when resolving a dispute.
- (3) If the project personnel cannot resolve a dispute, and the dispute affects payment or could result in incorporating non-conforming product or work, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party test results to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

C.5 Geotechnical Information

Geotechnical data to be used in the design of the wall is given on the wall plan. After completing wall excavation of the entire reinforced soil zone, notify the department and allow the Regional Soils Engineer two working days to review the foundation.

D Measurement

The department will not measure Wall Concrete Panel Mechanically Stabilized Earth. The square foot, acceptably completed, at the front face of wall is defined by the pay limits the contract plans show. Unless the engineer directs in writing, a change to the limits indicated on the contract plan, wall area constructed above or below these limits will not be measured for payment.

E Payment

The department will pay for plan quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0165.854 | Wall Concrete Panel Mechanically Stabilized Earth R-08-002 | 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.0165.854 (20170629)

14. Drainage and Erosion Control.

14.1 French Drain Construction.

Trenching for the French drain shall be restricted to a maximum of 200 LF at one time. Backfilling the French drain per the detail is required in the opened 200 LF prior to opening up additional 200 LF. French drains must be compacted lightly due to proximity of noisewalls to protect noisewall foundations. All restoration between French drains and noisewalls must be completed when French drains are constructed. French drains will need to be protected, kept clean, and are not to be driven on after they are constructed. Excavation required for the French drain is incidental to the storm sewer.

14.2 Erosion Control.

Supplement standard spec 107.20 as follows:

Perform construction operations in a timely and diligent manner, continuing all construction operations methodically from the initial topsoil stripping operation through the subsequent grading and finishing to minimize the period of exposure to erosion.

Immediately re-topsoil graded areas, as designated by the engineer, after grading is completed within those areas. Seed, fertilizer, and mulch or erosion mat all topsoiled areas as per ECIP after placement of topsoil.

Restore as much disturbed area as possible or as directed by the engineer with topsoil, seeding, fertilizer, and mulching or erosion mat at the end of each construction season to minimize erosion due to spring melt. As directed by the engineer, stabilize areas that cannot be restored with permanent measures at the end of each construction season with the soil stabilizer item provided in the plan.

Prepare an Erosion Control Implementation Plan (ECIP) amendment detailing an over-winter erosion control plan for 2018/2019. Present this ECIP amendment at a pre-winter shut down meeting with DNR and DEPARTMENT staff prior to October 15th.
(NER441-20141017)

14.3 Maintaining Drainage.

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

Use existing culvert pipes and existing drainage channels to maintain existing surface drainage.

Dewatering

If dewatering or pumping is required, treat the water to remove suspended solids before allowing it to enter any waterway or wetland. Filter pumped water through a media such as washed stone or allow settling in a sedimentation basin with sufficient capacity and size to provide an efficient means to filter the water from the dewatering operation before it is discharged back into the waterway or wetland. As part of the Erosion Control Implementation Plan (ECIP) submittal, supply all pertinent information and calculations used to determine the best management practice for dewatering at each location it is required.

Refer to the dewatering guidelines of WisDNR Storm Water Management Technical Standards, Code #1061, "Dewatering". This document can be found at the WisDNR website: <http://dnr.wi.gov/runoff/stormwater/techstds.htm>

The cost of all work and materials associated with water treatment and/or dewatering is incidental to the project.
(NER441-20150125)

14.4 Storm Sewer Backfill.

Replace standard spec 608.5.2 (1) with the following:

- (1) Payment for the Storm Sewer Pipe bid items is full compensation for providing all materials, including all special Y's, mitered sections, elbows and connections required; for excavating and wasting excess material, except rock excavation; for providing and removing sheeting and shoring; for forming foundation; for laying pipe; for sealing joints and making connections to new or existing features; for providing foundation and trench backfill material; for backfilling; for cleaning out; and absent the pertinent contract bid items, for restoring the work site.

(NER441-20170420)

14.5 Temporary Ditch Checks.

Complete work according to standard spec 628 and as herein provided. Erosion bales will not be allowed for construction of temporary ditch checks.

Delete standard spec 628.3.14(2) and replace it with the following:

- (2) Construct temporary ditch checks using a manufactured alternative from the PAL. Place temporary ditch checks across ditches at locations the plans show or as the engineer directs immediately after shaping the ditches or slopes. Excavate upstream sumps as the engineer directs.

Delete standard spec 628.4.17 and replace it with the following:

- (1) The department will measure Temporary Ditch Checks by the linear foot, acceptably completed.

(NER441-20141017)

14.6 Surface Drain Pipe Corrugated Metal Slotted, 18-Inch, Item 521.2005.S.01.

A Description

This special provision describes furnishing and installing slotted corrugated metal pipe surface drain as shown on the plans, according to standard spec 521, and as hereinafter provided.

B Materials

Furnish backfill material that is grade A, A-FA, A-S, A-T, A-IS, A-IP, or A-IT concrete conforming to standard spec 501.2 as modified in standard spec 716. Provide QMP for class III ancillary concrete as specified in standard spec 716.

C Construction

Prior to backfilling, plug the upper end of the slotted drain as shown on the plans or as approved by the engineer.

Prior to backfill operations adjacent to the slotted area of the slotted corrugated metal pipe surface drain pipe, install timber blocks in the slots according to the details as shown on the plans. Remove any material entering the pipe at no expense to the department.

Keep the timber blocks in place until final clean up operations are completed; at which time, remove the timber blocks.

Exercise care to avoid damage to the slotted corrugated metal pipe surface drain pipe. If any section of pipe is damaged or is unsatisfactory as determined by the engineer, replace the drain pipe at no expense to the department.

D Measurement

The department will measure Surface Drain Pipe Corrugated Metal Slotted (size), completed according to the contract and accepted, in place by the linear foot.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|---------------|---|------|
| 521.2005.S.01 | Surface Drain Pipe Corrugated Metal Slotted 18-Inch | LF |

Payment is full compensation for furnishing all materials; hauling and placing the pipe, including bands; making connections to existing inlets; furnishing concrete, end plug or cap; and for cleaning out and restoring site of work.

521-005 (20150630)

14.7 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 | $P_{200}^3 \geq 50\%$ | 2/source | 1/lift |
| AASHTO | T-89-02 | Determining the Liquid Limit of Soils | $LL^4 \geq 22\%$ | 2/source | 1/lift |
| AASHTO | T-90-00 | Determining the Plastic Limit and Plasticity Index of Soils | $PI^5 \geq 12\%$ | 2/source | 1/lift |

| | | | | | |
|--|----------|---|--|-----------------------|----------------------|
| AASHTO | T310-03 | In-Place Density and Moisture Content of Soils and Soil-Aggregates by nuclear Methods (Shallow Depth) | $DD^6 \geq 95\%$ of the MDD ⁷ | NA | 100'x100' Grid/lift |
| ASTM ² | D5084-03 | Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter | $K^8 \leq 1 \times 10^{-7}$ cm/sec | 1/source ⁹ | 1/site ¹⁰ |
| <p>Notes:</p> <ol style="list-style-type: none"> 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)

14.8 Manholes 10-Ft Diameter, Item SPV.0060.100.

A Description

Perform the work according to the applicable provisions of standard spec 611 and as detailed in the plans.

B Materials

Conform to standard spec 611.2 and the plan details.

C Construction

Conform to standard spec 611.3 and the plan details.

D Measurement

The department will measure Manholes 10-Ft Diameter as each individual unit, acceptably completed.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-------------------------|------|
| SPV.0060.100 | Manholes 10-Ft Diameter | EACH |

Payment is full compensation for providing all materials, including all masonry, conduit and sewer connections, steps and other fittings; for furnishing 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 and lids separately.

14.9 Manholes 12-Ft Diameter, Item SPV.0060.101.**A Description**

Perform the work according to the applicable provisions of standard spec 611 and as detailed in the plans.

B Materials

Conform to standard spec 611.2 and the plan details.

C Construction

Conform to standard spec 611.3 and the plan details.

D Measurement

The department will measure Manholes 12-Ft Diameter as each individual unit, acceptably completed.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-------------------------|------|
| SPV.0060.101 | Manholes 12-Ft Diameter | EACH |

Payment is full compensation for providing all materials, including all masonry, conduit and sewer connections, steps and other fittings; for furnishing 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 and lids separately.

14.10 Manholes 10-Ft X 12-Ft, Item SPV.0060.102.

A Description

Perform the work according to the applicable provisions of standard spec 611 and as detailed in the plans.

B Materials

Conform to standard spec 611.2 and the plan details.

C Construction

Conform to standard spec 611.3 and the plan details.

D Measurement

The department will measure Manholes 10-Ft X 12-Ft as each individual unit, acceptably completed.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|------------------------|------|
| SPV.0060.102 | Manholes 10-Ft X 12-Ft | EACH |

Payment is full compensation for providing all materials, including all masonry, conduit and sewer connections, steps and other fittings; for furnishing 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 and lids separately.

14.11 Pond Outlet Control Manhole, Item SPV.0060.103.

A Description

The specification covers all manhole structures with baffle walls for restrictor outlets from stormwater ponds. Furnish and install concrete manhole structure with baffle wall and restrictor holes, according to standard spec 501 and 611, as shown on the plan, and as hereinafter provided.

B Materials

Furnish and install reinforced concrete pipe (RCP) and fittings conforming to the requirements for Reinforced Concrete Pipe Storm Sewer and Fittings as set forth in AASHTO M 170 and standard spec 608.

C Construction

The contractor shall be responsible for locating the Outlet Control Manhole and the associated storm sewer connections. The diameter and elevations of existing connections will be field verified by the contractor. Installation shall consist of ensuring the appropriate sump depth is achieved below the lowest pipe invert. No sump will be on the downstream side of the baffle restrictor wall. The sump downstream of the baffle can be filled in with concrete meeting the requirements of standard spec 501 and finished with a broom finish. The baffle restrictor wall shall be constructed out of concrete meeting the requirements of standard spec 501 and as shown on the plans. The inverts of the restrictor openings shall conform to the table in the detail and plans. The opening sizes and elevations do vary for each pond outlet.

Existing stormwater and utility drains that are to enter a structure shall be connected by extending them from the last undisturbed intact pipe to the outside face of the manhole, using RCP pipe of equal size laid on the same grade as the existing drain.

The manhole structure shall be sized as shown on the plans and shall have two Type L frame and lid in the flat top cover. Each frame and lid shall be on either side of the baffle wall to allow access to both sides for maintenance.

D Measurement

The department will measure Pond Outlet Control Manhole by each unit installed in place, and the quantity measured for payment shall be the number of units each of the various depths, completed and accepted.

Manhole covers Type L shall be incidental to the installation of the Outlet Control Manhole. The baffle wall construction shall be incidental to the cost of the Outlet Control Manhole. Pipe connections and associated fittings shall be incidental to the installation of the Outlet Control Manhole.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-----------------------------|------|
| SPV.0060.103 | Pond Outlet Control Manhole | EACH |

Payment for Pond Outlet Control Manhole is full compensation according to standard spec 611.

14.12 Detention Pond Corrugated Metal Anti-Seep Collar, Item SPV.0060.104.

A Description

This item consists of furnishing and installing a corrugated metal aluminum coated collar as shown on the plans and as described herein.

B Materials

Fabrication shall be from Type 2 aluminum coated sheet steel conforming to AASHTO M 274. The steel plate shall be 1/4-inch minimum thickness. All anti-seep collars and their connections shall be watertight.

C Construction

Extend the collar dimensions a minimum of 2.25 feet in all directions around the outside of the conduits, measured perpendicular to the conduit, except the vertical limits of the collar need not exceed 1 foot above the top of pipes. Center the anti-seep collars around the conduits. The contractor will be responsible for installing the anti-seep collar at the appropriate locations and inverts, according to the plans.

D Measurement

The department will measure Detention Pond Corrugated Metal Anti-Seep Collar by each unit, complete in place and accepted 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.0060.104 | Detention Pond Corrugated Metal Anti-Seep Collar | EACH |

Payment is full compensation for furnishing the aluminum coated corrugated steel collar.

14.13 Flared End Section with Trash Rack, Item SPV.0060.105.

A Description

The specification covers furnishing, fabricating, and installing reinforced concrete flared end sections and metalwork, including metal parts as necessary, to install Flared-end Sections with Trash Racks at the inlet end of culverts as shown on the plans and details.

B Materials

Furnish and install smooth steel bars, steel anchor strips, bolts, nuts, miscellaneous hardware and flared-end sections, as necessary to construct the Flared-End Section with Trash Rack, as shown on the plans.

All trash racks shall be constructed with a smooth steel tube as dimensioned on the plans and details. The tube steel and anchor strips shall be A36 and shall meet ASTM A500 Grade B requirements. Anchor strips and connection bolts shall be as shown on the details.

All trash racks components shall have a corrosion protective finish. All welds shall be 1/4-inch welds.

Flared-end sections shall be furnished according to standard spec 522

C Construction

The contractor shall be responsible for installing the reinforced concrete flared-end sections with trash racks at the appropriate locations and inverts, according to the plans and standard spec 522.

D Measurement

The department will measure Flared-End Section with Trash Rack by each unit installed in place, and the quantity measured for payment shall be the number of units each of the various depths, completed and accepted according to the contract and 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.0060.105 | Flared End Section with Trash Rack | EACH |

Payment for Flared-end Section with Trash Grate is full compensation according to standard spec 522.

14.14 Slip – In Check Valve for 24-Inch Diameter Pipe, Item SPV.0060.106; Slip – In Check Valve for 36-Inch Diameter Pipe, Item SPV.0060.107.

A Description

The specification covers furnishing and installing Slip-In Check Valves (Check Valves) at locations entering and exiting detention pond 5. Furnish and install Check Valve as shown in the plans and details, as well as according to manufacturer's instructions.

B Materials

Contractor shall provide an in-line elastomeric type check valve with compression clamps and a slip-in cuff connection. Check Valve shall slip into downstream end of RCCP pond outlet and be attached with 316 stainless steel expansion clamps which shall expand outward to seal the valve against the RCCP pipe wall without use of a separate valve body or pipe.

Check Valve shall be one-piece pure gum rubber construction with reinforcement throughout the body, disc, and bill and resilient to freezing and UV exposure.

Check Valve shall open to allow passage of flow in one direction when line pressure exceeds the backpressure. When backpressure exceeds line pressure the bill and disc are forced closed preventing reverse flow. Valves shall be designed to crack open with less than 2-inch water depth above the valve invert and the following parameters:

24-inch Check Valve shall be designed to open with less than 2-inches of line pressure and rated for a maximum of 20 feet of backpressure. Check Valve shall have less than 0.2-feet of headloss for the 2-year design flow rate of 24 cubic feet per second.

36-inch Check Valves shall be designed to open with less than 2-inches of line pressure and rated for a maximum of 20-feet of backpressure. Check Valves shall have less than 0.3-feet of headloss for the 2-year design flow rate of 135 cubic feet per second and less than 0.3-feet of headloss for the 100-year design flow rate of 450 cubic feet per second.

Submit product literature that includes information on installation, performance and operation, all materials, dimensioned drawings, and flow and head loss data.

Manufacturer shall have designed, fabricated and have at least three current installation of this style of check valves within a size range of 24" to 72" diameters within the United States. Manufacturer shall provide documentation, including project name, location, and references.

Manufacturer shall have conducted hydraulic testing to determine head loss, jet velocity and vertical opening height characteristics on a minimum of three sizes of valves. The testing must have been conducted for free discharge (pressurized and open channel flow discharging to atmosphere) and submerged conditions.

C Construction

Furnish and install Check Valve at the locations identified on the plans.

Check Valves will be placed inside one 24" Inside Diameter and inside two 36" Inside Diameter Pipes. Due to small variations in RCCP fabrication depending on manufacturer, the contractor is responsible for providing the proper size Check Valve for the actual inside diameter of the RCCP being used. Check Valve shall be sized to fit such that the upstream and downstream sections of the valve shall be circumferentially in tight contact with the inside diameter of the outlet pipe. After installation, the Check Valve shall not protrude beyond the end of the outlet pipe.

Contractor to provide any clamps or hardware required for installation of Check Valve. Such items are considered incidental to this work.

The contractor will be responsible for installing the Check Valve as shown in the plans and details and per the manufacturer's instructions. Contractor shall make manufacturer's authorized representative available to assist during valve installation.

D Measurement

The department will measure Slip – In Check Valve for (XX-Inch) Diameter Pipe by each unit installed in place, and the quantity measured for payment shall be the number of units each of the various locations completed and accepted according to the contract and plans. All clamps and hardware necessary for installing Check Valve are considered incidental to this work.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---|------|
| SPV.0060.106 | Slip – In Check Valve for 24-Inch Diameter Pipe | EACH |
| SPV.0060.107 | Slip – In Check Valve for 36-Inch Diameter Pipe | EACH |

Payment is full compensation for all labor and hardware necessary for installing Check Valve.

14.15 Bolting Inlet Cover, Item SPV.0060.108.**A Description**

This special provision describes bolting type V grates to frame on inlets to accommodate temporary traffic staging as shown on the plan, according to standard spec 506, and as hereinafter provided.

B Materials

Bolts to be ½” stainless steel hex bolts according to standard spec 506.2.

C Construction

Secure inlet grates by pre-drilling two holes in grate and bolt grate to frame according to standard spec 506.3. Perform work at the locations shown in the plans and directed by the engineer.

D Measurement

The department will measure Bolting Inlet Cover as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the agreed unit price under the following items:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---------------------|------|
| SPV.0060.108 | Bolting Inlet Cover | EACH |

Payment for Bolting Inlet Cover is full compensation for pre-drilling casting; for providing and installing bolts; and for removing bolts and cover.

14.16 Storm Sewer Plug, Item SPV.0060.109.**A Description**

Install a Storm Sewer Plug at locations specified in the plans. Temporary storm sewer plugs not to be left in place after the completion of the project are considered incidental to the storm sewer pipe bid item.

B Materials

Provide a precast reinforced concrete plug or an engineer approved alternative, conforming to the inside diameter of the corresponding pipe as shown on the plan.

All materials, if concrete, must conform to standard spec 501 and standard spec 611.

C Construction

Place a watertight plug in the end of the storm sewer pipe in a manner that seals the pipe, but allows for future removal of plug without damaging the storm sewer pipe.

D Measurement

The department will measure Storm Sewer Plug as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|------------------|------|
| SPV.0060.109 | Storm Sewer Plug | EACH |

Payment is full compensation for furnishing and installing all required materials.
(NER441-20141017)

14.17 Street Sweeping, Item SPV.0075.001.**A Description**

Remove small dirt and dust particles from the roadway using a street sweeper for cleaning the roadway before traffic switches or cleaning of roadways from non-contractor vehicle traffic.

B (Vacant)**C Construction**

Provide a self-contained mechanical or air conveyance street sweeper and dispose the accumulated material.

D Measurement

The department will measure Street Sweeping by the hour that the street sweeper is on the project picking up and removing debris from the roadway, 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.0075.001 | Street Sweeping | HRS |

Payment is full compensation for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

All street sweeping due to the contractors hauling operations is considered incidental to the contract.

(NER441-20150117)

14.18 Pond Edge Seed, Item SPV.0085.001.

A Description

This special provision describes furnishing and installing a Pond Edge Seed at the locations shown on the plans and as hereinafter provided.

B.1 Materials

Provide Pond Edge Seed of the following composition with species composed of Pure Live Seed (PLS) with no named or improved varieties unless specifically listed below:

Spring and Early Summer Seeding Rates:

| Grasses | | | |
|------------------------|----------------------------|-------------------|--------------------------|
| Common Name | Latin Name | AMT / ACRE | Percentage of Mix |
| <i>Big Bluestem</i> | <i>Andropogon gerardii</i> | 4.00 PLS lb | 23.53% |
| <i>Canada Wild Rye</i> | <i>Elymus canadensis</i> | 6.00 PLS lb | 35.29% |
| <i>Switchgrass</i> | <i>Panicum virgatum</i> | 2.00 PLS lb | 11.76% |
| <i>Indiangrass</i> | <i>Sorghastum nutans</i> | 5.00 PLS lb | 29.41% |

Late Summer and Fall Seeding Rates (Warm Season Grass Seeding Rates Doubled):

| Grasses | | | |
|------------------------|----------------------------|-------------------|--------------------------|
| Common Name | Latin Name | AMT / ACRE | Percentage of Mix |
| <i>Big Bluestem</i> | <i>Andropogon gerardii</i> | 8.00 PLS lb | 47.06% |
| <i>Canada Wild Rye</i> | <i>Elymus canadensis</i> | 6.00 PLS lb | 35.29% |
| <i>Switchgrass</i> | <i>Panicum virgatum</i> | 4.00 PLS lb | 23.53% |
| <i>Indiangrass</i> | <i>Sorghastum nutans</i> | 10.00 PLS lb | 58.82% |

All PLS seed shall be from nurseries specializing in growing native species. All seed shall be cold, dry stratified. Minimum percent purity shall be 96 percent.

Contractor shall provide seed blend to engineer for final review and approval and shall include, from seed vendor, certification of seed showing mix composition and a guarantee of germination and the following information: Scientific name of genus and species (subspecies and variety as necessary) and guarantee that seeds are true to species, bulk weight of seed, PLS, supplier lot identification, calendar year in which seed was collected, seed origin (geographical location), seed supplier contact information including company name, address, phone number, contact person's name and e-mail address.

C Construction

Seeding shall occur between April 15 to June 30 or September 1 to October 15.

Remove any and all undesirable vegetation that has germinated in area to be seeded in a method that will not adversely affect the installation of new seed.

Scarify soils that have become compacted during construction operations. Ensure subgrades are aerated and disked to a minimum depth of 8 inches before proceeding with seeding operations.

Moisten prepared area before seeding if soil is dry. Water thoroughly and allow surface to dry before seeding. Do not create muddy soil.

No seeding shall occur on frozen ground or at temperatures lower than 32 degrees F.

Install Pond Edge Seed using Method A or Method B as outlined in standard spec 630 at the rates given in the above or as recommended by seed supplier and approved by engineer.

D Measurement

The department will measure Pond Edge Seed by the pound, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|----------------|------|
| SPV.0085.001 | Pond Edge Seed | LB |

Payment is full compensation for providing, handling, and storing all seed; for providing the required culture and inoculating seed as specified and as needed; and for preparing the seed bed, sowing, covering and firming the seed.

14.19 Trenched Rodent Protection, Item SPV.0090.100.

A Description

This special provision describes furnishing and placing wire fence below the ground surface as a burrowing rodent deterrent along the perimeter of Pond 5.

B Materials

Provide heavy gauge chicken wire, critter wire, or hardware cloth wire fence. The material shall be made of 14 gauge or thicker galvanized steel wire with maximum 1-inch hex, square, or round mesh openings. Vinyl or zinc coated wire may be substituted for galvanized.

Provide engineer with the name, address and phone number of the supplier for approval.

C Construction

Install 5 feet depth of fence offset from edge of pond normal water level as shown. Fence shall be vertical and placement method proposed by contractor shall be provided to

engineer prior to placement. Provide biodegradable vertical supports as necessary to erect fence. Excavated material shall be used as backfill.

Contractor shall remove and dispose of all excess material from site.

D Measurement

The department will measure Trenched Rodent Protection by the linear foot along the base of the fence, 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.0090.100 | Trenched Rodent Protection | LF |

Payment is full compensation for furnishing all materials, trenching/excavation, labor, tools, equipment, backfilling, and incidentals for the placement of Trenched Rodent Protection accepted and in place.

14.20 Concrete Masonry Headwall, Item SPV.0105.100.

A Description

This special provision describes furnishing and placing a concrete masonry apron headwall.

B Materials

Furnish materials as specified in standard spec 520 for Apron Endwalls for Culvert Pipe.

C Construction

Remove the existing channel as specified in standard spec 204 Removing or Abandoning Miscellaneous Structures.

Headwall construction shall be as specified in standard spec 520 for Apron Endwalls for Culvert Pipe.

D Measurement

The department will measure Concrete Masonry Headwall by lump sum, completed according to the contract and accepted, as a single complete unit of work.

E Payment

The city will pay for measured quantities at the contract unit price under the following bid items:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---------------------------|------|
| SPV.0105.100 | Concrete Masonry Headwall | LS |

Payment is full compensation for removing and disposing existing channel, excavating; materials, including reinforcement; forms; placing, including reinforcement; finishing, curing, protecting and heating; and backfilling.

14.21 Water for Seeded Areas, Item SPV.0120.150.

A Description

This special provision describes furnishing, hauling and applying water to seeded areas as directed by the engineer, and as hereinafter provided.

B Materials

When watering seeded areas, use clean water, free of impurities or substances that might injure the seed.

C Construction

If rainfall is not sufficient, keep all seeded areas thoroughly moist by watering or sprinkling. Water for 30 days after seed placement or as the engineer directs. Apply water in a manner to preclude washing or erosion. The topsoil shall not be left un-watered for more than 3 days during this 30-day period unless the engineer determines that it is excessively wet and does not require watering. The equivalent of one inch of rainfall per week shall be considered the minimum.

D Measurement

The department will measure Water for Seeded Areas by volume by the thousand gallon units (MGAL), acceptably completed. The department will determine volume by engineer-approved meters or from tanks of known capacity.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|------------------------|------|
| SPV.0120.150 | Water for Seeded Areas | MGAL |

Payment is full compensation for furnishing, hauling, and applying the water.
(NER12-1010)

15. Miscellaneous Concrete.

15.1 Concrete Barrier Transition Type S56 (54-Inch Wide Base) to Type S56 (36-Inch Wide Base), Item SPV.0060.003; Special Type S56A (54-Inch Wide Base) to Type S56A (36-Inch Wide Base), Item SPV.0060.004; Type V56 to S56 (36-Inch to 30-Inch Wide Base), Item SPV.0060.005; Type V56 to S56 (42-Inch to 36-Inch Wide Base), Item SPV.0060.006.

A Description

Construct Concrete Barrier Transition (Type) (Size) according to standard spec 603, details shown in the plans and as hereinafter provided.

B Materials

Furnish materials conforming to standard spec 603.2.

Concrete minimum strength to be 4000 psi.

C Construction

Use construction methods conforming to standard spec 603.3.

Construct the Concrete Barrier Transition (Type) (Size) to present a smooth, uniform appearance in its final position conforming to the horizontal and vertical lines shown on the plans or as directed by the engineer, and be free of lumps, sags or other irregularities. The top and exposed faces of the barrier shall conform to standard spec 603.3.1.5.

Construct expansion joints in conformance with standard spec 603.3.1.3.

When forming joints before the concrete has hardened, support adjacent portions of the barrier firmly with close fitting shields.

When forming joints after the application of curing compound, treat the exposed faces of the barrier in the vicinity of the joint with curing compound after the forming of the joints.

In transitions between barrier shapes, tie reinforcement bars to Concrete Barrier reinforcement by tying the first vertical bar ± 3 inches from the transition point and lapping any horizontal bars that match.

D Measurement

The department will measure Concrete Barrier Transition (Type) (Size) by each individual unit, acceptably completed.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0060.003 | Concrete Barrier Transition Type S56 (54-Inch Wide Base) to Type S56 (36-Inch Wide Base) | EACH |
| SPV.0060.004 | Concrete Barrier Transition Special Type S56A (54-Inch Wide Base) to Type S56A (36-Inch Wide Base) | EACH |
| SPV.0060.005 | Concrete Barrier Transition Type V56 to S56 (36-Inch to 30-Inch Wide Base) | EACH |
| SPV.0060.006 | Concrete Barrier Transition Type V56 to S56 (42-Inch to 36-Inch Wide Base) | EACH |

Payment is full compensation according to standard spec 603.5.

15.2 35' Concrete Barrier Type S42C Transition to 6-Inch Height, Item SPV.0060.007.

A Description

Construct 35' Concrete Barrier Type S42C Transition to 6-Inch Height according to standard spec 603, details shown in the plans and as hereinafter provided.

B Materials

Furnish materials conforming to standard spec 603.2.

Concrete minimum strength to be 4000 psi.

C Construction

Use construction methods conforming to standard spec 603.3.

Construct the 35' Concrete Barrier Type S42C Transition to 6-Inch Height to present a smooth, uniform appearance in its final position conforming to the horizontal and vertical lines shown on the plans or as directed by the engineer, and be free of lumps, sags or other irregularities. The top and exposed faces of the barrier shall conform to standard spec 603.3.1.5.

Construct expansion joints in conformance with standard spec 603.3.1.3.

When forming joints before the concrete has hardened, support adjacent portions of the barrier firmly with close fitting shields.

When forming joints after the application of curing compound, treat the exposed faces of the barrier in the vicinity of the joint with curing compound after the forming of the joints.

In transitions between barrier shapes, tie reinforcement bars to Concrete Barrier reinforcement by tying the first vertical bar ± 3 inches from the transition point and lapping any horizontal bars that match.

D Measurement

The department will measure 35' Concrete Barrier Type S42C Transition to 6-Inch Height by each individual unit, acceptably completed.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0060.007 | 35' Concrete Barrier Type S42C Transition to 6-Inch Height | EACH |

Payment is full compensation according to standard spec 603.5.

15.3 70' Concrete Barrier Type S42C Transition to 6-Inch Height, Item SPV.0060.008.**A Description**

Construct 70' Concrete Barrier Type S42C Transition to 6-Inch Height according to standard spec 603, details shown in the plans and as hereinafter provided.

B Materials

Furnish materials conforming to standard spec 603.2.

Concrete minimum strength to be 4000 psi.

C Construction

Use construction methods conforming to standard spec 603.3.

Construct the 70' Concrete Barrier Type S42C Transition to 6-Inch Height to present a smooth, uniform appearance in its final position conforming to the horizontal and vertical lines shown on the plans or as directed by the engineer, and be free of lumps, sags or other irregularities. The top and exposed faces of the barrier shall conform to standard spec 603.3.1.5.

Construct expansion joints in conformance with standard spec 603.3.1.3.

When forming joints before the concrete has hardened, support adjacent portions of the barrier firmly with close fitting shields.

When forming joints after the application of curing compound, treat the exposed faces of the barrier in the vicinity of the joint with curing compound after the forming of the joints.

In transitions between barrier shapes, tie reinforcement bars to Concrete Barrier reinforcement by tying the first vertical bar ± 3 inches from the transition point and lapping any horizontal bars that match.

D Measurement

The department will measure 70' Concrete Barrier Type S42C Transition to 6-Inch Height by each individual unit, acceptably completed.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0060.008 | 70' Concrete Barrier Type S42C Transition to 6-Inch Height | EACH |

Payment is full compensation according to standard spec 603.5.

15.4 Concrete Curb and Gutter 18-Inch Type D SHES, Item SPV.0090.001.**A Description**

This work consists of furnishing all materials and constructing curb and gutter, according to standard spec 601, and as hereinafter provided.

B Materials

Furnish concrete mixture meeting the requirements for Special High Early Strength Concrete Pavement Repair and Replacement as specified in standard spec 416.3.8.

C Construction

The construction of Concrete Curb and Gutter 18-Inch Type D SHES shall be according to standard spec 601.3 and as follows: Before it is opened to traffic, cure the Concrete Curb and Gutter 18-Inch SHES a minimum of eight hours from the time of placement.

D Measurement

The department will measure Concrete Curb and Gutter 18-Inch Type D SHES by the linear foot, acceptably completed, measured along the flow line of the gutter.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0090.001 | Concrete Curb and Gutter 18-Inch Type D SHES | LF |

Payment is full compensation for excavating and preparing the foundation; for providing all materials, including concrete, and expansion joints; and for placing, finishing, protecting and curing concrete.

15.5 Concrete Curb Pedestrian A, Item SPV.0090.002.

A Description

This work consists of furnishing all materials and constructing a cast-in-place concrete curb pedestrian as shown on the plans, according to standard spec 601, and as hereinafter provided.

B (Vacant)

C (Vacant)

D Measurement

The department will measure Concrete Curb Pedestrian A by the linear foot, acceptably completed, measured along the concrete head.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|----------------------------|------|
| SPV.0090.002 | Concrete Curb Pedestrian A | LF |

Payment is full compensation for excavating and preparing the foundation; for providing all materials, including concrete, and expansion joints; and for placing, finishing, protecting and curing concrete.

(NER10/441-20130117)

15.6 Concrete Barrier Type S56 (36-Inch Wide Base), Item SPV.0090.003; Type S56A (36-Inch Wide Base), Item SPV.0090.004.

A Description

This special provision describes constructing Concrete Barrier (Type) (Size) according to standard spec 603, details shown in the plans and as hereinafter provided.

B Materials

Furnish materials conforming to standard spec 603.2.

Concrete minimum strength to be 4000 psi.

C Construction

Use construction methods conforming to standard spec 603.3.

Construct the concrete barrier to present a smooth, uniform appearance in its final position conforming to the horizontal and vertical lines shown on the plans or ordered by the engineer, and be free of lumps, sags or other irregularities. The top and exposed faces of the barrier shall conform to standard spec 603.3.1.5.

If constructed by using a slip form machine or similar type equipment, the concrete barrier shall be of well-compacted, dense concrete, and the exposed surfaces conform to standard spec 603.3.1.7. If requested by the engineer, evidence of successful operation of the slip form machine or other equipment may be required.

Feed concrete into the slip form machine at a uniform rate. Operate the machine under sufficient uniform restraint to forward motion to produce a well compacted mass of concrete free from surface pits larger than one inch in diameter and requiring no further finishing, other than that conforming to standard spec 603.3.1.6.

Utilize concrete of such consistency that, after slip forming, it will maintain the shape of the barrier without support.

Construct expansion joints in conformance with standard spec 603.3.1.3.

When forming joints before the concrete has hardened, support adjacent portions of the barrier firmly with close fitting shields.

When forming joints after the application of curing compound, treat the exposed faces of the barrier in the vicinity of the joint with curing compound after the forming of the joints.

In transitions between barrier shapes, tie reinforcement bars to concrete barrier reinforcement by tying the first vertical bar ± 3 inches from the transition point and lapping any horizontal bars that match.

Required Vertical Construction Joint can be constructed in 2 ways: 1) pour the shoulder to the required vertical construction joint, and then pour the barrier full depth (no optional horizontal construction joint), or 2) pour the shoulder to go under the barrier (utilizing the optional horizontal construction joint), with the vertical construction joints within 4" horizontally of the edge of the barrier. The vertical construction joints may be saw cut full depth and sealed within 4" horizontally of the edge of the barrier. Location of saw cut will be determined in the field to match existing conditions. The barrier edge shall not slump over the vertical construction joints by more than 1 inch on each side of the barrier. Saw cut is incidental to Concrete Barrier Type S56.

D Measurement

The department will measure Concrete Barrier (Type) (Size) by the linear foot acceptably completed, measured along the base of the concrete barrier.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0090.003 | Concrete Barrier Type S56 (36-Inch Wide Base) | LF |
| SPV.0090.004 | Concrete Barrier Type S56A (36-Inch Wide Base) | LF |

Payment is full compensation according to standard spec 603.5, except for sawing pavement and sealing the construction joints, which will be considered incidental to the barrier item.

(NER41-20130129)

15.7 Colored Concrete Foundation 6-Inch Special, Item SPV.0105.001.

A Description

This special provision describes constructing special colored concrete foundation according to the pertinent provisions of standard spec 405 and 415, the plan details, and as hereinafter provided.

B Materials

B.1 Concrete

Conform to standard spec 405 and 415 and as follows:

Integrally color the concrete using non-fading synthetic iron oxides conforming to ASTM C979. Follow color pigment manufacturers recommendations for minimum and maximum percentage of loading by weight of the cementitious materials in the mix.

The integral color shall closely match to Federal Standard 595 Color Server, FS color 10076. Provide manufacturer's color chart for integral color to engineer for approval before use. All colored concrete shall originate from the same batch plant.

Add integral concrete colorant according to manufacturer's instructions.

Maintain mix characteristics for all colored concrete requiring a matching finish. Use the same source, brand, type, and color of Portland cement, supplementary cementitious materials, aggregates and admixtures for colored concrete throughout the project. Use constant cement content, supplementary cementitious material content and water/cementitious materials ratio in the concrete mix to maintain consistent color.

B.2 Concrete Curing

Supply a clear, non-yellowing liquid membrane-forming clear curing compound conforming to ASTM C 1315, type 1 A.

B.3 Mix Approval

B.3.1 General

Perform preliminary laboratory and/or field trial batching to establish the mix proportions necessary to meet the final concrete characteristics.

Submit to the engineer the final mix design including specific sources and/or trade names as applicable for all materials.

B.3.2 Test Panels

At least fifteen working days prior to the start of the colored concrete foundation installation, supply and deliver at an engineer-determined location on the project, one 2-foot

x 2-foot test panel of the colored concrete. Obtain approval from the engineer for the final color prior to placing any colored imprinted concrete in the field.

Prepare the concrete surfaces of the test panel using processes and techniques intended for use on permanent work, including curing procedures, stamping, coloring, and sealing as outlined in this section.

The engineer will determine acceptance of the test panel color based on review and approval by City of Appleton, City of Menasha and Village of Fox Crossing representatives. Test panel color will be evaluated for approval no earlier than five days after the test panel was poured and sealed.

C Construction

Construct special colored concrete foundation according to standard spec 405 and 415 and as shown in the plan details and as directed by the engineer.

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.3 Placement

Produce colored concrete in full cubic yard increments.

Produce consistent colored concrete mixes. Once colored concrete placement has started, the engineer will not allow variations in the amounts, types, or source of materials with the exception of minor adjustments of water and air-entraining agent as necessary. Other changes require the contractor to repeat the mix approval process.

Colored concrete mixes for matching colored items shall be consistent. If the contractor chooses to provide mixes with high early strength concrete, then all colored concrete for matching colored items shall be provided as high early strength concrete.

Schedule colored concrete placement to minimize exposure to rapid drying conditions, wind and full sun, before curing materials are applied. Do not place colored concrete if rain, snow, or freezing temperature is forecast within 24-hours.

Cover and protect adjacent construction and concrete from discoloration and spillage during placement and curing of colored concrete. Remove and replace discolored concrete as the engineer directs.

Perform finishing operations consistently to avoid discoloration in the finished colored concrete. Do not begin finishing until bleed water has left the surface. Addition of surface water for aiding in finishing (often referred to as blessing the concrete) is not allowed. If water is added to the surface of the colored concrete once concrete is in place, the engineer

will reject the colored concrete. During final finishing and texturing apply all strokes in the same direction.

The final finish/texture shall be a medium broom finish.

Cure colored concrete according to standard spec 415.3.12, using the impervious coating or impervious sheeting method. Protect colored concrete from premature drying and excessive cold or hot temperatures by prompt application of curing materials. Do not allow plastic sheeting to come in contact with colored concrete.

Protect the colored concrete from damage. Do not permit construction traffic or material storage on colored concrete. Exclude other foot traffic from colored concrete for at least 24 hours after placement.

D Measurement

The department will measure Colored Concrete Foundation 6-Inch Special bid item 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.0105.001 | Colored Concrete Foundation 6-Inch Special | LS |

Payment is full compensation for providing all materials (including concrete masonry, colored pigments, sealers, joint and bond breakers, and retarders); for developing mix designs and providing sample panels or test panels; including concrete, reinforcement, and expansion joints; for measuring opening strength including fabricating and testing cylinders, obtaining and testing cores and evaluating maturity; for placing, finishing, protecting, and curing.

(NER11-0127)

15.8 Colored and Stamped Concrete 5-Inch Color 10076, Item SPV.0180.005; Colored and Stamped Concrete 5-Inch Color 16293, Item SPV.0180.006.

A Description

This special provision describes furnishing and installing colored and imprinted concrete, complete and accepted in place, including base materials, sealer and samples according to standard spec 405, 415 and 716, as shown on the plans, and as hereinafter provided.

Concrete contractor must have experience successfully installing stamped and colored concrete and shall provide, upon engineer's request, a written list of references specific to stamped and colored concrete projects in the upper Midwest prior to the start of construction.

B Materials

B.1 Concrete

Conform to standard spec 405 and 415 and as follows:

Integrally color the concrete using non-fading synthetic iron oxides conforming to ASTM C979. Follow color pigment manufacturers recommendations for minimum and maximum percentage of loading by weight of the cementitious materials in the mix.

The integral color shall closely match to Federal Standard 595 Color Server, FS color 10076 for Colored and Stamped Concrete, 5-Inch Color 10076 SPV.0180.005.

The integral color shall closely match to medium grey, Federal Standard 595 Color Server, FS color 16293 for Colored and Stamped Concrete, 5-Inch Color 16293 SPV.0180.006.

Provide manufacturer's color chart for integral color to engineer for approval before use. All colored concrete shall originate from the same batch plant.

B.2 Concrete Curing

Supply a clear, non-yellowing liquid membrane-forming clear curing compound conforming to ASTM C 1315, type 1 A.

B.3 Mix Approval

B.3.1 General

Perform preliminary laboratory and/or field trial batching to establish the mix proportions necessary to meet the final concrete characteristics.

Submit to the engineer the final mix design including specific sources and/or trade names as applicable for all materials.

Concrete shall have a maximum 4" slump.

B.3.2 Test Panels

At least 15 working days prior to the start of colored and imprinted concrete installation, supply and deliver at an engineer-determined location on the project, one 2-foot x 2-foot test panel of the colored imprinted concrete. Obtain approval from the engineer for the final color and stamp pattern prior to placing any colored imprinted concrete in the field.

Prepare the concrete surfaces of the Stamped and Colored Concrete Test Panel using processes and techniques intended for use on permanent work, including curing procedures, stamping, coloring, and sealing as outlined in this section.

The engineer will determine acceptance of the test panel color based on review and approval by City of Appleton, City of Menasha and Village of Fox Crossing representatives. Test panel color will be evaluated for approval no earlier than 5 days after the test panel was poured and sealed.

B.4 Stamp

Use reusable elastomeric/urethane form liners of the architectural surface treatment(s) as detailed in the plans and hereinafter provided.

Pattern shall be “used brick” running bond pattern with individual “brick” dimensions of 2¼ inches to 2 3/8 inches by 7 5/8 inches to 8 inches. Maximum relief of brick formliner shall be ½”. Provide sample formliner pattern to engineer for approval before use.

B.5 Antiquing Release Agent

Use a liquid antiquing release agent that is compatible with the form liner and coloring materials. Apply release agent according to the manufacturer’s recommendations.

The antiquing release agent color shall closely match to Federal Standard 595 Color Server, FS color 10045. Provide manufacturer’s color chart for antiquing release agent to engineer for approval before use.

B.6 Concrete Sealant

Use concrete sealant that is compatible with the form liner and installation methods.

Prime Sealant: Glossy.

Secondary Sealant: Matte.

C Construction

Construct colored concrete according to standard spec 405, 415 and 716 and as herein provided.

Coordinate locations of permanent signage requiring PVC pipe box outs per standard spec 634.3.2.

Colored and Stamped Concrete shall match the visual appearance of the approved sample. Replace Colored and Stamped Concrete, 5-Inch not conforming to the test panel at contractor expense.

C.1 Form Liner (Stamp) 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.

C.2 Stamp

Coordinate with the engineer and verify stamping pattern orientation prior to starting the stamping work.

Stamping method shall be according to manufacturer’s specified methods. Prepare stamp tools with a full, smooth coat of antiquing release agent.

While concrete is still in the plastic state, apply imprinting tools to the surface and press into the concrete to create the desired impression. Check all depths of imprints by tool-to-tool surface leveling. Perform tooling as stamping tools are removed after imprinting. Eliminate all squeeze joints between stamping tools, if any, with hand tools prior to concrete setting. Finish all surfaces uniformly.

Ensure that the textured surface is free of laitance; sandblasting is not permitted. Grind or fill any blemishes.

Joint the concrete according to standard spec 602.3.2.5 amended as follows: Delete paragraph (10). Saw joints such that the saw joint follows the concrete pattern recess.

C.3 Finishing

Allow concrete to cure for 24 hours after application of the antiquing release agents and stamp pattern.

Pressure wash concrete surface to remove approximately 75% of the antiquing release agent. Ensure that concrete is clean and dry before proceeding with concrete sealant.

Spray or roll on a single layer of gloss sealant. Follow by spraying on a single coat of matte finish sealer. Do not roll matte finish sealer onto concrete surfaces.

D Measurement

The department will measure Colored and Stamped Concrete, 5-Inch (color) by the square yard of concrete pavement installed, 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.0180.005 | Colored and Stamped Concrete, 5-Inch Color 10076 | SY |
| SPV.0180.006 | Colored and Stamped Concrete, 5-Inch Color 16293 | SY |

Payment is full compensation for preparing the foundation, unless provided otherwise; for developing mix designs and providing sample panels or test panels; for furnishing materials (including concrete masonry, colored pigments, sealers, joint and bond breakers, and retarders), hauling, preparing, placing, curing, and protecting the concrete; for stamping ; for sawing required for construction of colored concrete; for jointing and joint materials, and tie bars; for measuring opening strength including fabricating and testing cylinders, obtaining and testing cores, and evaluating maturity; for furnishing all removal of colored concrete.

(NER441-20150117)

15.9 Colored Concrete 5-Inch, SPV.0180.007.

A Description

Construct colored concrete according to the standard specifications, as shown on the plans, and as hereinafter provided.

B Materials

B.1 Concrete

Conform to standard spec 501 and as follows:

Integrally color the concrete using non-fading synthetic iron oxides conforming to ASTM C979 at a minimum percent loading of 6% and a maximum percent loading of 8% by weight of the cementitious materials in the mix.

Match the concrete color to Federal Standard 595 Color Server, FS color 10076.

Add integral concrete colorant according to manufacturer's instructions.

Maintain mix characteristics for all colored concrete requiring a matching finish. Use the same source, brand, type, and color of Portland cement, supplementary cementitious materials, aggregates and admixtures for colored concrete throughout the project. Use constant cement content, supplementary cementitious material content and water/cementitious materials ratio in the concrete mix to maintain consistent color.

B.2 Concrete Curing

Supply a clear, non-yellowing liquid membrane-forming clear curing compound conforming to AASHTO M 148, type 1.

B.3 Admixtures

Use admixtures designed for use and compatible with colored concrete pigments. Do not use calcium chloride or admixtures containing chlorides.

B.4 Mix Approval

B.4.1 General

Perform preliminary laboratory and/or field trial batching to establish the mix proportions necessary to meet the final concrete characteristics.

Submit to the engineer the final mix design including specific sources and/or trade names as applicable for all materials.

B.4.2 Trial Batch

If the engineer deems necessary, produce test panels to demonstrate the typical texture, surface finish, color, and color intensity.

At an engineer-determined location on the project, place and finish a 6-foot by 6-foot by 5-inch colored concrete test panel using processes and techniques intended for use on

permanent work, including curing procedures. Produce test panels using the same workers who will perform the contract work. Retain samples of cements, sands, aggregates and color additives used in test panels for comparison with materials used in remaining work. For an accurate representation of the desired color or color intensity, produce the colored concrete for the test panel in a minimum batch size of 2 cubic yards or in full cubic yard increments for batch sized greater than 2 cubic yards. Discard excess material.

The engineer will determine acceptance of the test panel color based on review and approval by City of Appleton representatives.

C Construction

Construct colored concrete according to standard spec 416, standard spec 715 QMP Ancillary Concrete and as herein provided.

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.3 Placement

Produce colored concrete in full cubic yard increments.

Produce consistent colored concrete mixes. Once colored concrete placement has started, the engineer will not allow variations in the amounts, types, or source of materials with the exception of minor adjustments of water and air-entraining agent as necessary. Other changes require the contractor to repeat the mix approval process.

Colored concrete mixes for matching colored items shall be consistent. If the contractor chooses to provide mixes with high early strength concrete, then all colored concrete for matching colored items shall be provided as high early strength concrete.

Schedule colored concrete placement to minimize exposure to rapid drying conditions, wind and full sun, before curing materials are applied. Do not place colored concrete if rain, snow, or freezing temperature is forecast within 24-hours.

Cover and protect adjacent construction and concrete from discoloration and spillage during placement and curing of colored concrete. Remove and replace discolored concrete as the engineer directs.

Perform finishing operations consistently to avoid discoloration in the finished colored concrete. Do not begin finishing until bleed water has left the surface. Addition of surface water for aiding in finishing (often referred to as blessing the concrete) is not allowed. If water is added to the surface of the colored concrete once concrete is in place, the engineer will reject the colored concrete. During final finishing and texturing apply all strokes in the same direction.

The final finish/texture shall be a medium broom finish.

Cure colored concrete according to standard spec 415.3.12, using the impervious coating or impervious sheeting method. Protect colored concrete from premature drying and excessive cold or hot temperatures by prompt application of curing materials. Do not allow plastic sheeting to come in contact with colored concrete.

Protect the colored concrete from damage. Do not permit construction traffic or material storage on colored concrete. Exclude other foot traffic from colored concrete for at least 24 hours after placement.

D Measurement

The department will measure Colored Concrete 5-Inch according to standard spec 415.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-------------------------|------|
| SPV.0180.007 | Colored Concrete 5-Inch | SY |

Payment is full compensation for preparing the foundation, unless provided otherwise; for developing mix designs and providing sample panels or test panels; for furnishing materials (including concrete masonry, colored pigments, sealers, joint and bond breakers, and retarders), hauling, preparing, placing, curing, and protecting the concrete; for sawing required for construction of colored concrete; for jointing and joint materials, and tie bars; for measuring opening strength including fabricating and testing cylinders, obtaining and testing cores, and evaluating maturity; and for furnishing all removal of colored concrete. (NER441-20170713)

15.10 Colored Concrete 10-Inch, Item SPV.0180.008.

A Description

Construct colored concrete pavement according to the standard specifications, as shown on the plans, and as hereinafter provided.

B Materials

B.1 Concrete

Conform to standard spec 501 and 415 and as follows:

Integrally color the concrete using non-fading synthetic iron oxides conforming to ASTM C979 at a minimum percent loading of 6% and a maximum percent loading of 8% by weight of the cementitious materials in the mix.

Match the concrete color to Federal Standard 595 Color Server, FS color 10076.

Add integral concrete colorant according to manufacturer's instructions.

Maintain mix characteristics for all colored concrete requiring a matching finish. Use the same source, brand, type, and color of Portland cement, supplementary cementitious materials, aggregates and admixtures for colored concrete throughout the project. Use constant cement content, supplementary cementitious material content and water/cementitious materials ratio in the concrete mix to maintain consistent color.

B.2 Concrete Curing

Supply a clear, non-yellowing liquid membrane-forming clear curing compound conforming to AASHTO M 148, type 1.

B.3 Admixtures

Use admixtures designed for use and compatible with colored concrete pigments. Do not use calcium chloride or admixtures containing chlorides.

B.4 Mix Approval

B.4.1 General

Perform preliminary laboratory and/or field trial batching to establish the mix proportions necessary to meet the final concrete characteristics.

Submit to the engineer the final mix design including specific sources and/or trade names as applicable for all materials.

B.4.2 Trial Batch

If the engineer deems necessary, produce test panels to demonstrate the typical texture, surface finish, color, and color intensity.

At an engineer-determined location on the project, place and finish a 6-foot by 6-foot by 4-inch colored concrete test panel using processes and techniques intended for use on permanent work, including curing procedures. Produce test panels using the same workers who will perform the contract work. Retain samples of cements, sands, aggregates and color additives used in test panels for comparison with materials used in remaining work. For an accurate representation of the desired color or color intensity, produce the colored concrete for the test panel in a minimum batch size of 2 cubic yards or in full cubic yard increments for batch sized greater than 2 cubic yards. Discard excess material.

The engineer will determine acceptance of the test panel color based on review and approval by City of Appleton, City of Menasha and Village of Fox Crossing representatives. Test panel color will be evaluated for approval no earlier than five days after the test panel was poured and sealed.

C Construction

Construct colored concrete according to standard spec 416, standard spec 715 QMP Ancillary Concrete and as herein provided.

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.3 Placement

Produce colored concrete in full cubic yard increments.

Produce consistent colored concrete mixes. Once colored concrete placement has started, the engineer will not allow variations in the amounts, types, or source of materials with the exception of minor adjustments of water and air-entraining agent as necessary. Other changes require the contractor to repeat the mix approval process.

Colored concrete mixes for matching colored items shall be consistent. If the contractor chooses to provide mixes with high early strength concrete, then all colored concrete for matching colored items shall be provided as high early strength concrete.

Schedule colored concrete placement to minimize exposure to rapid drying conditions, wind and full sun, before curing materials are applied. Do not place colored concrete if rain, snow, or freezing temperature is forecast within 24-hours.

Cover and protect adjacent construction and concrete from discoloration and spillage during placement and curing of colored concrete. Remove and replace discolored concrete as the engineer directs.

Perform finishing operations consistently to avoid discoloration in the finished colored concrete. Do not begin finishing until bleed water has left the surface. Addition of surface water for aiding in finishing (often referred to as blessing the concrete) is not allowed. If water is added to the surface of the colored concrete once concrete is in place, the engineer will reject the colored concrete. During final finishing and texturing apply all strokes in the same direction.

The final finish/texture shall be a medium broom finish.

Cure colored concrete according to standard spec 415.3.12, using the impervious coating or impervious sheeting method. Protect colored concrete from premature drying and excessive cold or hot temperatures by prompt application of curing materials. Do not allow plastic sheeting to come in contact with colored concrete.

Protect the colored concrete from damage. Do not permit construction traffic or material storage on colored concrete. Exclude other foot traffic from colored concrete for at least 24 hours after placement.

D Measurement

The department will measure Colored Concrete 10-Inch according to standard spec 415.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--------------------------|------|
| SPV.0180.008 | Colored Concrete 10-Inch | SY |

Payment is full compensation for preparing the foundation, unless provided otherwise; for developing mix designs and providing sample panels or test panels; for furnishing materials (including concrete masonry, colored pigments, sealers, joint and bond breakers, and retarders), hauling, preparing, placing, curing, and protecting the concrete; for sawing required for construction of colored concrete; for finishing the concrete as indicated in plans; for jointing and joint materials, and tie bars; for measuring opening strength including fabricating and testing cylinders, obtaining and testing cores, and evaluating maturity; and for furnishing all removal of colored concrete.

(NER441-20150117)

16. Signing and Marking.**16.1 Removing Sand Barrel Array and Concrete Pad at Sign Structure Support, Item SPV.0060.250.****A Description**

This special provision describes removing and disposing of sand barrel arrays, and the concrete pads on which they sit, shielding an individual support for an overhead sign structure along the roadway shoulder, and backfilling the area vacated by the concrete pad removal.

B (Vacant)**C Construction**

Excavate, remove, and backfill according to the pertinent requirements of standard spec 204 and 205, and as shown on the plans.

D Measurement

The department will measure Removing Sand Barrel Array and Concrete Pad at Sign Structure Support as a single unit for each individual support, acceptably removed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---|------|
| SPV.0060.250 | Removing Sand Barrel Array and Concrete Pad at Sign Structure Support | EACH |

Payment is full compensation for removing and disposing of the sand barrel array and associated concrete pad; and for backfilling the area vacated by the concrete pad removal.

16.2 Remove Commercial Sign, Item SPV.0060.252.

A Description

This work shall consist of removing commercial signs and sign supports from the interchange of USH 10 and STH 441 as shown in the plans and according to the pertinent requirements of standard spec 204, and as hereinafter provided.

B (Vacant)

C Construction

Ensure that the engineer has reviewed and has approved all sign removals before beginning removal work. Coordinate with the property owner and electrical utility to disconnect power to the commercial sign before removing signs. Remove conduit from the existing sign to the easement line and place a temporary marker at the end of the remaining conduit. Remove the wire from the building to the removed sign. Sign supports, sign assemblies, and wiring shall become property of the contractor. Transport all removed items from the project site. The contractor is responsible for legal hauling and disposal of removed items.

D Measurement

The department will measure Remove Commercial Sign bid item as an each unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|------------------------|------|
| SPV.0060.252 | Remove Commercial Sign | EACH |

Payment is full compensation for disconnecting power; removing sign supports, sign assemblies, conduit and wiring; and for hauling and properly disposing of items.

17. Lighting/Electrical.

17.1 General Requirements for Electrical Work.

Amend standard spec 651.2, Materials, by adding the following paragraphs:

(7) The approved products lists located at:

<http://www.dot.state.wi.us/business/engrserv/electric/index.htm>

Contact information for the Wisconsin Department of Transportation Northeast Region Electrical Unit: Randy Asman, (920) 360-3107, randy.asman@dot.wi.gov

17.2 Work by Others.

At the interchange of USH 10 and STH 441, the Wisconsin Department of Transportation Northeast Region Electrical Unit will perform the following work:

- Furnish monotube poles, arms, steel luminaire arms, and plaques
- Provide and install two TS2 Traffic Signal Cabinets
- Terminate all cables and wire in the traffic signal cabinets
- Provide and install Gridsmart Bell Cameras

17.3 Conduit Rigid Nonmetallic Schedule 80 2-Inch, Item 652.0325.

Supplement standard spec 652 as follows:

Replace standard spec 652.3.1.1(4) with the following:

- (1) Furnish tracer wire in each conduit run that will receive future conductors as the conduit is laid. Install a 10 AWG. XLP insulated, stranded, copper, 600-volt AC, wire. Provide wire 4 feet longer than the conduit run and double it back at least 2 feet at each raceway access point. Anchor the tracer wire at each access point.

Append standard spec 652.3.1.1, Installation of Conduit, General, with the following:

- (7) All conduit ends shall be identified with indelible marker with the identification for the traffic signal/street light base, loop detector, or other facility they serve (i.e. NW SB1, D41).
- (8) All conduit runs should be as straight as possible to minimize material costs, construction costs, and to facilitate the pulling of electrical cable.
- (9) Conduit runs shall be cleaned out and have bell ends installed within 24 hours of completion of each conduit run.

17.4 Electrical Service Meter Breaker Pedestal for WisDOT Traffic Signal (USH 10 & STH 441), Item 656.0200.

A Description

Work under this item shall be according to standard spec 656 with the following addition.

B (Vacant)

C Construction

The contractor is responsible for making early application for the electric service lateral.

Contact We-Energies at (800) 714-7777 or at <http://www.we-energies.com/> to make application and request time of use meters.

The future monthly invoices can go to the following address:

For USH 10 & STH 441 Northbound:

Wisconsin Dept of Transportation
Expenditure Acct (S70-0450)
P.O. Box 7366
Madison, WI 53707-7366

For USH 10 & STH 441 Southbound:

Wisconsin Dept of Transportation
Expenditure Acct (S70-2008)
P.O. Box 7366
Madison, WI 53707-7366

D (Vacant)

E Payment

The contractor shall pay the utility company promptly for the electric service lateral installation cost.

17.5 Concrete Bases Type 7 Median, Item SPV.0060.350.

A Description

This work shall be according to the requirements of standard spec 654, the plans, standard detail drawings, and as hereinafter provided.

B Materials

Amend standard spec 654.2, Materials, by adding the following paragraph:

Furnish asphaltic material as required to restore disturbed areas adjacent to the concrete bases conforming to the requirements in standard spec 465.2 paragraph (2).

C Construction

Amend standard spec 654.3, Construction, by adding the following paragraphs:

Sawcut HMA surfaces as required to begin auguring for the concrete bases according to standard spec 690.3.2.

Restore areas adjacent to the concrete bases with asphaltic surfacing materials according to standard spec 465.3.

D Measurement

The department will measure Concrete Bases Type 7 Median as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|------------------------------|------|
| SPV.0060.350 | Concrete Bases Type 7 Median | EACH |

Payment for the Bases bid item is full compensation for providing concrete bases; for embedded conduit and electrical components; for anchor rods, nuts and washers; for bar steel reinforcement; for sawing HMA pavement, excavating, backfilling, restoring asphaltic surfaces, and disposing of surplus materials.

17.6 Anchor Bolt Cover Shroud, Item SPV.0060.351.**A Description**

This work shall be according to the requirements of standard spec 657 and as hereinafter provided.

B Materials

Furnish aluminum cover shroud according to the plans and standard spec 657.2.2.5 and as hereinafter provided:

Housing and cover plate shall be 12 gauge aluminum. Rivets or bolts shall be used to attach the cover plate to the housing. Rivets, if used, for attaching the cover plate to the housing shall be aluminum and sized according to the specifications determined by the fabricator of the unit. Bolts, if used, for attaching the cover plate to the housing shall be stainless steel. Provide non-metallic washers between the cover shroud and steel lock washer.

C Construction

According to the plans and standard spec 657.3 and as hereinafter provided:

Follow all manufacturer installation guidelines for installation of cover shroud and accessories. Apply silicone sealant between the top of the cover shroud body and the aluminum cover plate.

D Measurement

The department will measure Anchor Bolt Cover Shroud by each individual anchor bolt cover shroud, 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.0060.351 | Anchor Bolt Cover Shroud | EACH |

Payment is full compensation for furnishing and installing Anchor Bolt Cover Shroud.

17.7 Concrete Bases Type 1 Median, Item SPV.0060.352.

A Description

This work shall be according to the requirements of standard spec 654, the plans, standard detail drawings, and as hereinafter provided.

B Materials

B.1 Concrete Bases

According to standard spec 654.2.1, Concrete Bases.

B.2 Junction Boxes

Furnish 24 X 18 X 8 – inch hot-dipped zinc coated cast iron junction boxes with a recessed cover. Junction box shall meet NEMA 4 standards for protection against windblown dust and rain and splashing water. Furnish standard covers with stainless steel hex-head mounting bolts with each box assembly. Boxes shall have a neoprene gasket with provision for allowing drainage out of the box.

Junction boxes shall be furnished with factory installed mounting buttons as required to attach grounding lugs and mechanical connectors as shown on the plans. Provide engineer-approved protection that totally and permanently seals connections with a silicone or rubberized caulk.

B.3 Electrical Wiring Connectors

Furnish rubber insulated submersible secondary connectors rated for copper conductors (minimum 12 AWG) as required for splicing in each location. Secondary connectors shall include silicone grease and CO-OX oxide inhibitor and meet the performance requirements of ANSI C119.1 and C119.4.

B.4 Conduit, Fittings and Expansion/Deflection Couplings

Furnish rigid metallic and schedule 40 PVC conduit and fittings as shown on the plans conforming to the pertinent provisions of standard spec 652, Electrical Conduit.

Furnish UL listed expansion/deflection coupling joints as shown on the plans. Expansion/deflection coupling joints shall be rated for use with rigid metallic conduit and provide a watertight and corrosion resistant connection which allows for movement in all directions. Couplings shall maintain a constant inner diameter and provide a smooth insulated wireway for protection of the conductors. Couplings shall include an integral bonding jumper.

Refer to the plans and details to determine the number of deflection couplings needed per base.

B.5 Expansion Material

Furnish 3/4-inch expansion material according to standard spec 415.2.3, Expansion Joint Filler. Use elastic type joint filler to seal the surface of the expansion joint.

C Construction

Construct concrete bases according to standard spec 654.3, Construction.

Install junction boxes as shown in the plans and as the manufacturer directs.

Install expansion/deflection couplings as the manufacturer directs. Coordinate the connection of the conduit into the receiving roadway barrier prior to pouring the concrete base.

All secondary connectors and miscellaneous wiring, fusing and grounding connections shall be installed according to standard spec 659.3.2, Wiring and Fusing and as the manufacturer directs.

D Measurement

The department will measure Concrete Bases Type 1 Median as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|------------------------------|------|
| SPV.0060.352 | Concrete Bases Type 1 Median | EACH |

Payment for the Concrete Base Median Barrier bid item is full compensation for providing all materials including conduit, couplings, bushings, caps or plugs, or both, anchor rods, nuts, washers, expansion material, grounding electrodes, exothermic welds, copper equipment grounding conductors, bar steel reinforcement, junction boxes; for concrete; and for excavating, backfilling, and disposing of surplus materials.

17.8 Luminaires Utility LED B Special, Item SPV.0060.353; Luminaires Utility LED C Special, Item SPV.0060.354.

A Description

This special provision describes furnishing and installing Luminaires Utility LED type B and C Special according to standard spec 659, as shown in the plans, and as hereinafter provided.

B Materials

Furnish Cooper Navion LED Catalog # NVN-AF-02-D-U-T3R-10K-800-4N7-AP-WISDOT for Luminaires Utility LED B Special. Furnish Cooper Navion LED Catalog # NVN-AF-03-D-U-T3R-10K-800-4N7-AP-WISDOT for Luminaires Utility LED C Special.

The catalog numbers above specify an LED luminaire drive current of 800mA, as requested by the City of Appleton.

C Construction

All work to be completed as specified in standard spec 659.3.

D Measurement

The department will measure each Luminaires Utility LED B Special and Luminaires Utility LED C Special as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|----------------------------------|------|
| SPV.0060.353 | Luminaires Utility LED B Special | EACH |
| SPV.0060.354 | Luminaires Utility LED C Special | EACH |

Payment is full compensation for furnishing and installing all materials, including luminaire, accessories, hardware and fittings necessary to install the luminaire workable first class condition.

17.9 Remove Light Fixtures, Item SPV.0060.355.**A Description**

This work shall consist of removing the existing lighting fixtures, poles and bases from the interchange of USH 10 & STH 441 as shown in the plans and according to the requirements of standard spec 657, and as hereinafter provided.

B (Vacant)**C Construction**

The existing traffic lighting equipment shall be disconnected from the concrete bases and transported off site to the electrical subcontractor facilities and/or to a recycling/garbage facility.

D Measurement

The department will measure Remove Light Fixture bid item as an each unit, acceptably completed.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-----------------------|------|
| SPV.0060.355 | Remove Light Fixtures | EACH |

Payment for Remove Light Fixture is full compensation for removal of light fixtures, poles, bases and transporting to the appropriate facility.

17.10 Tray Cable, 2-8 AWG, Item SPV.0090.350.

A Description

This section describes furnishing and installing electrical tray cable consisting of two conductors in electrical conduit for roadway lighting as shown on the plans and described here in.

B Materials

Furnish conductors conforming to electrical wire, lighting specified in standard spec 655.2.6.

Furnish a cable consisting of 2 conductors, stranded copper, 600 volt AC, 90 degree Celsius rated wet/dry, PVC jacketed tray cable, of the specified quantity and wire size of conductors. Conductor jacket colors to be black and red.

C Construction

Install tray cable in electrical conduit as the plans show.

Provide an 18 inch length of cable in each hand-hole for termination. For all wires entering each pull box, provide an extra loop, approximately 6 feet in length, to remain in each pull box. This loop of wire is in addition to the amount needed to reach from the entrance conduit raceway end to the opening in the exiting conduit raceway.

Install cable with conductors in continuous lengths without splices from the cabinet terminal to the transformer base. Do not splice in pull boxes.

The City of Appleton will perform all terminations in the electrical cabinet. Clearly mark and label all circuits according the assignment the plans show.

D Measurement

The department will measure Tray Cable, 2-8 AWG by the linear foot for a two conductor cable, 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.0090.350 | Tray Cable, 2-8 AWG | LF |

Payment for the tray cable bid items is full compensation for providing electrical cable with specified conductors; for making all connections; for providing all connectors, including wire nuts, fuses, fuse holders, splices, tape, insulating varnish or sealant; and for testing the circuits.

The department will pay for wiring from the underground feeder system to the luminaire under the Electrical Wire Lighting bid item appropriate for the wire size the plans show.

17.11 Remove Traffic Signal (USH 10 & STH 441 NB), Item SPV.0105.450; (USH 10 & STH 441 SB), Item SPV.0105.451.

A Description

This work shall consist of removing the existing traffic signal equipment and associated cable/wire from the interchange of USH 10 and STH 441 as shown in the plans and according to the requirements of standard spec 657 and standard spec 658, standard detail drawings, and as hereinafter provided.

B (Vacant)

C Construction

After coordination with the NE Region Electrical Unit, the existing traffic signal equipment shall be disconnected from the concrete bases and the old signal cable/wire removed from the underground conduit system. After removal, the signals and cable/wire shall be transported off site to the electrical subcontractor's facilities and/or to a recycling/garbage facility.

D Measurement

The department will measure Remove Traffic Signal (location) bid item as a single lump sum 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.0105.450 | Remove Traffic Signal (USH 10 & STH 441 NB) | LS |
| SPV.0105.451 | Remove Traffic Signal (USH 10 & STH 441 SB) | LS |

Payment for Remove Traffic Signal is full compensation for removal and transporting to the appropriate facility.

18. Intelligent Transportation Systems.

18.1 Notice to Contractor – Work by Others.

Intelligent Transportation System (ITS)

Transmission of video and data to the STOC in Milwaukee and the Northeast Region Headquarters in Green Bay will be achieved through the use of relocated wireless radios.

18.2 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 department will furnish some of the equipment to be installed. Make a reasonable effort to discover defects in that equipment prior to installing it.

A.2 Surge Protection

Equip every ungrounded conductor wire entering or leaving any equipment cabinet with a surge protector. For purposes of this section, multiple cabinets on a single pole or foundation are considered a single cabinet.

B Materials

B.1 General

Only furnish equipment and component parts for this work that are new and have high quality workmanship. All controls, indicators, and connectors shall be clearly and permanently labeled in a manner approved by the engineer. All equipment of each type shall be identical.

All electrical equipment shall conform to the standards and requirements of the Wisconsin Electrical Code, the National Electrical Manufacturers Association (NEMA), National Electric Safety Council (NESC), Underwriter's Laboratory Inc. (UL) or the Electronic Industries Association (EIA), when applicable. All materials and workmanship shall conform to the requirements of the National Electrical Code (NEC), Rural Electrification Administration (REA), Standards of the American Society for Testing and Materials (ASTM), American Association of State Highway and Transportation Officials (AASHTO), requirements of the plans these special provisions, the standard specifications, and to any other codes, standards, or ordinances that may apply. All system wiring, conduit, grounding hardware and circuit breakers shall be in conformance with the National Electrical Code. Whenever reference is made to any of the standards mentioned, the reference shall be considered to mean the code, ordinance, or standard that is in effect at the time of the bid advertisement.

B.2 Outdoor Equipment

All conductive connectors, pins (except pins connected by soldering), and socket contacts shall be gold plated. Acrylic conformal coating shall protect each circuit board side that has conductive traces. Except for integrated circuits containing custom firmware, all components shall be soldered to the printed circuit board.

To prevent galvanic corrosion, all connections between dissimilar metals shall incorporate a means of keeping moisture out of the connection. Where the connection need not conduct electricity, interpose a non-absorbing, inert material or washer between the dissimilar metals. Use nonconductive liners and washers to insulate fasteners from dissimilar metals. Where the connection must conduct electricity, use a conductive sealant between the dissimilar metals. Alternatively, use an insulating gasket and a bond wire connecting the two metal parts.

B.3 Custom Equipment

Equipment that is not part of the manufacturer's standard product line, or that is made or modified specifically for this project, shall conform to the following requirements:

Where practical, electronics shall be modular plug-in assemblies to facilitate maintenance. Such assemblies shall be keyed to prevent incorrect insertion of modules into sockets.

All components shall be available from multiple manufacturers as part of the manufacturers' standard product lines. All must be clearly labeled with the value, part number, tolerance, or other information sufficient to enable a technician to order an exact replacement part.

Lamps used for indicator purposes shall be light-emitting diodes.

The printed circuit boards shall be composed of "two-ounce" copper on 1/16-inch thick fiberglass epoxy or equivalent type construction. Holes that carry electrical connections from one side of the boards to the other shall be completely plated through. Multilayer printed circuit boards shall not be used. The name or reference number used for the board in the drawings and maintenance manuals supplied to the department shall be permanently affixed to each board.

All components shall be mounted so that the identifying markings are visible without moving or removing any part, if practical.

B.4 Environmental Conditions

Equipment shall continue to operate as specified under the following ranges of environmental conditions, except as noted in the specifications for individual pieces of equipment.

1. Vibration and Shock: Vehicle speed and classification sensors and any other equipment mounted atop poles or on structures shall not be impaired by the continuous vibration caused by winds (up to 90 mph with a 30 percent gust factor) and traffic.
2. Duty Cycle: Continuous
3. Electromagnetic Radiation: The equipment shall not be impaired by ambient electrical or magnetic fields, such as those caused by power lines, transformers, and motors. The equipment shall not radiate signals that adversely affect other equipment.
4. Electrical Power:
 - a. Operating power: The equipment shall operate on 120-volts, 60-Hz, single-phase unless otherwise specified. It shall conform to its specified performance requirements when the input voltage varies from 89 to 135 volts and the frequency varies +3 Hz.
 - b. High frequency interference: The equipment operation shall be unaffected by power supply voltage spikes of up to 150 volts in amplitude and 10 microseconds duration.

- c. Line voltage transients: The equipment operation shall be unaffected by voltage transients of plus or minus 20 percent of nominal line voltage for a maximum duration of 50 milliseconds. Equipment in the field shall meet the power service transient requirements of NEMA Standard TS-2 when connected to the surge protectors in the cabinets.
- 5. Temperature and Humidity:
 - a. Field equipment: Equipment in the field shall meet the temperature and humidity requirements of NEMA Standard TS-2. Liquid crystal displays shall be undamaged by temperatures as high as 165 degrees F, and shall produce a usable display at temperatures up to 120 degrees F.
 - b. Equipment in Controlled Environments shall operate normally at any combination of temperatures between 50 degrees F and 100 degrees F, and humidity's between 5 percent and 90 percent, non-condensing, and with a temperature gradient of 9 degrees F per hour.

B.5 Patch Cables and Wiring

All cables and wiring between devices installed in a single cabinet, or in separate cabinets sharing a single concrete base, will be considered incidental to the installation of the devices and no separate payment will be made for them. It is anticipated that this will include fiber optic patch cables between termination panels and Ethernet switches, 10 / 100 MBPS Ethernet cables, RS-232 cables between individual devices and terminal servers, and power cables between individual devices and power sources within the cabinets.

B.6 Surge Protection

Low-voltage signal pairs, including twisted pair communication cable(s) entering each cabinet shall be protected by two-stage, plug-in surge protectors and shall be installed on both ends of camera control cables. The protectors shall meet or exceed the following minimum requirements:

- 1. The protectors shall suppress a peak surge current of up to 10k amps.
- 2. The protectors shall have a response time less than one nanosecond.
- 3. The protector shall clamp the voltage between the two wires at a voltage that is no more than twice the peak signal voltage, and clamp the voltage between each wire and ground at 50 volts.
- 4. The first stage of protection shall be a three-element gas discharge tube, and the second stage shall consist of silicon clamping devices.
- 5. The protector shall also contain a resettable fuse (PTC) to protect against excessive current.
- 6. There shall be no more than two pairs per protector.
- 7. It shall be possible to replace the protector without using tools.

Cables carrying power to curve signs shall be protected at the cabinet by grounded metal oxide varistors of appropriate voltages. The varistors must be at least 0.8 inch in diameter.

C Construction

C.1 Thread Protection

Provide rust, corrosion, and anti-seize protection at all thread assemblies of metallic parts by coating (non-spray) the mating surfaces with an approved compound. Failure to use an approved compound will result in no payment for the items to which coating was to have been applied.

C.2 Cable Installation

When installing new cables into conduits containing existing cables, remove the existing cables and reinstall the existing cables simultaneously with the new cables. Take every precaution necessary to protect the existing cables. In the event of avoidable damage to the existing cables, replace all damaged cables, in-kind, at no additional expense to the department. When cables are pulled into conduit, use a cable pulling lubricant approved by the cable manufacturer. Submit documentation supporting manufacturer approval of the lubricant to the engineer.

C.3 Wiring

Every conductor, except a conductor contained entirely within a single piece of equipment, must terminate either in a connector or on a terminal block. Provide and install the connectors and terminal blocks where needed, without separate payment. Use approved splice kits instead of connectors and terminal blocks for underground power cable splices.

Permanently label and key connectors to preclude improper connection. Obtain prior engineer approval for the labeling method(s) prior to use.

Terminal blocks must be affixed to panels that permanently identify the block and what wire connects to each terminal. This may be accomplished by silk screening or by installing a laminated printed card under the terminal block, with the labels on portions of the card that extend beyond the block. Installation of terminal blocks by drilling holes in the exterior wall of the cabinet is not acceptable.

Use barriers to protect personnel from accidental contact with all dangerous voltages.

Do not install conductors carrying AC power in the same wiring harness as conductors carrying control or communication signals.

Arrange wiring, including fiber optic pigtails, so that any removable assembly can be removed without disturbing wiring that is not associated with the assembly being removed.

Communication and control cables may not be spliced underground, except where indicated on the plans.

Cables in the Statewide Traffic Operations Center or in communication hubs, which are not contained within a single cabinet, shall have at least 10 feet of slack.

C.4 System Operations

If the contractor's operations unexpectedly interrupt Intelligent Transportation Systems (ITS) service, notify the engineer immediately and restore service within 24 hours. Repair all damaged facilities to the condition existing before the interruption. If service is not restored within 24 hours, the department may restore service to any operating device and deduct restoration costs from payments due the contractor.

C.5 Surge Protection

Arrange the equipment and cabinet wiring to minimize the distance between each conductor's point of entry and its protector. Locate the protector as far as possible from electronic equipment. Ensure that all wiring between the surge protectors and the point of entry is free from sharp bends.

D Measurement

No separate measurement will be made for the work described in this article.

E Payment

No separate payment will be made for the work described in this article. All work described in this article shall be included under the ITS items in the contract.
670-010 (20100709)

18.3 Intelligent Transportation Systems – Conduit.

Add the following to standard spec 671.2:

671.2.4 Locate Wire

Furnish and install a No. 14 AWG stranded copper wire for future locate purposes through each conduit run. Connect the locate wire by using a wire nut at each pull box, manhole, or other access point. Alternatively, use a single wire through the access points. All material furnished under this item shall meet the requirements of standard spec 655.
stp-671-005 (20150630)

18.4 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 |
|---|
| Sign, Dynamic Message, Freeway, 18" Character |
| Controller, Dynamic Message Sign, All Signs |
| Cabinet, Pole-Mounted, CCTV |
| Pole, 50', Freeway, With Lowering System |
| Camera, Traffic, Dome-Style, Outdoor |
| Encoder, Video MPG 2/4 (Hardened) 1-Channel |

| |
|--|
| Detector, Serial Data Interface Microwave Radar |
| Combination ethernet switch and terminal server with fiber ports - single mode |
| Switch, 9-port with dual SM ports |
| Furnish terminal server; 4 ports |
| Termination Panel, Fiber Optic, 6 Count, SC, Furnish Only |
| Cable, fiber optic, 6 count dielectric, furnish only |
| Cable, fiber optic, 72 count dielectric, furnish only |

Coordinate pickup of small department-furnished equipment, such as communications devices, cameras, and controllers, with Randy Asman of the WisDOT NE Region at 920-360-3107. Depending on the state-furnished item, pickup may occur at any of the following locations:

- WisDOT NE Region Office, 944 Vanderperren Way, Green Bay, WI 54304
- WisDOT Statewide Traffic Operations Center, 433 W. St. Paul Ave., Milwaukee, WI 53203
- Traffic & Parking Control Company (TAPCO), 5100 W Brown Deer Road, Brown Deer, WI 53223

Large department-furnished equipment, such as camera poles will be delivered by the supplier to a contractor-controlled site within Winnebago 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)

**18.5 Ramp Closure Gates Solar 24-FT, Item 662.2024.S;
Ramp Closure Gates Solar 30-FT, Item 662.2030.S;
Ramp Closure Gates Solar 40-FT, Item 662.2040.S.**

A Description

This special provision describes providing solar-powered freeway on-ramp closure gates on type 5 steel luminaire poles. This special provision also describes furnishing and delivering spare gate arms.

B Materials

B.1 General

Provide five user manuals and a listing of vendors and contact information for each manufactured component.

The engineer may allow alternates equal to specified manufactured components. The engineer may require plan detail modifications to accommodate alternates. The engineer may accept alternate arms or mounting adaptors only if the contractor can demonstrate that the department can easily remove and replace the arms.

B.2 Components

Furnish type 5 steel poles designed to carry twin 15-foot luminaire arms and conforming to standard spec 657 and with dimensions for acceptable installation of the ramp gate hardware as shown on the detail. Ensure a contiguous pole by eliminating the hand hole near base of pole, thus allowing uninhibited mounting of the gate pivot assembly.

Furnish galvanized steel nuts and bolts conforming to ASTM A307 except where designated as high strength (HS), conform to ASTM A325. For the ramp closure gate locking mechanism, furnish a handle nut to fit on a 3/4-inch bolt.

Furnish grade A36 steel for the gate supports, gate pivot assembly, and associated hardware galvanized after fabrication by either a mechanical or hot-dip process. Grind welded connections, rough edges, and burrs smooth before galvanizing to ensure a finished appearance. Ensure that the galvanized coating conforms to ASTM A 153.

Provide aluminum/fiberglass gate arms of the nominal length the bid item indicates and conforming to plan dimensions. Cover gate arms on two sides with alternating red and white shop-applied type H reflective from the department's approved products list. Also provide a shear pin base that is the manufacturer's "permanent pivot" style. Obtain components from:

B&B Roadway
15191 Hwy 243
Russellville, AL 35654
Tel: (888) 560-2060

Gate arm: model MU605

Furnish a worm gear winch with a single line vertical lift capacity of 2000 lbs. Ensure that the winch has hardened steel gears, a handgrip, permanently lubricated bearings, a reinforced arc-welded reel assembly, and mounting plate. Ensure that the winch can be mounted to the winch mount plate shown on the construction details and the handgrip can be operated without conflict with the pole or ramp gate assembly. Furnish a 2-inch outdoor rated, rot resistant polyester strap for the connection between the worm gear winch and the gate arm pivot assembly.

C Construction

C.1 Ramp Closure Gates

Under the Ramp Closure Gates bid items, provide ramp closure gate at the locations the plans show. Apply marine grade anti seize compound to all bolt threads and to the interface between the aluminum base and steel pole. The engineer may direct adjustment of the gate arm assembly to ensure the correct vertical and angular orientation of the completed closure gate.

Randy Asman, (920) 360-3107

C.2 Furnishing Gate Arms

Under the Ramp Closure Gate Arms Stockpile bid items, furnish and deliver spare arms of the nominal length the bid item indicates conforming to B.2. Deliver spare gate arms to an address provided by:

Randy Asman, (920) 360-3107

D Measurement

The department will measure the Ramp Closure Gates Solar bid items as each individual installation, acceptably completed.

The department will measure the Ramp Closure Gate Arms Stockpile bid items as each individual unit, acceptably furnished and delivered.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|-------------|--------------------------------|------|
| 662.2024.S | Ramp Closure Gates Solar 24-FT | EACH |
| 662.2030.S | Ramp Closure Gates Solar 30-FT | EACH |
| 662.2040.S | Ramp Closure Gates Solar 40-FT | EACH |

Payment for the Ramp Closure Gate Solar bid items is full compensation for providing ramp closure gates including support poles; for gate arm assemblies including guides, collars, and gate arms.

Payment for the Ramp Closure Gate Arms Stockpile is full compensation for furnishing and delivering spare ramp closure gate arms.

18.6 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 furnishing all testing.
stp-673-010 (20100630)

18.7 Install Overhead Freeway DMS Full Matrix, Item 678.0100.S.

A Description

This special provision describes installing a state-furnished, or an existing salvaged, dynamic message sign on a new sign structure.

B Materials

The department will provide the sign, or it will be salvaged, controller, and the control cable. The control cable will be multi-mode fiber optic cable.

Use an AWG #6 copper wire or equivalent bonding straps to bond the sign and cabinet to the structure. Use an AWG #6 solid, bare copper wire to bond the sign structure to the ground rod(s).

1. For the three wires carrying 120/240 VAC power from the cabinet to the sign, use single conductor, stranded copper, 120/240 VAC, XLP insulated, USE rated wire. Size the wire to carry the maximum amperage permitted by the main breakers in the sign.

Provide a 100-amp 120/240-VAC load center in the controller cabinet, along with breakers recommended by the sign manufacturer.

C Construction

Install the load center so that the main breakers control all power to the sign and cabinet. Provide at least three branch circuits, one for the sign, one for the controller and communication equipment, and one for all cabinet accessories, such as fan, light, and heater. Only protect the branch serving the controller and communication equipment with the second stage of the surge protector. Connect the power and control cables according to the manufacturer's recommendations. Run the cables in rigid metallic conduit or flexible metallic conduit, or combination of these, within the sign structure.

Bond the bottom of the sign structure to one or more ground rods. Use exothermic welding at each end of the ground wire, unless the steel structure has a suitable grounding lug. Use a device that measures resistance to ground using the three-point fall-of-potential method to ensure that the resistance from the sign's ground bar to ground does not exceed 4 ohms. Add more ground rods if necessary to achieve this requirement.

D Measurement

The department will measure Install Overhead Freeway DMS Full Matrix by each sign, acceptably installed and tested.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|-------------|--|------|
| 678.0100.S | Install Overhead Freeway DMS Full Matrix | EACH |

Payment is full compensation for installing and testing the sign and controller; providing cables, conduits, and fittings; for testing the sign; and for transporting materials.
stp-678-010 (20100630)

18.8 Remove and Deliver Existing Ramp Gate, Item SPV.0060.400.

A Description

This special provision describes removing existing ramp gates according to the pertinent provisions of standard spec 204 and as hereinafter provided. Furnishing, installing, and constructing new ramp gates shall be paid for separately.

B (Vacant)

C Construction

Arrange for the de-energizing of the ramp gates with the local electrical utility after receiving approval from the engineer that the existing ramp gate items can be removed.

Notify the department at least five working days prior to the removal of the ramp gate items. Complete the removal work as soon as possible following shut down of this equipment.

Remove identified standards and poles per plan from their concrete footings and disassemble out of traffic. Remove the identified bases from each gate. Remove the identified poles, arms, solar components, controller cabinets, hardware, flashers, and wiring/cabling from each ramp gate installation. Ensure that all access hand hole doors and all associated hardware remain intact. Properly dispose of the underground cable, internal wires, and fiber optic cable. Deliver the remaining materials to the department. Contact the department at least five working days prior to delivery to make arrangements.

D Measurement

The department will measure Remove and Deliver Existing Ramp Gate as each individual installation removed and delivered to the department, acceptably completed.

E Payment

The department will pay for the measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---------------------------------------|------|
| SPV.0060.400 | Remove and Deliver Existing Ramp Gate | EACH |

Payment is full compensation for removing, disassembling ramp gates, scrapping of some materials, disposing of scrap material, for delivering the requested materials to the department, and incidentals necessary to complete the contract work.

18.9 Remove and Relocate Camera Assembly, Item SPV.0060.401.

A Description

This special provision describes the removal and relocation of an in place camera assembly. Remove and relocate the common assembly according to standard spec 677 and hereinafter provided.

B Materials

Provide all tools and equipment necessary to remove and relocate the in place camera assembly.

C Construction

Prior to removal, the Field System Integrator must determine if all components of the camera assembly are fully functional. If any part of the camera assembly is found to be dysfunctional, contact Randy Asman of the WisDOT NE Region at (920) 360-3107.

Carefully remove the in place camera assembly at the location indicated in the plans. Remove all mounting hardware associated with the camera assembly. Remove all cables/wires connected to the camera back to the control cabinet.

Relocate and reinstall the removed materials as indicated in the plans. Reinstallation of the camera assembly, including any new materials required (cables and mounting hardware for example) is incidental to this bid item. Reinstall and make operational the camera assembly within 48 hours of removal. Storage of the removed materials prior to field reinstallation is the responsibility of the contractor and is incidental to this item.

Any materials to be reinstalled which are damaged during the removal and relocation process will be repaired or replaced at the expense of the contractor.

D Measurement

The department will measure Remove and Relocate Camera Assembly as each camera assembly, acceptably removed and relocated.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-------------------------------------|------|
| SPV.0060.401 | Remove and Relocate Camera Assembly | EACH |

Payment is full compensation for removal and relocation of the camera assembly.

18.10 Remove and Relocate Ethernet Switch, Item SPV.0060.402.

A Description

This special provision describes the removal and relocation of an in place Ethernet switch. Remove and relocate the Ethernet switch according to standard spec 677 and hereinafter provided.

B Materials

Provide all tools and equipment necessary to remove and relocate the in place Ethernet switch.

C Construction

Prior to removal, the Field System Integrator must determine if the Ethernet switch is fully functional. If any part of the Ethernet switch is found to be dysfunctional, contact Randy Asman of the WisDOT NE Region at (920) 360-3107.

Carefully remove the in place Ethernet switch at the location indicated in the plans. Remove all cables/wires connected to the Ethernet switch in the control cabinet.

Relocate and reinstall the removed materials as indicated in the plans. Reinstallation of the Ethernet switch, including any new materials required (e.g., cables) is incidental to this bid item. Reinstall and make operational the Ethernet switch within 48 hours of removal. Storage of the removed materials prior to field reinstallation is the responsibility of the contractor and is incidental to this item.

Any materials to be reinstalled which are damaged during the removal and relocation process will be repaired or replaced at the expense of the contractor.

D Measurement

The department will measure Remove and Relocate Ethernet Switch as each Ethernet switch, acceptably removed and relocated.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-------------------------------------|------|
| SPV.0060.402 | Remove and Relocate Ethernet Switch | EACH |

Payment is full compensation for removal and relocation of the Ethernet switch.

18.11 Remove and Relocate Video Encoder, Item SPV.0060.403.**A Description**

This special provision describes the removal and relocation of an in place video encoder.

B Materials

Provide all tools and equipment necessary to remove and relocate the in place video encoder.

C Construction

Prior to removal, the Field System Integrator must determine if the video encoder is fully functional. If the video encoder is found to be dysfunctional, contact Randy Asman of the WisDOT NE Region at (920) 360-3107.

Carefully remove the in place video encoder at the location indicated in the plans. Remove all cables/wires connected to the video encoder in the control cabinet.

Relocate and reinstall the removed materials as indicated in the plans. Reinstallation of the video encoder, including any new materials required (e.g., cables) is incidental to this bid item. Reinstall and make operational the video encoder within 48 hours of removal. Storage of the removed materials prior to field reinstallation is the responsibility of the contractor and is incidental to this item.

Any materials to be reinstalled which are damaged during the removal and relocation process will be repaired or replaced at the expense of the contractor.

D Measurement

The department will measure Remove and Relocate Video Encoder by each individual video encoder, acceptably removed and relocated.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-----------------------------------|------|
| SPV.0060.403 | Remove and Relocate Video Encoder | EACH |

Payment is full compensation for removal and relocation of the video encoder.

18.12 Remove and Relocate Pole Mounted Cabinet, Item SPV.0060.404.

A Description

This special provision describes the removal and relocation of an in place aluminum enclosure on a pole, as well as any associated electrical service disconnect box. Remove and relocate the cabinet assembly according to standard spec 677 and hereinafter provided.

B Materials

Provide all tools and equipment necessary to remove and relocate the in place cabinet assembly.

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.

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

Prior to removal, the Field System Integrator must determine if all components of the cabinet assembly are fully functional. If any part of the cabinet is found to be dysfunctional, contact Randy Asman of the WisDOT NE Region at (920) 360-3107.

Carefully remove the in place cabinet assembly at the location indicated in the plans. Remove all mounting hardware associated with the cabinet assembly. Remove all cables/wires connected to the cabinet assembly.

Relocate and reinstall the removed materials as indicated in the plans. Reinstallation of the cabinet assembly, including any new materials required (cables and mounting hardware for example) is incidental to this bid item. Reinstall and make operational the cabinet assembly within 48 hours of removal. Storage of the removed materials prior to field reinstallation is the responsibility of the contractor and is incidental to this item.

Fasten the field cabinet assembly 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 assembly as specified in standard spec 656.

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.

Any materials to be reinstalled which are damaged during the removal and relocation process will be repaired or replaced at the expense of the contractor.

D Measurement

The department will measure Remove and Relocate Pole Mounted Cabinet as each cabinet, acceptably removed and relocated.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--|------|
| SPV.0060.404 | Remove and Relocate Pole Mounted Cabinet | EACH |

Payment is full compensation for removal and relocation of the pole mounted cabinet.

18.13 Remove Wood Pole, Item SPV.0060.405.

A Description

This special provision describes the removal of an in place wood pole.

B Materials

Provide all tools and equipment necessary to remove the in place wood pole.

C Construction

Coordinate with Randy Asman of the WisDOT NE Region at (920) 360-3107 and WPS (as necessary) to disconnect the temporary power service at the location identified on the plans prior to the removal of the wood pole.

Carefully remove the in place wood pole at the location indicated in the plans.

Dispose of removed materials off department right-of-way.

D Measurement

The department will measure Remove Wood Pole by each individual removed wood pole, 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.0060.405 | Remove Wood Pole | EACH |

Payment is full compensation for removal and disposal of the wood pole.

18.14 Tracer Test Station, Item SPV.0060.406.

A Description

This special provision describes furnishing and installing tracer test station marker posts.

B Materials

Furnish tracer test station marker posts with high-impact plastic, stainless steel hardware and a minimum of five standard terminals. Ensure post material is fade resistant and UV stable.

C Construction

Install tracer test stations as shown on the plans or as directed by the engineer. Make connections to the tracer wires as appropriate.

D Measurement

The department will measure Tracer Test Station as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---------------------|------|
| SPV.0060.406 | Tracer Test Station | EACH |

Payment for Tracer Test Station is full compensation for furnishing and installing all materials, making all necessary connections, for restoration of ground to original condition including topsoil, sand, concrete, or other required materials; and for disposing of surplus materials.

18.15 Salvage Radio Link, Item SPV.0060.407.

A Description

This special provision describes the salvaging of an in place IP radio and antenna.

B Materials

Provide all tools and equipment necessary to remove and relocate the in place radio link.

C Construction

Prior to removal, the Field System Integrator must determine if the radio link is fully functional. If the radio link is found to be dysfunctional, contact Randy Asman of the WisDOT NE Region at (920) 360-3107.

Carefully remove the in place radio link at the location indicated in the plans. Remove all cables/wires connected to the radio link back to the control cabinet. Deliver the remaining materials to the department. Contact the department at least five working days prior to delivery to make arrangements.

D Measurement

The department will measure Salvage Radio Link by each individual radio link acceptably delivered to the department.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|--------------------|-------|
| SPV.0060.407 | Salvage Radio Link | EACHh |

Payment is full compensation for salvaging of the radio link and for delivering the requested materials to the department and incidentals necessary to complete the contract work.

18.16 Install Terminal Server, Item SPV.0060.408.**A Description**

This special provision describes installing department-furnished fiber optic termination server.

B Materials

Fiber optic server will be furnished by the department. Provide mounting hardware as necessary.

C Construction

Install 6-count fiber optic termination panels in pole or base mounted field cabinets. Install termination servers as shown on the plans, or as directed by the engineer.

D Measurement

The department will measure Install Termination Server as each individual installation, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|----------------------------|------|
| SPV.0060.408 | Install Termination Server | EACH |

Payment is full compensation for installation of the fiber optic termination server, furnishing and installing all necessary hardware.

18.17 Install Termination Panel, Item SPV.0060.409.**A Description**

This special provision describes installing department-furnished fiber optic termination panels.

B Materials

Fiber optic termination panels will be furnished by the department. Provide mounting hardware as necessary.

C Construction

Install 6-count fiber optic termination panels in pole or base mounted field cabinets. Install termination panels as shown on the plans, or as directed by the engineer.

D Measurement

The department will measure Install Termination Panel as each individual installation, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---------------------------|------|
| SPV.0060.409 | Install Termination Panel | EACH |

Payment is full compensation for installation of the fiber optic termination panel, furnishing and installing all necessary hardware.

18.18 Plaques Sequence Identification, Item SPV.0060.410.**A Description**

This special provision describes the furnishing and installation of Plaques Sequence Identification.

B Materials

Furnish components from the department's approved products list.

C Construction

Provide Plaques Sequence Identification suitable for outdoor construction.

D Measurement

The department will measure Plaques Sequence Identification as one unit, complete and in place.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---------------------------------|------|
| SPV.0060.410 | Plaques Sequence Identification | EACH |

Payment for Plaques Sequence Identification is full compensation for providing plaques including all installation and attachment hardware.

18.19 Tracer Wire 12-AWG, Item SPV.0090.400.

A Description

Work under this item consists of installing tracer wire alongside fiber optic communication equipment according to the details shown on the plans and as hereinafter provided.

B Materials

All wire shall meet the requirements of standard spec 655.

C Construction

Install a 12 AWG XLP insulated, solid, copper, yellow in color tracer wire each run of conduit which contains fiber optic cable. The wire shall be approximately 5 feet (1.5 m) longer than the run of conduit and shall be doubled back at least 2 feet (0.6 m) at each raceway access point. Anchor the tracer wire at each access point in a manner acceptable to the engineer. At each access point the wires from all conduits entering shall be twisted and joined using an appropriately sized wire nut. Wire that is installed to a traffic signal cabinet shall extend 3 feet beyond the conduit it enters the cabinet through.

Test the tracer wire following installation. Use a megger to perform ground resistance testing. Ensure that all wire tests, read infinity to ground. Provide results to the department. Replace tracer not meeting the infinity test result at no expense to the department.

D Measurement

The department will measure Tracer Wire 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.0090.400 | Tracer Wire 12-AWG | LF |

Payment is full compensation for furnishing and installing all materials, including wire, wire nuts, and incidentals necessary to complete this item of work.

18.20 Conduit HDPE 1-Duct 3-Inch, Item SPV.0090.402; Conduit HDPE Directional Bore 2-Duct 3-Inch, Item SPV.0090.403; Conduit HDPE Directional Bore 1-Duct 3-Inch, Item SPV.0090.404.

A Description

This special provision section describes furnishing and installing HDPE conduit according to standard spec 671.

B Materials

Supply the material according to standard spec 671.2. Provide conduit according to the following color schemes for the identified uses/cable:

- Trunk communications system conduit (3 conduits)
 - One blue conduit (72-count fiber optic cable)
 - One orange conduit (spare)
 - One brown conduit (spare)
- Local communications system conduit at each ITS site (number/size of conduits as indicated in the plans):
 - Blue conduits (6-ct fiber optic cable to ITS site (by others), microwave detector cable)
 - Orange conduits (spare)
- Local power conduit:
 - Gray conduit (electrical wire lighting, size as shown in the plans)

Conduits for each listed cable shall be continuous from ITS device/traffic signal controller/electrical meter pedestal to ITS cabinet.

C Construction

Install the conduit according to standard spec 671.3.

D Measurement

The department will measure Conduit HDPE 1-Duct 3-Inch, Conduit HDPE Directional Bore 2-Duct 3-Inch, and Conduit HDPE Directional Bore 1-Duct 3-Inch by the linear foot, acceptably completed.

E Payment

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

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|---|------|
| SPV.0090.402 | Conduit HDPE 1-Duct 3-Inch | LF |
| SPV.0090.403 | Conduit HDPE Directional Bore 2-Duct 3-Inch | LF |
| SPV.0090.404 | Conduit HDPE Directional Bore 1-Duct 3-Inch | LF |

Payment is full compensation according to standard spec 671.5.

19. Landscaping.

19.1 Bike Rack, Item SPV.0060.009.

A Description

This special provision describes the furnishing and installation of cityscape, 5 bike capacity with flanged surface mount.

B Materials

Cityscape, 5 bike capacity and flanged surface mount manufactured and available from:

Creative Pipe, Inc.
PO Box 2458
Rancho Mirage, CA 92270-1087
Phone: (760) 340-5555

Bike rack, model number: CP-5-F-P shall be 5 bike capacity and flanged surface mount.

Finish shall be black polyester powder coat. Contractor shall submit a sample of product material and finish for approval by engineer.

C Construction

Surface mount bike rack to concrete sidewalk with using manufacturer's mounting hardware and recommended mounting procedure.

D Measurement

The department will measure Bike Rack as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-------------|------|
| SPV.0060.009 | Bike Rack | EACH |

Payment is full compensation for furnishing all materials, labor, tools, mounting hardware, equipment and incidentals as required for installation of bike rack per manufacturer's instructions.

19.2 Trash Receptacle, Item SPV.0060.010.

A Description

This special provision describes the furnishing and installation of Urban Renaissance stainless steel trash receptacles.

B Materials

Urban Renaissance Trash Receptacle manufactured and available from:

Forms+Surfaces
30 Pine Street
Pittsburgh, PA 15223
Phone: (800) 451-0410
Fax: (412) 781-7840

Trash receptacle, model number SLURB-45SO, shall be 45-gallon, side opening stainless steel and cast aluminum.

Finish shall be black texture powder coat. Grillwork is made of stainless steel with Updrop pattern. Contractor shall submit a sample of product material and finish for approval by engineer.

C Construction

Surface mount trash receptacle to concrete sidewalk with using manufacturer's mounting hardware and recommended mounting procedure.

D Measurement

The department will measure Trash Receptacle as each individual unit, accpetably 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.0060.010 | Trash Receptacle | EACH |

Payment is full compensation for furnishing all materials, labor, tools, keys, mounting hardware, equipment and incidentals as required for installation of Trash Receptacle per manufacturer's instructions.

19.3 Backed Bench (3) Seats, Item SPV.0060.011.

A Description

This special provision describes the furnishing and installation of Tecno RS Seating System, 68.5 inch, Backed Bench (3) seats aluminum bench at the locations as indicated on the plans.

B Materials

Tecno RS Seating System – model Backed Bench (3) seats, no armrests and Backed Bench (5) seats, no armrests manufactured and available from:

Forms+Surfaces
30 Pine Street
Pittsburgh, PA 15223
Phone: (800) 451-0410
Fax: (412) 781-7840

Finish shall be black texture powder coat. Contractor shall submit a sample of product material and finish for approval by engineer.

C Construction

Wall mount bench to bus shelter concrete wall using manufacturer's mounting bracket, hardware and recommended mounting procedure.

Coordinate installation of the wall mounting brackets with contractor constructing concrete wall of bus shelter.

D Measurement

The department will measure each Backed Bench (3) seats as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|------------------------|------|
| SPV.0060.011 | Backed Bench (3) Seats | EACH |

Payment is full compensation for furnishing all materials, labor, tools, mounting hardware, equipment and incidentals as required for installation of Backed Bench (3) Seats per manufacturer's instructions.

19.4 Bus Shelter, Item SPV.0060.012.

A Description

This work consists of contractor/manufacturer design, supplying shop drawings for Bus Shelter, fabricating, delivering and installing Bus Shelter as shown on the plans.

Shelter shall be designed to withstand wind and snow loads appropriate for central Wisconsin.

Structural integrity of Bus Shelter shall be the responsibility of the designer. Bus Shelter drawings must be stamped by a professional engineer (PE) registered in the state where manufacturing/fabrication takes place.

B Materials

Roofing

Roofing shall be aluminum standing seam roof.

Roof finish shall be a thermoplastic or thermoset polymer resin powder coat in Federal Color (595C) 25177 with smooth gloss finish.

Transparent Panels

Panels shall be clear shatter resistant tempered glass, plastic or equal.

Concrete Wall

Vertical concrete work shall utilize a formliner with an ashlar stone pattern.

Use an opaque concrete stain manufactured for use on exterior concrete surfaces, consisting of a base coat and two additional highlight colors with matte (lusterless) finish.

Concrete stain colors are:

| | |
|----------------|---------------------|
| Base Color | Federal Color 36424 |
| Accent Color 1 | Federal Color 33522 |
| Accent Color 2 | Federal Color 30257 |

Engineer will supply contractor with a photographic example of a stained concrete ashlar wall as a guide to special highlight staining.

Wall mounted benches to be installed. Contractor shall coordinate with bench installer to accommodate wall mounting hardware.

Metal structural members

Posts, connections, brackets, roof structural members shall be aluminum.

Metal components shall be coated with a thermoplastic or thermoset polymer resin powder coat in Federal Color (595C) 25177 with smooth gloss finish.

C. Construction

Provide shop drawings to the engineer. Shop drawings indicate material, sizes of individual components, method of joining component pieces, locations, concrete reinforcing and all necessary details, dimensions, and information necessary for fabrication and installation of the Bus Shelter in conformance with the requirements of the contract. Do not begin fabrication prior to shop drawing review and approval by engineer.

Contractor shall supply a 12" X 12" sample panel of roofing material in the color and finish specified, along with manufacturer's product specifications.

Contractor shall supply a 24" X 24" concrete test panel utilizing the ashlar formliner and stain color specified' along with manufacturer's product specifications.

Contractor shall supply a 12" X 12" sample of the transparent panel material, along with manufacturer's product specifications.

Test panels and products must be approved by the engineer before any fabrication can begin. Accepted test panels will be the standard for workmanship, material and color for the project.

Engineer has the right to reject materials that are deemed sub-standard.

Concrete wall shall be cast in place over an existing concrete slab with integral foundation. The wall shall be cast so the outside face of the wall is even with the edge of the concrete slab/foundation.

Wall mounted benches to be installed. Contractor shall coordinate with bench installer to accommodate wall mounting hardware.

Apply the concrete stain when the temperature of the concrete surface is 45 degrees F or above.

Stone face surfaces shall be stained in a randomly mixed color arrangement. Each stone face that receives accent color 1 and 2 should have the protruding portions of the face (approximately 70-80%) stained to highlight the stone texture. Stain 40% of the stone wall surface with Accent Color 1 and 30% with Accent Color 2. The remaining 30% of the wall surface shall remain the base color.

Engineer will supply contractor with a photographic example of a stained concrete ashlar wall as a guide to special highlight staining.

Prior to staining, clean all concrete surfaces to be stained to ensure that the surface is free of any foreign material in order to accept the stain according to product requirements. Give special attention to smooth concrete surfaces to produce an acceptable surface texture. Correct any surface problems resulting from the surface preparation methods.

Transparent panels shall be mounted in a metal frame to be secured to the Bus Shelter corner posts, top horizontal structural member and top of wall.

Transparent panels shall be mounted with a 1 inch space between horizontal and vertical surfaces.

Provide engineer with the name, address, and phone number of representatives of the manufacturer/fabricator and construction contractor for future coordination.

Contractor shall remove and dispose of all excess material from site.

D Measurement

The department will measure Bus Shelter per each individual unit, acceptably completed and installed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-------------|------|
| SPV.0060.012 | Bus Shelter | EACH |

Payment is full compensation for design, shop drawings, fabrication, and delivery of shelter, materials and components, and for construction.

20. Miscellaneous – Incidental Construction.

20.1 Survey Monument Coordination.

The monument disturbance is anticipated at the intersection of Oneida Street and Valley Road.

The contractor is to notify the Northeast Regional Survey Coordinator, Cormac McInnis, (920) 492-5638, at least 30 days prior to the beginning of construction activities. The Regional Survey Coordinator will then make the arrangements to have the Public Land Survey Monument and Landmark Reference Monuments tied out.

After the majority of construction is complete (prior to restoration) the contractor is again to notify the Survey Coordinator that the site is ready for the replacement of the monuments. The Survey Coordinator will then make arrangements to have the Public Land Survey Monument and Landmark Reference Monuments reset.
(NER14-0429)

20.2 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)

20.3 Temporary Pedestrian Surface Asphalt, Item 644.1410.S.

A Description

This special provision describes providing, maintaining, and removing temporary pedestrian surface.

B Materials

Furnish 1 1/4-inch dense graded aggregate conforming to standard spec 305.2. Furnish:

- Asphaltic surface conforming to standard spec 465.2.

C Construction

Place, compact, and level a dense graded aggregate foundation before placing the surface.

Provide a firm, stable, and slip-resistant surface layer with vertical joints no higher than 1/4 inch and horizontal joints no wider than 1/2 inch. Sheet materials up to 1 inch thick may be lapped if the edge is beveled at 45 degrees or flatter. Asphalt may also be used to ramp up to materials up to 1 inch thick. Construct conforming to the following:

- Asphalt surface a minimum of 2 inches thick compacted with compactors, tampers, or rollers.

Align parallel to the existing roadway grade or, if outside of a street or highway right-of-way, do not exceed 5 percent longitudinal slope. Provide cross slope of 1 to 2 percent unless the engineer approves a steeper cross slope in writing.

Maintain the surface with a 4-foot minimum clear width and the specified joint and slope requirements. Repair or reconstruct installations disturbed during construction operations. Remove and dispose of as specified in standard spec 203.3.4 when no longer required.

D Measurement

The department will measure temporary pedestrian surface by the square foot, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|-------------|--------------------------------------|------|
| 644.1410.S | Temporary Pedestrian Surface Asphalt | SF |

Payment is full compensation for providing, maintaining, and removing temporary pedestrian surface.
stp-644-010 (20150630)

20.4 Temporary Curb Ramp, Item 644.1601.S.**A Description**

This special provision describes providing, maintaining, and removing temporary curb ramps.

B Materials

Furnish materials as follows:

- Asphaltic surface conforming to standard spec 465.2.
- Engineer-approved ready mixed concrete or ancillary concrete conforming to standard spec 602.2 except no QMP is required.
- Commercially available prefabricated curb ramps conforming to Americans with Disabilities Act Accessibility Guidelines.

Furnish yellow detectable warning fields conforming to Americans with Disabilities Act Accessibility Guidelines. Use either an engineer-approved surface-applied type or cast iron from the department's approved products list.

C Construction

Provide and maintain temporary curb ramps, including detectable warning fields, throughout the project duration. Place and compact a dense graded aggregate foundation before placing the curb ramp, unless the curb ramp is to be placed on existing roadway surface.

Remove and dispose temporary curb ramps and associated detectable warning fields when no longer required.

D Measurement

The department will measure temporary curb ramps by each individual ramp, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|-------------|---------------------|------|
| 644.1601.S | Temporary Curb Ramp | EACH |

Payment is full compensation for providing, maintaining, and removing temporary curb ramps.

stp-644-020 (20150630)

20.5 Temporary Pedestrian Safety Fence, Item 644.1616.S.

A Description

This special provision describes providing, maintaining, and removing the temporary pedestrian safety fence.

B Materials

Furnish notched metal “T” or “U” shaped fence posts weighing 1 1/3 pounds per foot or more.

Furnish select 2x4 dimensional lumber.

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 |

The engineer may allow prefabricated fencing systems conforming to Americans with Disabilities Act Accessibility Guidelines.

C Construction

Provide a continuous safety fence with the top edge free of sharp or rough edges.

Repair or reconstruct installations disturbed during construction operations. Remove and dispose of as specified in standard spec 204.3 when no longer required.

D Measurement

The department will measure Temporary Pedestrian Safety Fence 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 |
|-------------|-----------------------------------|------|
| 644.1616.S | Temporary Pedestrian Safety Fence | LF |

Payment is full compensation for providing, maintaining, and removing the temporary pedestrian safety fence.
stp-644-025 (20150630)

20.6 Crack and Damage Survey, Item 999.1500.S.

A Description

This special provision describes conducting a crack and damage survey of the residences and business located on the west side of the Midway Road Interchange as shown in the plans.

This Crack and Damage Survey shall consist of two parts. The first part, performed prior to construction activities, shall include a visual inspection, digital images, and a written report describing the existing defects in the building(s) being inspected. The second part, performed after the construction activities, shall also include a visual inspection, digital images, and written report describing any change in the building's condition.

B (Vacant)

C Construction

Prior to any construction activities, thoroughly inspect the building structures for existing defects, including interior and exterior walls. Submit a written report with the inspector's name, date of inspection, descriptions and locations of defects, and digital images. The intent of the written report and digital images is to procure a record of the general physical condition of the building's interior and exterior walls and foundation. The report shall be in text form and submitted electronically.

Take the images with a digital camera capable of producing sharp, grain free, high-contrast colored digital images with good shadow details. Each digital image shall be labeled with the following information:

ID _____
Building Location _____
View looking _____
Date _____
Photographer _____

Prior to the start of any construction activities pertinent to this survey, submit a copy of the written report and digital images to the engineer electronically.

After the construction activities are complete, conduct another survey in the same manner, obtain digital images, and submit another written report to the engineer electronically.

In lieu of digital images, a digital video camera capable of producing sharp, high contrast, colored digital video with good shadow detail may be utilized to perform this work.

D Measurement

The department will measure Crack and Damage Survey as single complete 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 |
|-------------|-------------------------|------|
| 999.1500.S | Crack and Damage Survey | LS |

Payment is full compensation for providing the before and after written reports, and for photographs or video.

stp-999-010 (20170615)

20.7 Utility Line Opening, Item SPV.0060.650.

A Description

This special provision describes excavating to uncover utilities for the purpose of determining the horizontal and vertical locations of those utilities and to determine if potential conflicts with proposed utilities exist.

B (Vacant)

C Construction

Complete the Utility Line Opening (ULO) as shown on the plan or as directed by the engineer. Excavate in a manner such that the utility in question is not damaged and the safety of the workers is not compromised.

Perform ULO as soon as possible as the engineer directs. Where utilities are within 6 feet of each other at a location, a single ULO shall be considered full payment to locate multiple utilities.

Ensure that all utility line openings have been approved by, and coordinated with, the engineer.

D Measurement

The department will measure Utility Line Opening by each unit, completed according to the contract and accepted.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|----------------------|------|
| SPV.0060.650 | Utility Line Opening | EACH |

Payment is full compensation for full compensation for locating, excavating, backfilling, and compacting the Utility Line Opening, as well as recording the horizontal and vertical location of the utility or utilities and determining if proximity clearances are met.

20.8 Adjusting Sanitary Manhole Covers, Item SPV.0060.651.

A Description

This special provision describes adjusting sanitary manhole covers.

B Materials

According to standard spec 611.2.

C Construction

According to standard spec 611.3.

Remove and reinstall existing chimney seals, as necessary to adjust manhole cover.

D Measurement

The department will measure Adjusting Sanitary Manhole Covers as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|-----------------------------------|------|
| SPV.0060.651 | Adjusting Sanitary Manhole Covers | EACH |

Payment for Adjusting Sanitary Manhole Covers is full compensation for providing all required materials, exclusive of frames, grates, or lids; for removing, reinstalling and adjusting the covers, including removing and reinstalling the existing chimney seal. (NER441-20141017)

20.9 Adjusting Water Valves, Item SPV.0060.652.

A Description

Adjust water valves to final pavement elevations, as shown in the plans and as hereinafter provided.

B Materials

Utilize existing valves where the required extent of adjustment allows. If additional sections are necessary, coordinate with the City of Appleton, Department of Public Works (contact Paula Vandehey at (920) 832-6474) or Village of Fox Crossing-Water (contact Jeff Roth at (920) 720-7175) to obtain required materials for the corresponding municipality.

C Construction

Prior to completion of paving operations, adjust the water valves to match the final proposed grade. Excavate and expose the existing water main valve to the depth needed to adjust the valve to grade, add or remove extensions(s) as needed, and backfill with base aggregate material according to the requirements for the adjacent roadway base course construction.

Complete adjustments in such a manner to avoid any damage to the water valves. Provide the City of Appleton, Department of Public Works or Village of Fox Crossing-Water two working days advance notice prior to adjusting the corresponding municipal valves to finished grade

D Measurement

The department will measure Adjusting Water Valves as a unit of work for each valve, acceptably adjusted 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.0060.652 | Adjusting Water Valves | EACH |

Payment is full compensation for adjusting each valve; excavating as necessary to access the valve; backfilling; repairing any damage done to the valve during adjustment or as a result of construction operations under this contract; and for adding new sections if necessary.

20.10 Adjusting Water Curb Stops, Item SPV.0060.653.

A Description

Adjust existing water curb stops to the correct plane and elevation to comply with proposed finished grades and as hereinafter provided.

B Materials

Carbon steel, black iron 1-0" Schedule 40 pipe and couplers, ASME/ANSI B-36.

Provide backfill conforming to standard spec 209, Grade 2.

C Construction

Adjust curb stops by removing the top cover; lower by cutting and rethreading the male pipe threads, or raise by installing a pipe coupler and suitable length of new pipe. Reinstall the top cover. In locations where the adjustment to finished grade is minor, there may be enough available adjustment within the exiting arch pattern curb stop base to raise or lower to finished grade.

The City of Appleton, Department of Public Works will locate all curb stops prior to construction. Provide a minimum of seven calendar days advance notice prior to the beginning of construction. Contact Paula Vandehey at (920) 832-6474.

The Village of Fox Crossing-Water will locate all curb stops prior to construction. Provide minimum of seven calendar days advance notice prior to the beginning of construction. Contact Jeff Roth at (920) 720-7175.

D Measurement

The department will measure Adjusting Water Curb Stops as each individual unit, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
|--------------|----------------------------|------|
| SPV.0060.653 | Adjusting Water Curb Stops | EACH |

Payment is full compensation for furnishing all materials, excavating, granular backfill, and paving; disposing of surplus material; and for cleaning out and restoring the work site.

20.11 Survey Project 1517-75-73 Item SPV.0105.002; Survey Project 1517-75-79 Item SPV.0105.003.

A Description

Standard spec 105.6 and 650 are modified to define the requirements for construction staking for this contract.

Replace standard spec 105.6.2 with the following:

The department will not perform any construction staking for this contract. Perform all survey required to layout and construct the work under this contract, subject to engineer's approval.

The survey includes establishing horizontal and vertical position for all aspects of construction including but not limited to storm sewer, subgrade, base, curb, gutter, curb and gutter, pipe culverts, structure layout, pavement, barriers (temporary and permanent), electrical installations, supplemental control, slope stakes, ponds, ITS, FTMS, ramp gates, parking lots, utilities, landscaping elements, irrigation system layout, installation of community sensitive design elements, traffic control items, fencing, etc.

The department may choose to perform quality assurance survey during construction. This quality assurance survey does not relieve the contractor of the responsibility for furnishing all survey work required under this contract.

Delete standard spec 650.1.

B (Vacant)

C Construction

Survey required under this item shall be according to all pertinent requirements of standard spec 650 and shall include all other miscellaneous survey required to layout and construct all work under this contract.

D Measurement

The department will measure Survey Project (ID) as a single lump sum unit of work, 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.0105.002 | Survey Project 1517-75-73 | LS |
| SPV.0105.003 | Survey Project 1517-75-79 | LS |

Payment is full compensation for performing all survey work required to layout and construct all work under this contract. No additional payments will be made for re-staking due to construction disturbance and knock-outs.

(NER441-20150117)

**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 12 (number) TrANS Graduate(s) be utilized on this contract.

- 2) **On-the-Job Training, Item ASP.1T0A, ASP 1 Apprentice.** At the rate of \$5.00 per hour on federal aid projects at the point when an employee who came out of the TrANS Program is subsequently entered into an apprenticeship contract in an underutilized skilled trade (this will include the Skilled Laborer Apprenticeship when that standard is implemented).

Eligibility and Duration: To the employing contractor, for the length of time the TrANS graduate is in apprentice status.

Contract Goal: To maintain the intent of the Equal Employment Opportunity program, it is a goal that 7 (number) TrANS Apprentice(s) be utilized on this contract.

- 3) The maximum duration of reimbursement is two years as a TrANS graduate plus time in apprentice status.
- 4) If a TrANS program is not available in the contractor's area and another training program is utilized, payment of On-the-Job Training hours may be approved by the Wisconsin Department of Transportation (WisDOT) if the training program meets the established acceptance criteria. Only On-the-Job Training Hours accumulated after WisDOT approval will be reimbursed as specified under Items ASP.1T0G and ASP.1T0A. For more information, contact the Disadvantaged Business Enterprise Office at the phone numbers listed above.
- 5) WisDOT reserves the right to deny payments under items ASP.1T0G and ASP.1T0A if the contractor either fails to provide training or there is evidence of a lack of good faith in meeting the requirements of this training special provision.

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 underrepresentation of members of these groups in highway construction skilled crafts.

The OJT Supportive Services (OJT/SS) Program was established in Title 23 Code of Federal Regulations (CFR), Part 230) to supplement the OJT program and support STA training programs by providing services to highway construction contractors and assistance to highway construction apprentices and trainees. The primary objectives of OJT/SS are:

- (1) To increase the overall effectiveness of the State highway agencies' approved training programs.
- (2) To seek other ways to increase the training opportunities for women, minorities, and disadvantaged individuals.

The STAs are responsible for establishing procedures, subject to the availability of Surface Transportation and Bridge Funds under 23 U.S.C. §140(b) (Nondiscrimination), for the provision of supportive services with respect to training programs approved under 23 CFR, Part 230(a) (Equal Employment Opportunity on Federal and Federal-aid Construction Contracts – including Supportive Services).

The contractor and subcontractor shall maintain records to demonstrate compliance with these apprenticeship requirements. Reasonable exemptions and modifications to and from any or all of these requirements will be determined by the Wisconsin Department of Transportation-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://wisconsin.gov/Documents/doing-business/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 Expeditors, Packagers, Manufacturers Representatives

- (1) No portion of the cost of the materials, supplies, services themselves will count for DBE credit; however, WisDOT will evaluate the fees or commissions charged when a prime purchases materials, supplies or services from a DBE certified firm which is neither a manufacturer nor a regular dealer, namely: brokers, packagers, manufacturers' representatives or other persons who arrange or expedite transactions.
- (2) Brokerage fees 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
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: _____

Fax: _____

Email: _____

Phone _____

Fax _____

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:

$$FA = \frac{CFI}{BFI} - 1 \times Q \times BFI$$

(plus is payment to contractor; minus is credit to the department)

| | | | |
|-------|-----|---|--------------------------------------|
| Where | FA | = | Fuel Cost Adjustment (plus or minus) |
| | CFI | = | Current Fuel Index |
| | BFI | = | Base Fuel Index |
| | Q | = | Monthly total gallons of fuel |

E Payment

A Fuel Cost Adjustment credit to the department will be deducted as a dollar amount each month from any sums due to the contractor. A Fuel Cost Adjustment payment to the contractor will be made as a dollar amount each month.

Upon completion of the work under the contract, any difference between the estimated quantities and the final quantities will be determined. An average CFI, calculated by averaging the CFI for all months that fuel cost adjustment was applied, will be applied to the quantity differences. The average CFI shall be applied in accordance with the procedure set forth in Section D.

ADDITIONAL SPECIAL PROVISION 6

ASP 6 - Modifications to the standard specifications

Make the following revisions to the standard specifications:

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.

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.

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 joint 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.

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.

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.

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 subplot. 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 |

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.
-

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.
-

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>

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 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 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:

| <u>County</u> | <u>%</u> | <u>County</u> | <u>%</u> | <u>County</u> | <u>%</u> |
|---------------|----------|---------------|----------|---------------|----------|
| Adams | 1.7 | Iowa | 1.7 | Polk | 2.2 |
| Ashland | 1.2 | Iron | 1.2 | Portage | 0.6 |
| Barron | 0.6 | Jackson | 0.6 | Price | 0.6 |
| Bayfield | 1.2 | Jefferson | 7.0 | Racine | 8.4 |
| Brown | 1.3 | Juneau | 0.6 | Richland | 1.7 |
| Buffalo | 0.6 | Kenosha | 3.0 | Rock | 3.1 |
| Burnett | 2.2 | Kewaunee | 1.0 | Rusk | 0.6 |
| Calumet | 0.9 | La Crosse | 0.9 | St. Croix | 2.9 |
| Chippewa | 0.5 | Lafayette | 0.5 | Sauk | 1.7 |
| Clark | 0.6 | Langlade | 0.6 | Sawyer | 0.6 |
| Columbia | 1.7 | Lincoln | 0.6 | Shawano | 1.0 |
| Crawford | 0.5 | Manitowoc | 1.0 | Sheboygan | 7.0 |
| Dane | 2.2 | Marathon | 0.6 | Taylor | 0.6 |
| Dodge | 7.0 | Marinette | 1.0 | Trempealeau | 0.6 |
| Door | 1.0 | Marquette | 1.7 | Vernon | 0.6 |
| Douglas | 1.0 | Menominee | 1.0 | Vilas | 0.6 |
| Dunn | 0.6 | Milwaukee | 8.0 | Walworth | 7.0 |
| Eau Claire | 0.5 | Monroe | 0.6 | Washburn | 0.6 |
| Florence | 1.0 | Oconto | 1.0 | Washington | 8.0 |
| Fond du Lac | 1.0 | Oneida | 0.6 | Waukesha | 8.0 |
| Forest | 1.0 | Outagamie | 0.9 | Waupaca | 1.0 |
| Grant | 0.5 | Ozaukee | 8.0 | Waushara | 1.0 |
| Green | 1.7 | Pepin | 0.6 | Winnebago | 0.9 |
| Green Lake | 1.0 | Pierce | 2.2 | Wood | 0.6 |

Goals for female participation for each trade: 6.9%

These goals are applicable to all the contractor's construction work, (whether or not it is federal or federally assisted), performed in the covered area. If the contractor performs construction work in the geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The contractor's compliance with the Executive Order and the Regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the Regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of \$10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

As referred to in this section, the Director means:

Director
Office of Federal Contract Compliance Programs
Ruess Federal Plaza
310 W. Wisconsin Ave., Suite 1115
Milwaukee, WI 53202

The "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

4. As used in this notice, and in the contract resulting from solicitation, the "covered area" is the county(ies) in Wisconsin to which this proposal applies.

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>

Cargo Preference Act Requirement

All Federal-aid projects shall comply with 46 CFR 381.7 (a) – (b) as follows:

(a) *Agreement Clauses*. “Use of United States-flag vessels:”

(1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.”

(b) *Contractor and Subcontractor Clauses*. “Use of United States-flag vessels: The contractor agrees—”

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

**WISCONSIN DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION AND SYSTEM DEVELOPMENT**

**SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS
FOR PROJECTS WITH FEDERAL AID**

I. PREVAILING WAGE RATES

The attached U.S. Department of Labor (Davis-Bacon Minimum Wage Rates) furnishes the minimum prevailing wage rates pursuant to the Davis-Bacon and Related Acts. The wage rates shown are the minimum rates required by the contract to be paid during its life, however this is not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to the local labor conditions and prospective changes or adjustments of wage rates. No increase in the contract price will be allowed or authorized on account of the payment of wage rates in excess of those listed herein.

II. COVERAGE OF TRUCK DRIVERS

Truck drivers are covered by Davis-Bacon Minimum Wage Rates in the following circumstances:

- Drivers of a contractor or subcontractor for time spent working on the site of the work.
- Drivers of a contractor or subcontractor for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimis. https://www.dol.gov/whd/FOH/FOH_Ch15.pdf
- Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the work and the actual construction site.
- Truck drivers transporting portions of the building or work between a site established specifically for the performance of the contract where a significant portion of such building or work is constructed and the physical place where the building or work called for in the contract will remain.

Truck drivers are not covered by Davis-Bacon Minimum Wage Rates in the following circumstances:

- Material delivery truck drivers while off the site of the work.
- Drivers of a contractor or subcontractor traveling between a Davis-Bacon job and a commercial supply facility while they are off the site of the work."
- Truck drivers whose time spent on the site of the work is de minimis, such as only a few minutes at a time merely to pick up or drop off materials or supplies.

Details are available online at:

<https://www.dol.gov/whd/recovery/pwrb/Tab9.pdf>

<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, TREMPLEAU, AND VERNON COUNTIES

| | Rates | Fringes |
|-----------------|----------|---------|
| BRICKLAYER..... | \$ 31.84 | 20.95 |

BRWI0002-002 06/01/2016

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

| | Rates | Fringes |
|-----------------|----------|---------|
| BRICKLAYER..... | \$ 37.04 | 19.70 |

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 |

BRWI0003-002 06/01/2016

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

| | Rates | Fringes |
|-----------------|----------|---------|
| BRICKLAYER..... | \$ 32.22 | 20.57 |

BRWI0004-002 06/01/2016

KENOSHA, RACINE, AND WALWORTH COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| BRICKLAYER..... | \$ 36.59 | 21.49 |
| ----- | | |
| 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 |
| ----- | | |
| BRWI0007-002 06/01/2016 | | |

GREEN, LAFAYETTE, AND ROCK COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| BRICKLAYER..... | \$ 33.53 | 20.95 |
| ----- | | |
| BRWI0008-002 06/01/2016 | | |

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| BRICKLAYER..... | \$ 36.98 | 20.62 |
| ----- | | |
| BRWI0011-002 06/01/2016 | | |

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| BRICKLAYER..... | \$ 32.22 | 20.57 |
| ----- | | |
| 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 |
| ----- | | |
| BRWI0034-002 06/01/2015 | | |

COLUMBIA AND SAUK COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| BRICKLAYER..... | \$ 32.86 | 17.22 |
| ----- | | |
| CARP0087-001 05/01/2016 | | |

BURNETT (W. of Hwy 48), PIERCE (W. of Hwy 29), POLK (W. of Hwys 35, 48 & 65), AND ST. CROIX (W. of Hwy 65) COUNTIES

| | Rates | Fringes |
|--------------------------------|----------|---------|
| Carpenter & Piledrivermen..... | \$ 36.85 | 18.39 |
| ----- | | |
| CARP0252-002 06/01/2016 | | |

ADAMS, BARRON, BAYFIELD (Eastern 2/3), BROWN, BUFFALO, BURNETT (E. of Hwy 48), CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE (except area bordering Michigan State Line), FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE (except N.E. corner), MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwys 29 & 65), POLK (E. of Hwys 35, 48 & 65), PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST CROIX (E. of Hwy 65), TAYLOR, TREMPLEAU, VERNON, VILAS,

WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD
COUNTIES

| | Rates | Fringes |
|------------------|----------|---------|
| CARPENTER | | |
| CARPENTER..... | \$ 33.56 | 18.00 |
| MILLWRIGHT..... | \$ 35.08 | 18.35 |
| PILEDRIIVER..... | \$ 34.12 | 18.00 |

CARP0252-010 06/01/2016

ASHLAND COUNTY

| | Rates | Fringes |
|------------------|----------|---------|
| Carpenters | | |
| Carpenter..... | \$ 33.56 | 18.00 |
| Millwright..... | \$ 35.08 | 18.35 |
| Pile Driver..... | \$ 34.12 | 18.00 |

CARP0264-003 06/01/2016

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WAUKESHA, AND WASHINGTON
COUNTIES

| | Rates | Fringes |
|----------------|----------|---------|
| CARPENTER..... | \$ 35.78 | 22.11 |

CARP0361-004 05/01/2016

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

| | Rates | Fringes |
|----------------|----------|---------|
| CARPENTER..... | \$ 34.57 | 18.16 |

CARP2337-001 06/01/2016

ZONE A: MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON

ZONE B: KENOSHA & RACINE

| | Rates | Fringes |
|---------------|----------|---------|
| PILEDRIVERMAN | | |
| Zone A..... | \$ 31.03 | 22.69 |
| Zone B..... | \$ 31.03 | 22.69 |

* ELEC0014-002 12/01/2017

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, TREMPPEALEAU, VERNON, AND WASHBURN
COUNTIES

| | Rates | Fringes |
|--------------------|----------|---------|
| Electricians:..... | \$ 33.21 | 19.75 |

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).

ELEC0127-002 06/01/2017

KENOSHA COUNTY

| | Rates | Fringes |
|--------------------|----------|-----------|
| Electricians:..... | \$ 38.50 | 30%+10.57 |

ELEC0158-002 06/05/2017

BROWN, DOOR, KEWAUNEE, MANITOWOC (except Schleswig), MARINETTE (Wausaukee and area South thereof), OCONTO, MENOMINEE (East of a line 6 miles West of the West boundary of Oconto County), SHAWANO (Except Area North of Townships of Aniwa and Hutchins) COUNTIES

| | Rates | Fringes |
|--------------------|----------|---------|
| Electricians:..... | \$ 31.48 | 19.18 |

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 |

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 |

ELEC0242-005 06/04/2017

DOUGLAS COUNTY

| | Rates | Fringes |
|--------------------|----------|---------|
| Electricians:..... | \$ 35.90 | 25.64 |

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 |

ELEC0430-002 06/01/2017

RACINE COUNTY (Except Burlington Township)

| | Rates | Fringes |
|--|-------|---------|
|--|-------|---------|

| | | |
|--------------------|----------|-------|
| Electricians:..... | \$ 37.32 | 21.07 |
|--------------------|----------|-------|

ELEC0494-005 06/01/2017

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

| | | |
|--------------------|----------|---------|
| | Rates | Fringes |
| Electricians:..... | \$ 37.51 | 24.42 |

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 |

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 carillon, antenna distribution systems, clock and program systems and low-voltage systems such as visual nurse call, audio/visual nurse call systems, doctors entrance register systems. Includes all wire and cable carrying audio, visual, data, light and radio frequency signals. Includes the installation of conduit, wiremold, or raceways in existing structures that have been occupied for six months or more where required for the protection of the wire or cable, but does not mean a complete conduit or raceway system. work covered does not include the installation of conduit, wiremold or any raceways in any new construction, or the installation of power supply outlets by means of which external electric power is supplied to any of the foregoing equipment or products

ELEC0577-003 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 |

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 |

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 |

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; bituminous paver; bump cutter & grooving machine; milling machine; screed (bituminous paver); asphalt heater, planer & scarifier; Backhoes (excavators) weighing under 130,000 lbs; grader or motor patrol; tractor (scraper, dozer, pusher, loader); scraper - rubber tired (single or twin engine); endloader; hydraulic backhoe (tractor type); trenching machine; skid rigs; tractor, side boom (heavy); drilling or boring machine (mechanical heavy); roller over 5 tons; percussion or rotary drilling machine; air track; blaster; loading machine (conveyor); tugger; boatmen; winches & A-frames; post driver; material hoist.

GROUP 4: Greaser, roller steel (5 tons or less); roller (pneumatic tired) - self propelled; tractor (mounted or towed compactors & light equipment); shouldering machine; self-propelled chip spreader; concrete spreader; finishing machine; mechanical float; curing machine; power subgrader; joint sawer (multiple blade) belting machine; burlap machine; texturing machine; tractor endloader (rubber tired) - light; jeep digger; forklift; mulcher; launch operator; fireman, environmental burner

GROUP 5: Air compressor; power pack; vibrator hammer and extractor; heavy equipment, leadman; tank car heaters; stump chipper; curb machine operator; Concrete proportioning plants; generators; mudjack operator; rock breaker; crusher or screening plant; screed (milling machine); automatic belt conveyor and surge bin; pug mill operator; Oiler, pump (over 3 inches); Drilling Machine

Tender.

GROUP 6: Off-road material hauler with or without ejector.

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.

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.

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 |

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 |

IRON0512-008 05/01/2017

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON,
PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPPEALEAU
COUNTIES

| | Rates | Fringes |
|-----------------|----------|---------|
| IRONWORKER..... | \$ 36.50 | 26.45 |

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 |

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 Sawyer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagperson; traffic control person

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 Sawyer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated);

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson and Traffic Control Person

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 Sawyer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagman; traffic control person

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, TREMPLEAU, 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; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawyer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator, Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson; Traffic Control

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;
Bituminous Worker (Dumper, Ironer, Smoother, and Tamper);
Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawyer and Filler
(Pavement); Vibrator or Tamper Operator (Mechanical Hand
Operated); Chain Saw Operator; Demolition Burning Torch
Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter
(Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; Powderman

GROUP 6: Flagperson and Traffic Control Person

* PAIN0106-008 05/01/2017

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 |

PAIN0108-002 06/01/2017

RACINE COUNTY

| | Rates | Fringes |
|------------------------|----------|---------|
| Painters: | | |
| Brush, Roller..... | \$ 33.74 | 18.95 |
| Spray & Sandblast..... | \$ 34.74 | 18.95 |

PAIN0259-002 05/01/2008

BARRON, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK,
SAWYER, ST. CROIX, AND WASHBURN COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| PAINTER..... | \$ 24.11 | 12.15 |

PAIN0259-004 05/01/2015

BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPLEAU, AND
VERNON COUNTIES

| | Rates | Fringes |
|--|-------|---------|
|--|-------|---------|

| | | |
|---|-----------------------|---------|
| PAINTER..... | \$ 22.03 | 12.45 |
| ----- | | |
| 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 |
| ----- | | |
| 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. |
| ----- | | |
| 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 |
| ----- | | |
| 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 |
| ----- | | |
| PAIN1011-002 06/01/2017 | | |
| FLORENCE COUNTY | | |
| | Rates | Fringes |
| Painters:..... | \$ 24.86 | 12.23 |
| ----- | | |
| 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, TREMPLEAU, AND VERNON COUNTIES

AREA 4: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA 5: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA 6: KENOSHA AND RACINE COUNTIES

TEAM0039-001 06/01/2017

| | 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 |
| ----- | | |

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)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of

the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour 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.

=====

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 Schedule of Items

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Federal ID(s): WISC 2018157, WISC 2018158

SECTION: 0001

Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0002 | 201.0105 Clearing | 150.000 STA | _____. | _____. |
| 0004 | 201.0205 Grubbing | 150.000 STA | _____. | _____. |
| 0006 | 203.0100 Removing Small Pipe Culverts | 13.000 EACH | _____. | _____. |
| 0008 | 204.0100 Removing Pavement | 103,182.000 SY | _____. | _____. |
| 0010 | 204.0110 Removing Asphaltic Surface | 24,521.000 SY | _____. | _____. |
| 0012 | 204.0120 Removing Asphaltic Surface Milling | 8,386.000 SY | _____. | _____. |
| 0014 | 204.0150 Removing Curb & Gutter | 440.000 LF | _____. | _____. |
| 0016 | 204.0155 Removing Concrete Sidewalk | 1,326.000 SY | _____. | _____. |
| 0018 | 204.0165 Removing Guardrail | 1,295.000 LF | _____. | _____. |
| 0020 | 204.0170 Removing Fence | 9,960.000 LF | _____. | _____. |
| 0022 | 204.0175 Removing Concrete Slope Paving | 636.000 SY | _____. | _____. |
| 0024 | 204.0180 Removing Delineators and Markers | 124.000 EACH | _____. | _____. |
| 0026 | 204.0190 Removing Surface Drains | 1.000 EACH | _____. | _____. |
| 0028 | 204.0195 Removing Concrete Bases | 6.000 EACH | _____. | _____. |
| 0030 | 204.0210 Removing Manholes | 30.000 EACH | _____. | _____. |
| 0032 | 204.0220 Removing Inlets | 62.000 EACH | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0034 | 204.0245 Removing Storm Sewer (size) 01. 12-15-Inch | 2,477.000 LF | _____. | _____. |
| 0036 | 204.0245 Removing Storm Sewer (size) 02. 18-21-Inch | 3,097.000 LF | _____. | _____. |
| 0038 | 204.0245 Removing Storm Sewer (size) 03. 24-30-Inch | 7,022.000 LF | _____. | _____. |
| 0040 | 204.0245 Removing Storm Sewer (size) 04. 36-42-Inch | 560.000 LF | _____. | _____. |
| 0042 | 204.0245 Removing Storm Sewer (size) 05. 48-54-Inch | 2,332.000 LF | _____. | _____. |
| 0044 | 204.0280 Sealing Pipes | 1.000 EACH | _____. | _____. |
| 0046 | 204.9090.S Removing (item description) 01. Noise Barrier | 3,676.000 LF | _____. | _____. |
| 0048 | 204.9090.S Removing (item description) 02. Underdrain | 38,639.000 LF | _____. | _____. |
| 0050 | 205.0100 Excavation Common | 408,513.000 CY | _____. | _____. |
| 0052 | 209.1100 Backfill Granular Grade 1 | 20.000 CY | _____. | _____. |
| 0054 | 209.2100 Backfill Granular Grade 2 | 580.000 CY | _____. | _____. |
| 0056 | 210.1100 Backfill Structure Type A | 227.000 CY | _____. | _____. |
| 0058 | 213.0100 Finishing Roadway (project) 01. 1517-75-73 | 1.000 EACH | _____. | _____. |
| 0060 | 213.0100 Finishing Roadway (project) 02. 1517-75-79 | 1.000 EACH | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0062 | 305.0110 Base Aggregate Dense 3/4-Inch | 26,257.000 TON | _____. | _____. |
| 0064 | 305.0120 Base Aggregate Dense 1 1/4-Inch | 122,215.000 TON | _____. | _____. |
| 0066 | 310.0110 Base Aggregate Open-Graded | 997.000 TON | _____. | _____. |
| 0068 | 311.0110 Breaker Run | 250,358.000 TON | _____. | _____. |
| 0070 | 312.0110 Select Crushed Material | 7,601.000 TON | _____. | _____. |
| 0072 | 320.0105 Concrete Base 4-Inch | 10,379.000 SY | _____. | _____. |
| 0074 | 320.0155 Concrete Base 9-Inch | 3,548.000 SY | _____. | _____. |
| 0076 | 415.0120 Concrete Pavement 12-Inch | 62.000 SY | _____. | _____. |
| 0078 | 415.0410 Concrete Pavement Approach Slab | 486.000 SY | _____. | _____. |
| 0080 | 415.5110.S Concrete Pavement Joint Layout | 1.000 LS | _____. | _____. |
| 0082 | 416.0160 Concrete Driveway 6-Inch | 212.000 SY | _____. | _____. |
| 0084 | 416.0610 Drilled Tie Bars | 1,152.000 EACH | _____. | _____. |
| 0086 | 416.0620 Drilled Dowel Bars | 375.000 EACH | _____. | _____. |
| 0088 | 416.1010 Concrete Surface Drains | 10.000 CY | _____. | _____. |
| 0090 | 416.1110 Concrete Shoulder Rumble Strips | 59,375.000 LF | _____. | _____. |
| 0092 | 440.4410 Incentive IRI Ride | 43,330.000 DOL | 1.00000 | 43,330.00 |
| 0094 | 450.4000 HMA Cold Weather Paving | 6,175.000 TON | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0096 | 455.0605 Tack Coat | 2,546.000 GAL | _____. | _____. |
| 0098 | 460.2000 Incentive Density HMA Pavement | 7,795.000 DOL | 1.00000 | 7,795.00 |
| 0100 | 460.5223 HMA Pavement 3 LT 58-28 S | 6,807.000 TON | _____. | _____. |
| 0102 | 460.5224 HMA Pavement 4 LT 58-28 S | 4,257.000 TON | _____. | _____. |
| 0104 | 460.7423 HMA Pavement 3 HT 58-28 H | 696.000 TON | _____. | _____. |
| 0106 | 460.7424 HMA Pavement 4 HT 58-28 H | 271.000 TON | _____. | _____. |
| 0108 | 465.0105 Asphaltic Surface | 117.000 TON | _____. | _____. |
| 0110 | 465.0125 Asphaltic Surface Temporary | 10,561.000 TON | _____. | _____. |
| 0112 | 465.0310 Asphaltic Curb | 90.000 LF | _____. | _____. |
| 0114 | 465.0315 Asphaltic Flumes | 34.000 SY | _____. | _____. |
| 0116 | 465.0400 Asphaltic Shoulder Rumble Strips | 630.000 LF | _____. | _____. |
| 0118 | 502.3200 Protective Surface Treatment | 1,190.000 SY | _____. | _____. |
| 0120 | 502.3210 Pigmented Surface Sealer | 880.000 SY | _____. | _____. |
| 0122 | 504.0500 Concrete Masonry Retaining Walls | 755.000 CY | _____. | _____. |
| 0124 | 505.0600 Bar Steel Reinforcement HS Coated Structures | 84,670.000 LB | _____. | _____. |
| 0126 | 509.5100.S Polymer Overlay 01. B-70-113 | 1,140.000 SY | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0128 | 509.5100.S Polymer Overlay 02. B-70-114 | 1,140.000 SY | _____. | _____. |
| 0130 | 509.5100.S Polymer Overlay 03. B-70-115 | 1,185.000 SY | _____. | _____. |
| 0132 | 509.5100.S Polymer Overlay 04. B-70-116 | 1,193.000 SY | _____. | _____. |
| 0134 | 509.5100.S Polymer Overlay 05. B-70-423 | 1,331.000 SY | _____. | _____. |
| 0136 | 509.5100.S Polymer Overlay 06. B-70-424 | 1,287.000 SY | _____. | _____. |
| 0138 | 511.1200 Temporary Shoring (structure) 01. S-70-217 | 200.000 SF | _____. | _____. |
| 0140 | 516.0500 Rubberized Membrane Waterproofing | 59.000 SY | _____. | _____. |
| 0142 | 517.1010.S Concrete Staining (structure) 01. R-70-141 | 9,340.000 SF | _____. | _____. |
| 0144 | 517.1050.S Architectural Surface Treatment (structure) 01. R-70-141 | 6,635.000 SF | _____. | _____. |
| 0146 | 520.2018 Culvert Pipe Temporary 18-Inch | 1,242.000 LF | _____. | _____. |
| 0148 | 520.8000 Concrete Collars for Pipe | 23.000 EACH | _____. | _____. |
| 0150 | 521.1018 Apron Endwalls for Culvert Pipe Steel 18-Inch | 10.000 EACH | _____. | _____. |
| 0152 | 521.2005.S Surface Drain Pipe Corrugated Metal Slotted (inch) 01. 18-Inch | 879.000 LF | _____. | _____. |
| 0154 | 521.3118 Culvert Pipe Corrugated Steel 18-Inch | 109.000 LF | _____. | _____. |
| 0156 | 522.1012 Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch | 6.000 EACH | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0158 | 522.1018 Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch | 8.000 EACH | _____. | _____. |
| 0160 | 522.1024 Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch | 13.000 EACH | _____. | _____. |
| 0162 | 522.1030 Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch | 1.000 EACH | _____. | _____. |
| 0164 | 522.1036 Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch | 11.000 EACH | _____. | _____. |
| 0166 | 522.1060 Apron Endwalls for Culvert Pipe Reinforced Concrete 60-Inch | 2.000 EACH | _____. | _____. |
| 0168 | 522.2619 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch | 2.000 EACH | _____. | _____. |
| 0170 | 522.2658 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 58x91-Inch | 1.000 EACH | _____. | _____. |
| 0172 | 531.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 001. N-70-121 | 31,050.000 SF | _____. | _____. |
| 0174 | 531.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 002. N-70-130 | 19,910.000 SF | _____. | _____. |
| 0176 | 531.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 003. N-70-131 | 56,700.000 SF | _____. | _____. |
| 0178 | 531.0300.S Noise Barriers Double-Sided Sound Absorptive (structure) 004. N-70-140 | 29,625.000 SF | _____. | _____. |
| 0180 | 550.1100 Piling Steel HP 10-Inch X 42 Lb | 860.000 LF | _____. | _____. |
| 0182 | 601.0405 Concrete Curb & Gutter 18-Inch Type A | 3,831.000 LF | _____. | _____. |



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Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0184 | 601.0409 Concrete Curb & Gutter 30-Inch Type A | 3,952.000 LF | _____. | _____. |
| 0186 | 601.0452 Concrete Curb & Gutter Integral 30-Inch Type D | 2,266.000 LF | _____. | _____. |
| 0188 | 601.0551 Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type A | 407.000 LF | _____. | _____. |
| 0190 | 601.0600 Concrete Curb Pedestrian | 1,008.000 LF | _____. | _____. |
| 0192 | 602.0410 Concrete Sidewalk 5-Inch | 28,718.000 SF | _____. | _____. |
| 0194 | 602.0515 Curb Ramp Detectable Warning Field Natural Patina | 219.000 SF | _____. | _____. |
| 0196 | 602.0615 Curb Ramp Detectable Warning Field Radial Natural Patina | 86.000 SF | _____. | _____. |
| 0198 | 603.1132 Concrete Barrier Type S32 | 2,239.000 LF | _____. | _____. |
| 0200 | 603.1142 Concrete Barrier Type S42 | 1,861.000 LF | _____. | _____. |
| 0202 | 603.1156 Concrete Barrier Type S56 | 20,165.000 LF | _____. | _____. |
| 0204 | 603.1256 Concrete Barrier Type S56A | 324.000 LF | _____. | _____. |
| 0206 | 603.1442 Concrete Barrier Type S42C | 266.000 LF | _____. | _____. |
| 0208 | 603.1456 Concrete Barrier Type S56C | 1,813.000 LF | _____. | _____. |
| 0210 | 603.3513 Concrete Barrier Transition Type S32 to S36 | 4.000 EACH | _____. | _____. |
| 0212 | 603.3535 Concrete Barrier Transition Type S36 to S42 | 4.000 EACH | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0214 | 603.3559 Concrete Barrier Transition Type S42 to S56 | 8.000 EACH | _____. | _____. |
| 0216 | 603.8000 Concrete Barrier Temporary Precast Delivered | 58,911.000 LF | _____. | _____. |
| 0218 | 603.8125 Concrete Barrier Temporary Precast Installed | 82,509.000 LF | _____. | _____. |
| 0220 | 604.0400 Slope Paving Concrete | 1,675.000 SY | _____. | _____. |
| 0222 | 604.0500 Slope Paving Crushed Aggregate | 1,340.000 SY | _____. | _____. |
| 0224 | 606.0200 Riprap Medium | 212.000 CY | _____. | _____. |
| 0226 | 606.0300 Riprap Heavy | 2,100.000 CY | _____. | _____. |
| 0228 | 608.0312 Storm Sewer Pipe Reinforced Concrete Class III 12-Inch | 2,749.000 LF | _____. | _____. |
| 0230 | 608.0315 Storm Sewer Pipe Reinforced Concrete Class III 15-Inch | 138.000 LF | _____. | _____. |
| 0232 | 608.0318 Storm Sewer Pipe Reinforced Concrete Class III 18-Inch | 2,884.000 LF | _____. | _____. |
| 0234 | 608.0324 Storm Sewer Pipe Reinforced Concrete Class III 24-Inch | 12,910.000 LF | _____. | _____. |
| 0236 | 608.0327 Storm Sewer Pipe Reinforced Concrete Class III 27-Inch | 39.000 LF | _____. | _____. |
| 0238 | 608.0330 Storm Sewer Pipe Reinforced Concrete Class III 30-Inch | 545.000 LF | _____. | _____. |
| 0240 | 608.0336 Storm Sewer Pipe Reinforced Concrete Class III 36-Inch | 3,142.000 LF | _____. | _____. |



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|----------------------|--|--------------------------------|------------|------------|
| 0242 | 608.0342 Storm Sewer Pipe Reinforced Concrete Class III 42-Inch | 164.000 LF | _____. | _____. |
| 0244 | 608.0348 Storm Sewer Pipe Reinforced Concrete Class III 48-Inch | 1,728.000 LF | _____. | _____. |
| 0246 | 608.0360 Storm Sewer Pipe Reinforced Concrete Class III 60-Inch | 184.000 LF | _____. | _____. |
| 0248 | 608.0430 Storm Sewer Pipe Reinforced Concrete Class IV 30-Inch | 60.000 LF | _____. | _____. |
| 0250 | 608.2319 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 19x30-Inch | 49.000 LF | _____. | _____. |
| 0252 | 608.2329 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 29x45-Inch | 295.000 LF | _____. | _____. |
| 0254 | 608.2338 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 38x60-Inch | 683.000 LF | _____. | _____. |
| 0256 | 608.2348 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 48x76-Inch | 1,663.000 LF | _____. | _____. |
| 0258 | 608.2358 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 58x91-Inch | 1,066.000 LF | _____. | _____. |
| 0260 | 608.2419 Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch | 80.000 LF | _____. | _____. |
| 0262 | 608.6010 Storm Sewer Pipe Composite 10-Inch | 33.000 LF | _____. | _____. |
| 0264 | 611.0420 Reconstructing Manholes | 1.000 EACH | _____. | _____. |



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Alt Set ID:

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| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0266 | 611.0430 Reconstructing Inlets | 5.000 EACH | _____. | _____. |
| 0268 | 611.0530 Manhole Covers Type J | 22.000 EACH | _____. | _____. |
| 0270 | 611.0535 Manhole Covers Type J-Special | 35.000 EACH | _____. | _____. |
| 0272 | 611.0606 Inlet Covers Type B | 1.000 EACH | _____. | _____. |
| 0274 | 611.0609 Inlet Covers Type B-A | 1.000 EACH | _____. | _____. |
| 0276 | 611.0610 Inlet Covers Type BW | 11.000 EACH | _____. | _____. |
| 0278 | 611.0612 Inlet Covers Type C | 33.000 EACH | _____. | _____. |
| 0280 | 611.0624 Inlet Covers Type H | 55.000 EACH | _____. | _____. |
| 0282 | 611.0639 Inlet Covers Type H-S | 26.000 EACH | _____. | _____. |
| 0284 | 611.0642 Inlet Covers Type MS | 19.000 EACH | _____. | _____. |
| 0286 | 611.0652 Inlet Covers Type T | 2.000 EACH | _____. | _____. |
| 0288 | 611.0654 Inlet Covers Type V | 117.000 EACH | _____. | _____. |
| 0290 | 611.1005 Catch Basins 5-FT Diameter | 10.000 EACH | _____. | _____. |
| 0292 | 611.1006 Catch Basins 6-FT Diameter | 4.000 EACH | _____. | _____. |
| 0294 | 611.2004 Manholes 4-FT Diameter | 23.000 EACH | _____. | _____. |
| 0296 | 611.2005 Manholes 5-FT Diameter | 10.000 EACH | _____. | _____. |
| 0298 | 611.2006 Manholes 6-FT Diameter | 21.000 EACH | _____. | _____. |



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Contract Items

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|----------------------|--|--------------------------------|------------|------------|
| 0300 | 611.2007 Manholes 7-FT Diameter | 9.000 EACH | _____. | _____. |
| 0302 | 611.2008 Manholes 8-FT Diameter | 17.000 EACH | _____. | _____. |
| 0304 | 611.3003 Inlets 3-FT Diameter | 1.000 EACH | _____. | _____. |
| 0306 | 611.3004 Inlets 4-FT Diameter | 95.000 EACH | _____. | _____. |
| 0308 | 611.3225 Inlets 2x2.5-FT | 61.000 EACH | _____. | _____. |
| 0310 | 611.3230 Inlets 2x3-FT | 34.000 EACH | _____. | _____. |
| 0312 | 611.3901 Inlets Median 1 Grate | 1.000 EACH | _____. | _____. |
| 0314 | 611.3902 Inlets Median 2 Grate | 9.000 EACH | _____. | _____. |
| 0316 | 611.8110 Adjusting Manhole Covers | 19.000 EACH | _____. | _____. |
| 0318 | 611.8115 Adjusting Inlet Covers | 52.000 EACH | _____. | _____. |
| 0320 | 612.0406 Pipe Underdrain Wrapped 6-Inch | 3,700.000 LF | _____. | _____. |
| 0322 | 612.0408 Pipe Underdrain Wrapped 8-Inch | 2,450.000 LF | _____. | _____. |
| 0324 | 612.0806 Apron Endwalls for Underdrain Reinforced Concrete 6-Inch | 1.000 EACH | _____. | _____. |
| 0326 | 614.0150 Anchor Assemblies for Steel Plate Beam Guard | 1.000 EACH | _____. | _____. |
| 0328 | 614.0397 Guardrail Mow Strip Emulsified Asphalt | 3,416.000 SY | _____. | _____. |
| 0330 | 614.0905 Crash Cushions Temporary | 8.000 EACH | _____. | _____. |



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|----------------------|--|--------------------------------|------------|------------|
| 0332 | 614.2300 MGS Guardrail 3 | 6,906.000 LF | _____. | _____. |
| 0334 | 614.2500 MGS Thrie Beam Transition | 390.000 LF | _____. | _____. |
| 0336 | 614.2610 MGS Guardrail Terminal EAT | 17.000 EACH | _____. | _____. |
| 0338 | 614.2620 MGS Guardrail Terminal Type 2 | 9.000 EACH | _____. | _____. |
| 0340 | 616.0206 Fence Chain Link 6-FT | 5,151.000 LF | _____. | _____. |
| 0342 | 616.0700.S Fence Safety | 2,950.000 LF | _____. | _____. |
| 0344 | 618.0100 Maintenance And Repair of Haul Roads (project) 01. 1517-75-73 | 1.000 EACH | _____. | _____. |
| 0346 | 618.0100 Maintenance And Repair of Haul Roads (project) 02. 1517-75-79 | 1.000 EACH | _____. | _____. |
| 0348 | 619.1000 Mobilization | 1.000 EACH | _____. | _____. |
| 0350 | 620.0200 Concrete Median Blunt Nose | 444.000 SF | _____. | _____. |
| 0352 | 620.0300 Concrete Median Sloped Nose | 769.000 SF | _____. | _____. |
| 0354 | 621.0100 Landmark Reference Monuments | 1.000 EACH | _____. | _____. |
| 0356 | 624.0100 Water | 2,013.000 MGAL | _____. | _____. |
| 0358 | 625.0100 Topsoil | 37,598.000 SY | _____. | _____. |
| 0360 | 625.0500 Salvaged Topsoil | 164,667.000 SY | _____. | _____. |
| 0362 | 628.1504 Silt Fence | 10,066.000 LF | _____. | _____. |



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Alt Mbr ID:

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|----------------------|---|--------------------------------|------------|------------|
| 0364 | 628.1520 Silt Fence Maintenance | 10,066.000 LF | _____. | _____. |
| 0366 | 628.1905 Mobilizations Erosion Control | 28.000 EACH | _____. | _____. |
| 0368 | 628.1910 Mobilizations Emergency Erosion Control | 17.000 EACH | _____. | _____. |
| 0370 | 628.2004 Erosion Mat Class I Type B | 181,527.000 SY | _____. | _____. |
| 0372 | 628.2006 Erosion Mat Urban Class I Type A | 4,438.000 SY | _____. | _____. |
| 0374 | 628.2008 Erosion Mat Urban Class I Type B | 14,300.000 SY | _____. | _____. |
| 0376 | 628.7005 Inlet Protection Type A | 129.000 EACH | _____. | _____. |
| 0378 | 628.7010 Inlet Protection Type B | 253.000 EACH | _____. | _____. |
| 0380 | 628.7015 Inlet Protection Type C | 61.000 EACH | _____. | _____. |
| 0382 | 628.7020 Inlet Protection Type D | 34.000 EACH | _____. | _____. |
| 0384 | 628.7504 Temporary Ditch Checks | 1,501.000 LF | _____. | _____. |
| 0386 | 628.7555 Culvert Pipe Checks | 160.000 EACH | _____. | _____. |
| 0388 | 628.7560 Tracking Pads | 14.000 EACH | _____. | _____. |
| 0390 | 629.0210 Fertilizer Type B | 117.800 CWT | _____. | _____. |
| 0392 | 630.0130 Seeding Mixture No. 30 | 3,070.000 LB | _____. | _____. |
| 0394 | 630.0140 Seeding Mixture No. 40 | 398.000 LB | _____. | _____. |
| 0396 | 630.0200 Seeding Temporary | 1,075.000 LB | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0398 | 630.0400 Seeding Nurse Crop | 415.000 LB | _____. | _____. |
| 0400 | 633.0100 Delineator Posts Steel | 249.000 EACH | _____. | _____. |
| 0402 | 633.0500 Delineator Reflectors | 429.000 EACH | _____. | _____. |
| 0404 | 633.1000 Delineator Brackets | 180.000 EACH | _____. | _____. |
| 0406 | 633.5200 Markers Culvert End | 28.000 EACH | _____. | _____. |
| 0408 | 634.0612 Posts Wood 4x6-Inch X 12-FT | 4.000 EACH | _____. | _____. |
| 0410 | 634.0614 Posts Wood 4x6-Inch X 14-FT | 52.000 EACH | _____. | _____. |
| 0412 | 634.0616 Posts Wood 4x6-Inch X 16-FT | 78.000 EACH | _____. | _____. |
| 0414 | 634.0618 Posts Wood 4x6-Inch X 18-FT | 7.000 EACH | _____. | _____. |
| 0416 | 634.0808 Posts Tubular Steel 2x2-Inch X 8-FT | 4.000 EACH | _____. | _____. |
| 0418 | 635.0200 Sign Supports Structural Steel HS | 2,756.000 LB | _____. | _____. |
| 0420 | 636.0100 Sign Supports Concrete Masonry | 409.000 CY | _____. | _____. |
| 0422 | 636.0500 Sign Supports Steel Reinforcement | 340.000 LB | _____. | _____. |
| 0424 | 636.1000 Sign Supports Steel Reinforcement HS | 2,840.000 LB | _____. | _____. |
| 0426 | 636.1500 Sign Supports Steel Coated Reinforcement HS | 49,760.000 LB | _____. | _____. |
| 0428 | 637.1220 Signs Type I Reflective SH | 7,764.500 SF | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0430 | 637.1230 Signs Type I Reflective F | 90.000 SF | _____. | _____. |
| 0432 | 637.2210 Signs Type II Reflective H | 1,398.460 SF | _____. | _____. |
| 0434 | 637.2215 Signs Type II Reflective H Folding | 124.440 SF | _____. | _____. |
| 0436 | 637.2230 Signs Type II Reflective F | 251.250 SF | _____. | _____. |
| 0438 | 638.2601 Removing Signs Type I | 13.000 EACH | _____. | _____. |
| 0440 | 638.2602 Removing Signs Type II | 122.000 EACH | _____. | _____. |
| 0442 | 638.3000 Removing Small Sign Supports | 109.000 EACH | _____. | _____. |
| 0444 | 638.3100 Removing Structural Steel Sign Supports | 20.000 EACH | _____. | _____. |
| 0446 | 640.1303.S Pond Liner Clay | 34,750.000 CY | _____. | _____. |
| 0448 | 641.1200 Sign Bridge Cantilevered (structure) 01. S-08-52 | LS | LUMP SUM | _____. |
| 0450 | 641.1200 Sign Bridge Cantilevered (structure) 02. S-08-54 | LS | LUMP SUM | _____. |
| 0452 | 641.1200 Sign Bridge Cantilevered (structure) 03. S-08-055 | LS | LUMP SUM | _____. |
| 0454 | 641.1200 Sign Bridge Cantilevered (structure) 04. S-70-225 | LS | LUMP SUM | _____. |
| 0456 | 641.6600 Sign Bridge (structure) 01. S-70-217 | LS | LUMP SUM | _____. |
| 0458 | 641.6600 Sign Bridge (structure) 02. S-70-218 | LS | LUMP SUM | _____. |
| 0460 | 641.6600 Sign Bridge (structure) 03. S-70-220 | LS | LUMP SUM | _____. |



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Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0462 | 641.6600 Sign Bridge (structure) 04. S-70-221 | LS | LUMP SUM | _____. |
| 0464 | 641.6600 Sign Bridge (structure) 05. S-70-227 | LS | LUMP SUM | _____. |
| 0466 | 641.6600 Sign Bridge (structure) 06. S-70-234 | LS | LUMP SUM | _____. |
| 0468 | 641.6600 Sign Bridge (structure) 07. S-70-236 | LS | LUMP SUM | _____. |
| 0470 | 641.6600 Sign Bridge (structure) 08. S-70-237 | LS | LUMP SUM | _____. |
| 0472 | 641.6600 Sign Bridge (structure) 09. S-70-261 | LS | LUMP SUM | _____. |
| 0474 | 641.6600 Sign Bridge (structure) 10. S-70-262 | LS | LUMP SUM | _____. |
| 0476 | 641.6600 Sign Bridge (structure) 11. S-70-235 | LS | LUMP SUM | _____. |
| 0478 | 641.8100 Overhead Sign Support (structure) 01. S-08-0050 | LS | LUMP SUM | _____. |
| 0480 | 641.8100 Overhead Sign Support (structure) 02. S-08-0051 | LS | LUMP SUM | _____. |
| 0482 | 641.8100 Overhead Sign Support (structure) 03. S-70-0238 | LS | LUMP SUM | _____. |
| 0484 | 641.8100 Overhead Sign Support (structure) 04. S-70-239 | LS | LUMP SUM | _____. |
| 0486 | 641.8100 Overhead Sign Support (structure) 05. S-70-0256 | LS | LUMP SUM | _____. |
| 0488 | 642.5401 Field Office Type D | 1.000 EACH | _____. | _____. |
| 0490 | 643.0300 Traffic Control Drums | 135,145.000 DAY | _____. | _____. |



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Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0492 | 643.0420 Traffic Control Barricades Type III | 10,759.000 DAY | _____. | _____. |
| 0494 | 643.0500 Traffic Control Flexible Tubular Marker Posts | 5.000 EACH | _____. | _____. |
| 0496 | 643.0600 Traffic Control Flexible Tubular Marker Bases | 5.000 EACH | _____. | _____. |
| 0498 | 643.0705 Traffic Control Warning Lights Type A | 23,562.000 DAY | _____. | _____. |
| 0500 | 643.0715 Traffic Control Warning Lights Type C | 13,320.000 DAY | _____. | _____. |
| 0502 | 643.0800 Traffic Control Arrow Boards | 171.000 DAY | _____. | _____. |
| 0504 | 643.0900 Traffic Control Signs | 92,178.000 DAY | _____. | _____. |
| 0506 | 643.0910 Traffic Control Covering Signs Type I | 26.000 EACH | _____. | _____. |
| 0508 | 643.0920 Traffic Control Covering Signs Type II | 39.000 EACH | _____. | _____. |
| 0510 | 643.1000 Traffic Control Signs Fixed Message | 742.000 SF | _____. | _____. |
| 0512 | 643.1050 Traffic Control Signs PCMS | 150.000 DAY | _____. | _____. |
| 0514 | 644.1410.S Temporary Pedestrian Surface Asphalt | 1,861.000 SF | _____. | _____. |
| 0516 | 644.1601.S Temporary Curb Ramp | 4.000 EACH | _____. | _____. |
| 0518 | 644.1616.S Temporary Pedestrian Safety Fence | 2,375.000 LF | _____. | _____. |
| 0520 | 645.0111 Geotextile Type DF Schedule A | 34.000 SY | _____. | _____. |
| 0522 | 645.0112 Geotextile Type DF Schedule B | 13,393.000 SY | _____. | _____. |



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Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0524 | 645.0120 Geotextile Type HR | 3,741.000 SY | _____. | _____. |
| 0526 | 645.0130 Geotextile Type R | 80.000 SY | _____. | _____. |
| 0528 | 646.1020 Marking Line Epoxy 4-Inch | 108,317.000 LF | _____. | _____. |
| 0530 | 646.1555 Marking Line Grooved Contrast Permanent Tape 4-Inch | 19,044.000 LF | _____. | _____. |
| 0532 | 646.3020 Marking Line Epoxy 8-Inch | 2,663.000 LF | _____. | _____. |
| 0534 | 646.3555 Marking Line Grooved Contrast Permanent Tape 8-Inch | 18,515.000 LF | _____. | _____. |
| 0536 | 646.5020 Marking Arrow Epoxy | 67.000 EACH | _____. | _____. |
| 0538 | 646.5120 Marking Word Epoxy | 5.000 EACH | _____. | _____. |
| 0540 | 646.5220 Marking Symbol Epoxy | 17.000 EACH | _____. | _____. |
| 0542 | 646.6120 Marking Stop Line Epoxy 18-Inch | 317.000 LF | _____. | _____. |
| 0544 | 646.7020 Marking Diagonal Epoxy 6-Inch | 57.000 LF | _____. | _____. |
| 0546 | 646.7220 Marking Chevron Epoxy 24-Inch | 29.000 LF | _____. | _____. |
| 0548 | 646.7420 Marking Crosswalk Epoxy Transverse Line 6-Inch | 501.000 LF | _____. | _____. |
| 0550 | 646.8220 Marking Island Nose Epoxy | 7.000 EACH | _____. | _____. |
| 0552 | 646.9000 Marking Removal Line 4-Inch | 24,500.000 LF | _____. | _____. |
| 0554 | 646.9100 Marking Removal Line 8-Inch | 2,750.000 LF | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0556 | 649.0105 Temporary Marking Line Paint 4-Inch | 93,861.000 LF | _____. | _____. |
| 0558 | 649.0120 Temporary Marking Line Epoxy 4-Inch | 88,397.000 LF | _____. | _____. |
| 0560 | 649.0150 Temporary Marking Line Removable Tape 4-Inch | 4,443.000 LF | _____. | _____. |
| 0562 | 649.0205 Temporary Marking Line Paint 8-Inch | 1,568.000 LF | _____. | _____. |
| 0564 | 649.0220 Temporary Marking Line Epoxy 8-Inch | 5,827.000 LF | _____. | _____. |
| 0566 | 649.0250 Temporary Marking Line Removable Tape 8-Inch | 186.000 LF | _____. | _____. |
| 0568 | 649.0770 Temporary Marking Raised Pavement Marker Type II | 624.000 EACH | _____. | _____. |
| 0570 | 652.0125 Conduit Rigid Metallic 2-Inch | 1,400.000 LF | _____. | _____. |
| 0572 | 652.0210 Conduit Rigid Nonmetallic Schedule 40 1-Inch | 380.000 LF | _____. | _____. |
| 0574 | 652.0225 Conduit Rigid Nonmetallic Schedule 40 2-Inch | 27,269.000 LF | _____. | _____. |
| 0576 | 652.0235 Conduit Rigid Nonmetallic Schedule 40 3-Inch | 3,815.000 LF | _____. | _____. |
| 0578 | 652.0325 Conduit Rigid Nonmetallic Schedule 80 2-Inch | 5,908.000 LF | _____. | _____. |
| 0580 | 652.0800 Conduit Loop Detector | 1,795.000 LF | _____. | _____. |
| 0582 | 653.0105 Pull Boxes Steel 12x24-Inch | 13.000 EACH | _____. | _____. |
| 0584 | 653.0145 Pull Boxes Steel 24x48-Inch | 47.000 EACH | _____. | _____. |



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Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0586 | 653.0164 Pull Boxes Non-Conductive 24x42-Inch | 44.000 EACH | _____. | _____. |
| 0588 | 653.0220 Junction Boxes 18x6x6-Inch | 8.000 EACH | _____. | _____. |
| 0590 | 653.0222 Junction Boxes 18x12x6-Inch | 4.000 EACH | _____. | _____. |
| 0592 | 653.0905 Removing Pull Boxes | 4.000 EACH | _____. | _____. |
| 0594 | 654.0101 Concrete Bases Type 1 | 14.000 EACH | _____. | _____. |
| 0596 | 654.0102 Concrete Bases Type 2 | 7.000 EACH | _____. | _____. |
| 0598 | 654.0105 Concrete Bases Type 5 | 39.000 EACH | _____. | _____. |
| 0600 | 654.0107 Concrete Bases Type 7 | 23.000 EACH | _____. | _____. |
| 0602 | 654.0110 Concrete Bases Type 10 | 1.000 EACH | _____. | _____. |
| 0604 | 654.0113 Concrete Bases Type 13 | 3.000 EACH | _____. | _____. |
| 0606 | 654.0217 Concrete Control Cabinet Bases Type 9 Special | 2.000 EACH | _____. | _____. |
| 0608 | 654.1150 Concrete Bases Camera Pole 50-FT | 2.000 EACH | _____. | _____. |
| 0610 | 655.0230 Cable Traffic Signal 5-14 AWG | 8,370.000 LF | _____. | _____. |
| 0612 | 655.0305 Cable Type UF 2-12 AWG Grounded | 5,710.000 LF | _____. | _____. |
| 0614 | 655.0515 Electrical Wire Traffic Signals 10 AWG | 3,370.000 LF | _____. | _____. |
| 0616 | 655.0610 Electrical Wire Lighting 12 AWG | 10,320.000 LF | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0618 | 655.0615 Electrical Wire Lighting 10 AWG | 5,055.000 LF | _____. | _____. |
| 0620 | 655.0620 Electrical Wire Lighting 8 AWG | 9,518.000 LF | _____. | _____. |
| 0622 | 655.0625 Electrical Wire Lighting 6 AWG | 37,592.000 LF | _____. | _____. |
| 0624 | 655.0630 Electrical Wire Lighting 4 AWG | 61.000 LF | _____. | _____. |
| 0626 | 655.0635 Electrical Wire Lighting 2 AWG | 183.000 LF | _____. | _____. |
| 0628 | 655.0700 Loop Detector Lead In Cable | 4,630.000 LF | _____. | _____. |
| 0630 | 655.0800 Loop Detector Wire | 4,680.000 LF | _____. | _____. |
| 0632 | 656.0200 Electrical Service Meter Breaker Pedestal (location) 01. Tellulah | LS | LUMP SUM | _____. |
| 0634 | 656.0200 Electrical Service Meter Breaker Pedestal (location) 02. Oneida | LS | LUMP SUM | _____. |
| 0636 | 656.0200 Electrical Service Meter Breaker Pedestal (location) 03. USH 10 & STH 441 NB | LS | LUMP SUM | _____. |
| 0638 | 656.0200 Electrical Service Meter Breaker Pedestal (location) 04. USH 10 & STH 441 SB | LS | LUMP SUM | _____. |
| 0640 | 656.0500 Electrical Service Breaker Disconnect Box (location) 01. Tellulah | LS | LUMP SUM | _____. |
| 0642 | 656.0500 Electrical Service Breaker Disconnect Box (location) 02. DMS-07-0015 | LS | LUMP SUM | _____. |
| 0644 | 657.0100 Pedestal Bases | 14.000 EACH | _____. | _____. |



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Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0646 | 657.0210 Transformer Bases Breakaway 15-17 Inch Bolt Circle | 23.000 EACH | _____. | _____. |
| 0648 | 657.0255 Transformer Bases Breakaway 11 1/2- Inch Bolt Circle | 45.000 EACH | _____. | _____. |
| 0650 | 657.0315 Poles Type 4 | 6.000 EACH | _____. | _____. |
| 0652 | 657.0322 Poles Type 5-Aluminum | 35.000 EACH | _____. | _____. |
| 0654 | 657.0337 Poles Type 17-Aluminum | 28.000 EACH | _____. | _____. |
| 0656 | 657.0420 Traffic Signal Standards Aluminum 13-FT | 11.000 EACH | _____. | _____. |
| 0658 | 657.0430 Traffic Signal Standards Aluminum 10-FT | 3.000 EACH | _____. | _____. |
| 0660 | 657.0615 Luminaire Arms Single Member 4 1/2- Inch Clamp 8-FT | 11.000 EACH | _____. | _____. |
| 0662 | 657.0709 Luminaire Arms Truss Type 4-Inch Clamp 12-FT | 10.000 EACH | _____. | _____. |
| 0664 | 657.0710 Luminaire Arms Truss Type 4 1/2-Inch Clamp 12-FT | 12.000 EACH | _____. | _____. |
| 0666 | 657.0730 Luminaire Arms Truss Type 6-Inch Clamp 12-FT | 31.000 EACH | _____. | _____. |
| 0668 | 657.1350 Install Poles Type 10 | 1.000 EACH | _____. | _____. |
| 0670 | 657.1360 Install Poles Type 13 | 3.000 EACH | _____. | _____. |
| 0672 | 657.1530 Install Monotube Arms 30-FT | 1.000 EACH | _____. | _____. |
| 0674 | 657.1535 Install Monotube Arms 35-FT | 1.000 EACH | _____. | _____. |



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Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0676 | 657.1540 Install Monotube Arms 40-FT | 1.000 EACH | _____. | _____. |
| 0678 | 657.1550 Install Monotube Arms 50-FT | 1.000 EACH | _____. | _____. |
| 0680 | 657.1812 Install Luminaire Arms Steel 12-FT | 4.000 EACH | _____. | _____. |
| 0682 | 657.6005 Anchor Assemblies Light Poles on Structures | 3.000 EACH | _____. | _____. |
| 0684 | 658.0173 Traffic Signal Face 3S 12-Inch | 29.000 EACH | _____. | _____. |
| 0686 | 658.0416 Pedestrian Signal Face 16-Inch | 10.000 EACH | _____. | _____. |
| 0688 | 658.0500 Pedestrian Push Buttons | 10.000 EACH | _____. | _____. |
| 0690 | 658.5069 Signal Mounting Hardware (location) 001. USH 10 & STH 441 NB | LS | LUMP SUM | _____. |
| 0692 | 658.5069 Signal Mounting Hardware (location) 002. USH 10 & STH 441 SB | LS | LUMP SUM | _____. |
| 0694 | 659.0600 Underdeck Lighting (location) 001. B-70-115 | LS | LUMP SUM | _____. |
| 0696 | 659.0600 Underdeck Lighting (location) 002. B-70-116 | LS | LUMP SUM | _____. |
| 0698 | 659.1120 Luminaires Utility LED B | 26.000 EACH | _____. | _____. |
| 0700 | 659.1125 Luminaires Utility LED C | 25.000 EACH | _____. | _____. |
| 0702 | 659.1130 Luminaires Utility LED D | 6.000 EACH | _____. | _____. |
| 0704 | 659.1210 Luminaires Underdeck LED B | 8.000 EACH | _____. | _____. |



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Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0706 | 662.2024.S Ramp Closure Gates Solar 24-FT | 2.000 EACH | _____. | _____. |
| 0708 | 662.2030.S Ramp Closure Gates Solar 30-FT | 1.000 EACH | _____. | _____. |
| 0710 | 662.2040.S Ramp Closure Gates Solar 40-FT | 1.000 EACH | _____. | _____. |
| 0712 | 670.0100 Field System Integrator | LS | LUMP SUM | _____. |
| 0714 | 670.0200 ITS Documentation | LS | LUMP SUM | _____. |
| 0716 | 671.0132 Conduit HDPE 3-Duct 2-Inch | 19,841.000 LF | _____. | _____. |
| 0718 | 671.0142 Conduit HDPE 4-Duct 2-Inch | 3,437.000 LF | _____. | _____. |
| 0720 | 671.0212 Conduit HDPE Directional Bore 1-Duct 2-Inch | 102.000 LF | _____. | _____. |
| 0722 | 671.0222 Conduit HDPE Directional Bore 2-Duct 2-Inch | 2,028.000 LF | _____. | _____. |
| 0724 | 671.0232 Conduit HDPE Directional Bore 3-Duct 2-Inch | 1,861.000 LF | _____. | _____. |
| 0726 | 671.0242 Conduit HDPE Directional Bore 4-Duct 2-Inch | 1,098.000 LF | _____. | _____. |
| 0728 | 671.0300 Fiber Optic Cable Marker | 214.000 EACH | _____. | _____. |
| 0730 | 673.0105 Communication Vault Type 1 | 24.000 EACH | _____. | _____. |
| 0732 | 673.0225.S Install Pole Mounted Cabinet | 2.000 EACH | _____. | _____. |
| 0734 | 674.0200 Cable Microwave Detector | 21,340.000 LF | _____. | _____. |



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| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0736 | 675.0300 Install Mounted Controller Microwave Detector Assembly | 15.000 EACH | _____. | _____. |
| 0738 | 677.0150 Install Camera Pole 50-FT | 1.000 EACH | _____. | _____. |
| 0740 | 677.0200 Install Camera Assembly | 1.000 EACH | _____. | _____. |
| 0742 | 678.0006 Install Fiber Optic Cable Outdoor Plant 6-CT | 1,578.000 LF | _____. | _____. |
| 0744 | 678.0072 Install Fiber Optic Cable Outdoor Plant 72-CT | 30,479.000 LF | _____. | _____. |
| 0746 | 678.0100.S Install Overhead Freeway DMS Full Matrix | 1.000 EACH | _____. | _____. |
| 0748 | 678.0200 Fiber Optic Splice Enclosure | 6.000 EACH | _____. | _____. |
| 0750 | 678.0300 Fiber Optic Splice | 213.000 EACH | _____. | _____. |
| 0752 | 678.0400 Fiber Optic Termination | 36.000 EACH | _____. | _____. |
| 0754 | 678.0500 Communication System Testing | LS | LUMP SUM | _____. |
| 0756 | 678.0600 Install Ethernet Switches | 2.000 EACH | _____. | _____. |
| 0758 | 690.0150 Sawing Asphalt | 1,918.000 LF | _____. | _____. |
| 0760 | 690.0250 Sawing Concrete | 2,385.000 LF | _____. | _____. |
| 0762 | 715.0415 Incentive Strength Concrete Pavement | 67,826.000 DOL | 1.00000 | 67,826.00 |
| 0764 | 715.0502 Incentive Strength Concrete Structures | 4,530.000 DOL | 1.00000 | 4,530.00 |
| 0766 | 999.1500.S Crack and Damage Survey | LS | LUMP SUM | _____. |



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Alt Set ID:

Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0768 | ASP.1T0A On-the-Job Training Apprentice at \$5.00/HR | 2,100.000 HRS | 5.00000 | 10,500.00 |
| 0770 | ASP.1T0G On-the-Job Training Graduate at \$5.00/HR | 5,760.000 HRS | 5.00000 | 28,800.00 |
| 0772 | SPV.0035 Special 001. Roadway Embankment | 110,215.000 CY | _____. | _____. |
| 0774 | SPV.0045 Special 200. Traffic Control Surveillance and Maintenance 1517-75-73 | 565.000 DAY | _____. | _____. |
| 0776 | SPV.0045 Special 201. Traffic Control Surveillance and Maintenance 1517-75-79 | 90.000 DAY | _____. | _____. |
| 0778 | SPV.0060 Special 001. CPM Baseline Schedule | 1.000 EACH | _____. | _____. |
| 0780 | SPV.0060 Special 002. CPM Schedule Monthly Updates | 18.000 EACH | _____. | _____. |
| 0782 | SPV.0060 Special 003. Concrete Barrier Transition Type S56 (54-Inch Wide Base) to Type S56 (36-In | 1.000 EACH | _____. | _____. |
| 0784 | SPV.0060 Special 004. Concrete Barrier Transition Special Type S56A(54-Inch WideBase) toType S56A | 1.000 EACH | _____. | _____. |
| 0786 | SPV.0060 Special 005. Concrete Barrier Transition Type V56 to S56 (36-Inch to 30-Inch Wide Base) | 2.000 EACH | _____. | _____. |
| 0788 | SPV.0060 Special 006. Concrete Barrier Transition Type V56 to S56 (42-Inch to 36-Inch Wide Base) | 4.000 EACH | _____. | _____. |
| 0790 | SPV.0060 Special 007. 35' Concrete Barrier Type S42C Transition to 6-Inch Height | 2.000 EACH | _____. | _____. |



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Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|---|--------------------------------|------------|------------|
| 0792 | SPV.0060 Special 008. 70' Concrete Barrier Type S42C Transition to 6-Inch Height | 2.000 EACH | _____. | _____. |
| 0794 | SPV.0060 Special 009. Bike Rack | 1.000 EACH | _____. | _____. |
| 0796 | SPV.0060 Special 010. Trash Receptacle | 1.000 EACH | _____. | _____. |
| 0798 | SPV.0060 Special 011. Backed Bench (3) Seats | 1.000 EACH | _____. | _____. |
| 0800 | SPV.0060 Special 012. Bus Shelter | 1.000 EACH | _____. | _____. |
| 0802 | SPV.0060 Special 100. Manholes 10-FT Diameter | 4.000 EACH | _____. | _____. |
| 0804 | SPV.0060 Special 101. Manholes 12-FT Diameter | 3.000 EACH | _____. | _____. |
| 0806 | SPV.0060 Special 102. Manholes 10x12-FT | 1.000 EACH | _____. | _____. |
| 0808 | SPV.0060 Special 103. Pond Outlet Control Manhole | 2.000 EACH | _____. | _____. |
| 0810 | SPV.0060 Special 104. Detention Pond Corrugated Metal Anti-Seep Collar | 2.000 EACH | _____. | _____. |
| 0812 | SPV.0060 Special 105. Flared End Section with Trash Rack | 2.000 EACH | _____. | _____. |
| 0814 | SPV.0060 Special 106. Slip-In Check Valve for 24-Inch Diameter Pipe | 1.000 EACH | _____. | _____. |
| 0816 | SPV.0060 Special 107. Slip-In Check Valve for 36-Inch Diameter Pipe | 2.000 EACH | _____. | _____. |
| 0818 | SPV.0060 Special 108. Bolting Inlet Cover | 15.000 EACH | _____. | _____. |
| 0820 | SPV.0060 Special 109. Storm Sewer Plug | 1.000 EACH | _____. | _____. |



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| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0822 | SPV.0060 Special 200. Maintenance and Removal of Crash Cushions Temporary Left In Place By Others | 2.000 EACH | _____. | _____. |
| 0824 | SPV.0060 Special 201. Maintain Traffic Control Signs Left In Place | 69.000 EACH | _____. | _____. |
| 0826 | SPV.0060 Special 202. Maintain Traffic Control Drums Left In Place | 188.000 EACH | _____. | _____. |
| 0828 | SPV.0060 Special 203. Maintain Traffic Control Barricades Left In Place | 11.000 EACH | _____. | _____. |
| 0830 | SPV.0060 Special 204. Maintain Traffic Control Warning Lights Type A Left In Place | 22.000 EACH | _____. | _____. |
| 0832 | SPV.0060 Special 205. Maintain Traffic Control Warning Lights Type C Left In Place | 5.000 EACH | _____. | _____. |
| 0834 | SPV.0060 Special 206. Moving Traffic Control Signs Fixed Message | 1.000 EACH | _____. | _____. |
| 0836 | SPV.0060 Special 207. Maintain and Remove Temporary Thrie Beam Connection Left In Place | 7.000 EACH | _____. | _____. |
| 0838 | SPV.0060 Special 208. Maintain Delineators Left In Place | 22.000 EACH | _____. | _____. |
| 0840 | SPV.0060 Special 209. Maintain Traffic Control Signs Fixed Message Left In Place | 3.000 EACH | _____. | _____. |
| 0842 | SPV.0060 Special 250. Removing Sand Barrel Array and Concrete Pad at Sign Structure Support | 4.000 EACH | _____. | _____. |
| 0844 | SPV.0060 Special 252. Remove Commercial Sign | 2.000 EACH | _____. | _____. |
| 0846 | SPV.0060 Special 350. Concrete Bases Type 7 Median | 46.000 EACH | _____. | _____. |



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Alt Set ID:

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|----------------------|---|--------------------------------|------------|------------|
| 0848 | SPV.0060 Special 351. Anchor Bolt Cover Shroud | 58.000 EACH | _____. | _____. |
| 0850 | SPV.0060 Special 352. Concrete Bases Type 1 Median | 15.000 EACH | _____. | _____. |
| 0852 | SPV.0060 Special 353. Luminaires Utility LED B Special | 3.000 EACH | _____. | _____. |
| 0854 | SPV.0060 Special 354. Luminaires Utility LED C Special | 8.000 EACH | _____. | _____. |
| 0856 | SPV.0060 Special 355. Remove Lighting Fixtures | 4.000 EACH | _____. | _____. |
| 0858 | SPV.0060 Special 400. Remove and Deliver Existing Ramp Gate | 4.000 EACH | _____. | _____. |
| 0860 | SPV.0060 Special 401. Remove and Relocate Camera Assembly | 1.000 EACH | _____. | _____. |
| 0862 | SPV.0060 Special 402. Remove and Relocate Ethernet Switch | 1.000 EACH | _____. | _____. |
| 0864 | SPV.0060 Special 403. Remove and Relocate Video Encoder | 1.000 EACH | _____. | _____. |
| 0866 | SPV.0060 Special 404. Remove and Relocate Pole Mounted Cabinet | 1.000 EACH | _____. | _____. |
| 0868 | SPV.0060 Special 405. Remove Wood Pole | 1.000 EACH | _____. | _____. |
| 0870 | SPV.0060 Special 406. Tracer Test Station | 7.000 EACH | _____. | _____. |
| 0872 | SPV.0060 Special 407. Salvage Radio Link | 6.000 EACH | _____. | _____. |
| 0874 | SPV.0060 Special 408. Install Terminal Server | 5.000 EACH | _____. | _____. |
| 0876 | SPV.0060 Special 409. Install Termination Panel | 6.000 EACH | _____. | _____. |



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|----------------------|---|--------------------------------|------------|------------|
| 0878 | SPV.0060 Special 410. Plaques Sequence Identification | 4.000 EACH | _____. | _____. |
| 0880 | SPV.0060 Special 650. Utility Line Opening | 1.000 EACH | _____. | _____. |
| 0882 | SPV.0060 Special 651. Adjusting Sanitary Manhole Covers | 17.000 EACH | _____. | _____. |
| 0884 | SPV.0060 Special 652. Adjusting Water Valves | 23.000 EACH | _____. | _____. |
| 0886 | SPV.0060 Special 653. Adjusting Water Curb Stops | 23.000 EACH | _____. | _____. |
| 0888 | SPV.0075 Special 001. Street Sweeping | 140.000 HRS | _____. | _____. |
| 0890 | SPV.0085 Special 001. Pond Edge Seed | 485.000 LB | _____. | _____. |
| 0892 | SPV.0090 Special 001. Concrete Curb and Gutter 18-Inch Type D SHES | 141.000 LF | _____. | _____. |
| 0894 | SPV.0090 Special 002. Concrete Curb Pedestrian A | 81.000 LF | _____. | _____. |
| 0896 | SPV.0090 Special 003. Concrete Barrier Type S56 (36-Inch Wide Base) | 3,799.000 LF | _____. | _____. |
| 0898 | SPV.0090 Special 004. Concrete Barrier Type S56A (36-Inch Wide Base) | 270.000 LF | _____. | _____. |
| 0900 | SPV.0090 Special 100. Trenched Rodent Protection | 2,145.000 LF | _____. | _____. |
| 0902 | SPV.0090 Special 200. Maintain and Remove Concrete Barrier Temporary Precast Left In Place | 20,710.000 LF | _____. | _____. |
| 0904 | SPV.0090 Special 201. Concrete Barrier Temporary Precast Anchoring | 14,010.000 LF | _____. | _____. |



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|----------------------|--|--------------------------------|------------|------------|
| 0906 | SPV.0090 Special 350. Tray Cable, 2-8 AWG | 2,348.000 LF | _____. | _____. |
| 0908 | SPV.0090 Special 400. Tracer Wire 12-AWG | 32,057.000 LF | _____. | _____. |
| 0910 | SPV.0090 Special 402. Conduit HDPE 1-Duct 3-Inch | 1,995.000 LF | _____. | _____. |
| 0912 | SPV.0090 Special 403. Conduit HDPE Directional Bore 2-Duct 3-Inch | 211.000 LF | _____. | _____. |
| 0914 | SPV.0090 Special 404. Conduit HDPE Directional Bore 1-Duct 3-Inch | 360.000 LF | _____. | _____. |
| 0916 | SPV.0090 Special 850. Railing 42-Inch | 182.000 LF | _____. | _____. |
| 0918 | SPV.0105 Special 001. Colored Concrete Foundation 6-Inch Special | LS | LUMP SUM | _____. |
| 0920 | SPV.0105 Special 002. Survey Project 1517-75-73 | LS | LUMP SUM | _____. |
| 0922 | SPV.0105 Special 003. Survey Project 1517-75-79 | LS | LUMP SUM | _____. |
| 0924 | SPV.0105 Special 100. Concrete Masonry Headwall | LS | LUMP SUM | _____. |
| 0926 | SPV.0105 Special 450. Remove Traffic Signal (USH 10 & STH 441 NB) | LS | LUMP SUM | _____. |
| 0928 | SPV.0105 Special 451. Remove Traffic Signal (USH 10 & STH 441 SB) | LS | LUMP SUM | _____. |
| 0930 | SPV.0105 Special 900. Salvage Noise Barrier Panels | LS | LUMP SUM | _____. |
| 0932 | SPV.0105 Special 950. Removing Sign Support Structure S-70-19 | LS | LUMP SUM | _____. |



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| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
|----------------------|--|--------------------------------|------------|------------|
| 0934 | SPV.0105 Special 951. Removing Sign Support Structure S-08-01 | LS | LUMP SUM | _____. |
| 0936 | SPV.0120 Special 150. Water for Seeded Areas | 3,128.000 MGAL | _____. | _____. |
| 0938 | SPV.0165 Special 850. Temporary Wall Wire Faced Mechanically Stabilized Earth LRFD/QMP | 8,100.000 SF | _____. | _____. |
| 0940 | SPV.0165 Special 851. Wall Modular Block Gravity Landscape (STA 51 ONB+74-STA 342 TSEB+00) | 844.000 SF | _____. | _____. |
| 0942 | SPV.0165 Special 852. Prestressed Precast Concrete Wall Panel R-70-141 **P** | 5,945.000 SF | _____. | _____. |
| 0944 | SPV.0165 Special 853. Wall Wire Faced Mechanically Stabilized Earth LRFD/QMP R-70-141 **P** | 5,945.000 SF | _____. | _____. |
| 0946 | SPV.0165 Special 854. Wall Concrete Panel Mechanically Stabilized Earth R-08-002 **P** | 5,525.000 SF | _____. | _____. |
| 0948 | SPV.0180 Special 001. Modified High Performance Concrete (HPC) Pavement 9-Inch | 9,789.000 SY | _____. | _____. |
| 0950 | SPV.0180 Special 002. Modified High Performance Concrete (HPC) Pavement 10-Inch | 39,566.000 SY | _____. | _____. |
| 0952 | SPV.0180 Special 003. Modified High Performance Concrete (HPC) Pavement 11-Inch | 178,532.000 SY | _____. | _____. |
| 0954 | SPV.0180 Special 004. Concrete Pavement SHES 9-Inch | 3,871.000 SY | _____. | _____. |
| 0956 | SPV.0180 Special 005. Colored and Stamped Concrete 5-Inch, Color 10076 | 2,635.000 SY | _____. | _____. |



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Contract Items

Alt Set ID:

Alt Mbr ID:

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|----------------------|--|--------------------------------|------------|------------|
| 0958 | SPV.0180 Special 006. Colored & Stamped Concrete 5-Inch, Color 16293 | 4,377.000 SY | _____. | _____. |
| 0960 | SPV.0180 Special 007. Colored Concrete 5-Inch | 627.000 SY | _____. | _____. |
| 0962 | SPV.0180 Special 008. Colored Concrete 10-Inch | 151.000 SY | _____. | _____. |
| 0964 | SPV.0195 Special 001. Cold Patch | 20.000 TON | _____. | _____. |
| Section: 0001 | | | Total: | _____. |
| | | | Total Bid: | _____. |

PLEASE ATTACH SCHEDULE OF ITEMS HERE